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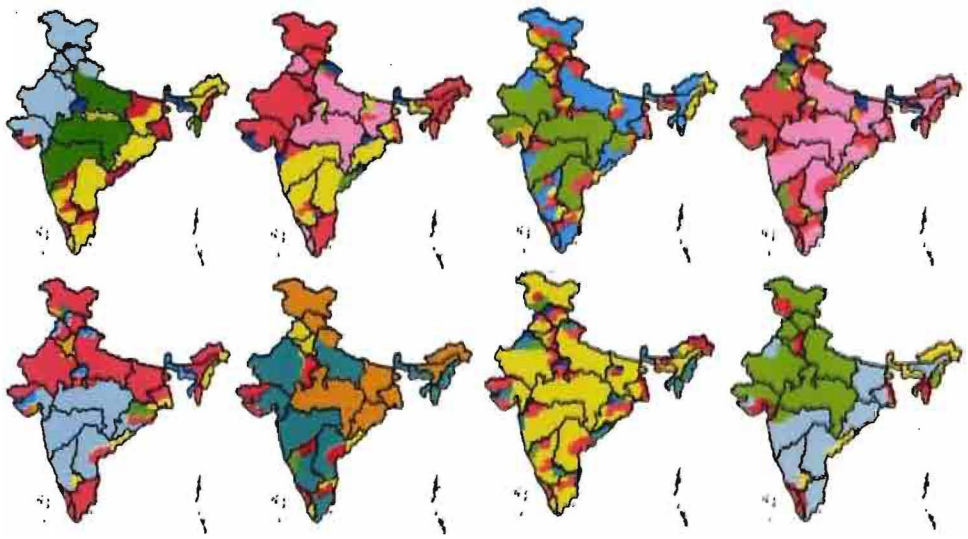
Edited by
C.Z.GUILMOTO
and A.VAGUET

Essays on Population and Space in India



INSTITUT FRANÇAIS DE PONDICHÉRY

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Essays on Population and Space in India

Edited by
Christophe Z. Guilmoto
and Alain Vaguet

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Christophe Z. GUILMOTO
and Alain VAGUET (Eds.)

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Map disclaimer: in spite of our efforts, the administrative boundaries shown on the maps in this volume may be neither correct nor accurate.

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Institut Français de Pondichéry, 11, rue Saint Louis, PB 33, Pondichéry 605 001
Tél: (413) 334170/334168, Fax: 91-413 339534
E-mail: instfran@giasmd01.vsnl.net.in
Website: http://www.ifpindia.org

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Contents

List of Tables and Figures

Tables

Figures

List of Contributors

ATKINS Peter J., University of Durham, United Kingdom.

BERNARD-GUETAT Hélène, Université de Toulouse le Mirail, France.

BOQUÉRAT Gilles, Centre de Sciences Humaines and Centre d'Etudes de l'Inde et de l'Asie du Sud, Delhi, India.

CHAPMAN Graham, University of Lancaster, Geography, United Kingdom.

CHAPPUIS Anne, Université de Rouen, France.

DUPONT Véronique, Institut de Recherche pour le Développement and Centre d'Etudes de l'Inde et de l'Asie du Sud, Paris, France.

ELIOT Emmanuel, Université de Rouen, France.

GOLBÉRY Luc de, Université de Rouen, France.

GUILMOTO Z. Christophe, Institut français de Pondichéry and Institut de Recherche pour le Développement, Pondicherry, India.

KUMAR Naresh, Jawaharlal Nehru University, New Delhi, India.

LANDY Frédéric, Université de Paris X Nanterre and Centre d'Etudes de l'Inde et de l'Asie du Sud, Paris, France.

LECLERC Eric, Université de Rouen, France.

LOUISET-VAGUET Odette, Université de Rouen, France.

PATHAK Pushpa, National Institute of Urban Affairs, New Delhi, India.

RACINE Jean-Luc, Centre National de la Recherche Scientifique and Centre d'Etudes de l'Inde et de l'Asie du Sud, Paris, France.

RAJU Saraswati, Jawaharlal Nehru University, New Delhi, India.

RIHOUEY Florence, Université de Rouen, France.

TOWNSEND Janet G., University of Durham, United Kingdom.

VAGUET Alain, Université de Rouen, France.

VÉRON Jacques, Institut National d'Etudes Démographiques, Paris, France.

Foreword

This collection of essays was first edited by Alain Vaguet and published in French in 1997. Its objective was to bring together for the French reader a group of studies on Indian population. Many of authors who participated in the project are geographers from the University of Rouen, an institution with a long tradition of research in India, and from other French academic and research centres such as the CEIAS (Centre d'Etudes de l'Inde et de l'Asie du Sud), CNRS (Centre National de la Recherche Scientifique), IRD (Institut de Recherche pour le Développement) and others. Even if the initial intention was to focus closely on the geography of population, the varied research interests of the authors opened a large number of areas related to *spatial organization* in India, integrating demographic, economic and anthropological questions.

Since the collection was well received by the French academic community, the editor Alain Vaguet, joined by Christophe Z. Guilmoto, prepared by an English (modified and updated) version in order to present these texts to a wider audience, primarily Indian readers. It is their wish to invite and stimulate further research and discussion regarding the compelling topic emerging from this collection - the *spatialization of social change in India*. The Department of Social Sciences at the French Institute, which actively pursues a research programme devoted to the changing spatial context of Indian society, welcomed this publication. It is an excellent occasion to make available the results of French research and scholarship to the scientific community in India.

The editors are indebted to the journal *Espace-Populations-Sociétés*, published by the University of Lille, for accepting to publish the volume in french on the occasion of the fiftieth anniversary of Indian independence, and for having supported this translation project from its inception. The editors are also grateful to Frédéric Landy for his initial assistance, as well as to the authors for having agreed to revise the translations and to modify the maps and figures, which turned out, at times, to be quite a complex activity. The volume has benefited a great deal from the assistance provided by Tiaré Purushothaman, G. Venkatasubramanian, James Walker and A.M. Stuttle, as well as by Corinne Giron, all of whom actively participated at various stages in the preparation of this work in Pondicherry.

Pondicherry and Rouen, 2000

Introduction: Spatial Contexts and Social Change

Christophe Z. GUILMOTO and Alain VAGUET

Indian territory, from regional to local level, remains a fundamentally composite space, divided into varying segments of more homogeneous appearance. Closer analysis, however, will soon show that these segments are themselves divided. This multiplicity of levels of differentiation in India rests upon a hierarchical grid of successively interlocking elements and, without any claim to exhaustiveness, a few successive stages can be noted: States arising after Independence, inclusive cultural region, linguistic and/or ethnic region, socio-historical sub-region, urban or rural localities, areas occupied by community or social class, street or hamlet, household and family, individuals distinguished on the basis of gender or age. The spaces and resources at each level are seen to be unequally shared among the actors who intervene in its continuous recomposition. In other words, each spatial context exhibits a high level of internal heterogeneity. To take a few examples, differences of a similar extent are visible between Kerala and the Gangetic valley (regional level), between town and countryside (local level), between upper classes and Dalits (social level), or between men and women (individual level). As the extent of this internal diversity in India may at times appear to be independent of the level under purview, it is reminiscent of a typical fractal structure.[1] This calls for a proper identification of oppositions and complementarities at each level of analysis, in order to describe the spatial structuration principles as obtained in India.

Many chapters in this collection, each in its own way, illustrate the ubiquity of oppositions running across the regions, irrespective of the level of analysis chosen. The perspective adopted for the studies is in most cases predominantly synchronic and brings to the fore the contrasts which oppose social groups among themselves and which leave their imprint on the forms in which space is occupied. However, when information allows, the point of view is more dynamic and integrates different periods of reference in the study of spatial transformation. It is, therefore, a matter of accentuating the transformations and conjunctions in and among spatial contexts, through such diverse exchange mechanisms as migrations, innovation diffusion, or epidemics.

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1. In reference to the fractal models which describe invariant processes according to scale and which are increasingly applied to urban growth. See Batty and Longley (1994).

The resulting image of India is that of a complex and rapidly evolving system characterized by perpetual spatial recombination. One can attempt to isolate different factors involved in social change, each of which has its own historical logic (slow or rapid trends, epiphenomena, historical accidents, ancestral institutional structures, etc.) operating at its own level (from local dynamics, nearly Brownian in nature, to regional groundswells). The mechanisms at work sometimes correspond to specific spatial contexts (for example, tribal India), but most often they constitute only one element among others which contribute to the structuring of spaces of composite regions. Thus, the high level of fertility in the Gangetic valley does not define a coherent space (except for the family planning lobby which concentrates its efforts there), even though it constitutes one of the characteristic features of a distinct cultural area in the interior of India. Each spatial context appears as the result of an ensemble of systems of social and economic relations around specific areas, established on exchange mechanisms as well as on struggles among local social groups. Space, therefore, corresponds more to a provisional status quo established among social dynamics, than it does to an invariant milieu.

India is today being constructed on this frame, combining inherited and continually re-negotiated spaces with those which are newly contested as a result of the migratory and economic redistribution characteristic of the dynamics of social change. Spaces that were historically shared by different social groups can also be at the mercy of a religious procession more boisterous than others, of new successful in-migrants, of a project for a dam or housing estate or of rising export prices for an agricultural product. These spaces, therefore, can very well fall into a pattern of turbulence in which social groups clash for control over territories and their resources. The growth and spectacular diversification of the available resources in India have heightened the division, locally accentuating the widening gulf between zones (states, districts, agglomerations, neighbourhoods, etc.) unevenly affected by the economic and social developments. These tensions have been superimposed on the historical map which reflects more the old regional equilibria founded on traditional institutions, and the land use system which was associated with them.

At the same time, the mechanisms of transformation have a homogenizing effect on the territories by giving rise to analogous and often simultaneous dynamics in formerly enclosed regions. The vectors of this homogenization are multiple: urbanization, migration, industrialization, mass media, epidemiological diffusion, etc. However, it is interesting to note that the particular contour of the propagation of social and economic change, which, for example, the growth of education in India delineates, does not illustrate only the progressive levelling of inter-regional variations under the effect of a central tendency. The regional advances and delays which cartography unambiguously indicates, are also manifest in the effects of opening up or resistance peculiar to each historical region and the force of opposition made by local institutions to the intrusion of certain vectors of "modernity".

The detailed survey of the interior limits of India is today progressing very rapidly, following a relative slumber linked to the thematic timidity of geographers and to a real underdevelopment of techniques in the treatment of spatial information. The range of available data has also grown, as data are being increasingly broken up on a smaller spatial level (on the level of district or smaller). With respect to several of the themes taken up by the authors in this collection, new studies are in the process of appearing and it would not be without interest to underscore examples of progress recorded in the production of an atlas of social geography, such as *A Social and Economic Atlas of India*, 1987, which makes use of data from 1981 by state and by district. At the same time, regional atlases have appeared, complementing the more systematic work of government organizations such as the National Survey or the Census of India, and undertaking a geographical re-reading of the assessed phenomena.

Government bodies, because of their pressing need for data to more closely follow the actions of development, have at times been able to play the role of a driving force in this endeavour of socio-demographic cartography. We shall, for example, cite the efforts of the 1981 Census to publish particularly rich atlases, combining an analysis of social data with that of the physical milieu.[2] It is to be noted in this regard that the Indian census, the cartographic talents of which are irregular, has undertaken to update its cartographic knowledge and is on the point of distributing, as these lines are written, new atlases, in colour, of the Indian districts.[3] The publications of the next census in 2000 will no doubt finally be accompanied by mapping at a level corresponding to the wealth of information collected. The *Panchayati Raj* will doubtlessly reinforce local needs for social and demographic information and could stimulate important developments in the years to come.[4]

At the initiative of geographers, notably at Jawaharlal Nehru University, different thematic atlases have also appeared in the field of the geography of population, such as that on tribal India (Raza and Ahmad 1990) which combines profuse statistics (unfortunately from 1971) and a considerable cartography with a very detailed spatial analysis of the tribal phenomenon in all regions of India. The cartographic exercise of de Golbéry and Chappuis reproduced in this collection, based on data from 1991, could encourage in the future the extension of the analysis made of tribal populations to the Dalit populations, which have been more adequately comprehended by the census since 1991, as well as to other minorities whose spatial concentration and segregation at different levels of analysis are very acute. The atlas

2. These atlases were published in the series Regional Divisions of India – A Cartographic Analysis. Occasional Papers, Census of India. 1989, New Delhi.

3. See Census Atlas 1991 – India, Census of India 1991, New Delhi, 1999. Population Atlas 1991 – India, Census of India 1991, New Delhi, 1999.

4. During the 1990s, Kerala initiated an ambitious project of statistical collection at the level of the panchayats on the occasion of campaigns for decentralized planning (Issac and Harilal, 1997). The yearbooks, prepared in Malayalam, often include different maps and statistics on a micro-local level and play an important role in terms of development programmes.

produced by the Anthropological Survey of India, certainly less detailed from the geographical point of view, presents very original data on the basis of surveys conducted among roughly 4 500 communities (castes, tribes, etc.) grouped according to state (Singh 1993). Also to be mentioned are a copious atlas devoted to child population (Raza and Nangia1 1986) and the linguistic and ethnic atlas of South Asia recently published in English, with the support of the French Institute, by Roland Breton (1997). These atlases, which represent a considerable amount of labour, would merit being brought up to date, for they are mainly based on superseded data (1961 and 1971, in the case of the two latter works), in order to accurately restore certain spatial logics recently at work.

The chapter on sex ratio belongs to a work which led to the very recent publication of the *Atlas of Men and Women*. This atlas is worthy of note, combining the statistical and documentary knowledge of gender discrimination in India from a geographical perspective in which these practices are anchored in the logic of regional social institutions. In effect, it continues an important current in research notably exemplified by the pioneering anthropological research of Miller (1981) on the vulnerability of women in Indian space, and the more recent work by Aggarwal (1994), who gives the socio-economic contours. There remain areas yet little explored with the cartographic tool, often because of the incompleteness of available information, as for example in the area of health[5]. The work included in this volume undertaken by two young geographers from Rouen gives an idea of the material with which one is involved. But, other themes linked with the pressure on natural milieus (forest, coast, marshland, etc.), the networks of traffic and communication (transport, tourism and pilgrimage, migration, Internet, etc.) or, again, spatial inequality in agricultural and industrial development, are without doubt destined to become promising areas for a renewal of geographical investigations in India. The wealth of information being accumulated today on the maps of India also awaits a synthesis by regional geography which would bring up-to-date the pioneering work conducted nearly twenty years ago by Sopher (1980).

The articles herewith presented initially appeared in the journal *Espace–Populations–Sociétés*, with the exception of the chapter by Jackie Assayag devoted to the study of the state Ministry Commission of Karnataka[6], which lies outside the theme of the space of Indian populations. We have grouped the articles, by way of convenience, in five sections centred on their primary subject (demography, health, town, etc.), but the reader will easily perceive the links between their different thematic echoes.

The first group of articles concerns the demographic "base", its unity, its singularity and, as one must immediately add, its diversity. If India was "on

5. These difficulties are, for example, illustrated by the recent collection of nearly 45 contributions devoted to the geography of health prepared on the occasion of a seminar in Baroda (De, 1998). These studies rest on a cartography which is both timid and terribly out-of-date.

6. "Politics of Number. State, Statistics and Minorities in India (Karnataka)".

the way to a billion" at the close of the last census (Premi 1991), it has in the meantime nearly reached that number, although this, as is customarily the case, would not happen without statistical controversy[7]. On the other hand, there is no doubt that the six billionth inhabitant, presumed to have been born in October 1999, had a greater probability of being born in India than anywhere else (notably greater than in Bosnia and Herzegovina, where the UN secretary chose to celebrate the birth). With a birth rate which is decreasing less rapidly than in China, India is in effect the country in the world which records the greatest number of annual births, and its population should reach that of its large northern neighbour in less than fifty years from now.

The character in the short story by Salman Rushdie[8], portraying an overly credulous youth who accepts to be sterilized in exchange for the promise of a transistor radio, which he will never receive, has become obsolete. This fable indeed illustrates the unanimous rejection of the gloomy drift of the 1970s (Pai Panandiker *et al.*, 1978), but in no way announces the transformations to come, or the "41 percent of the women from 30-34 years [...] sterilized, and 45 percent from 35-39 years". An era has thus passed and this country, as others, already begins to question itself as to the fate of its elderly population, the proportion of which will continue to increase at accelerated rates.[9] Christophe Z. Guilmoto traces the diffusion of this new behaviour in the infra-regional space. Beyond the nuances known to exist between north and south India, he identifies Malthusian pockets where – a paradox inconceivable until recently – the natural rate of increase, which is already very low in some districts, will soon be nil! These coastal or metropolitan areas on the periphery of to the Indian triangle, acting as centres of the diffusion of a new family ideal, are progressively encircling the focus of high fertility in the Gangetic region. Literate women can be considered as vectors of this change.

The next part of this collection considers the relations between town and countryside and the dynamics of differential development, which they illustrate. The rural zones, which benefited from the stimulus of the Green Revolution, have, however, experienced great diversification, local as a result of the development of non-agricultural activities, and external through the spatial mobility of the workforce.

Hélène Guetat-Bernard examines the context of the diversification of village activities, which lends numerous rural pockets the rhythm of industrial humming day and night. These occupations are only assessed with difficulty, being as they are anchored in an informal sector, by definition

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7. The international press circulated estimates (and alarmist commentaries) of the Worldwatch Institute in Washington which announced a figure of one billion in August 1999; the Indian Census Office counted less than 990 million at the same time. For regularly updated population estimates, see the demographic counter of the Census of India on the Internet (www.censusindia.net).

8. "The Free Radio" in Rushdie (1995).

9. Considerations on the ageing of the Indian population were recently enriched by a solid demographic study (Rajan et al. 1999) and the first wide-ranging anthropological study (Cohen 1998).

inadequately known and fluctuating, but they concern a growing number of rural people. The latter, however, are still confined to a fifth of the active population in the countryside, an indication of the low level of development in India. By way of the dynamic arising of the green revolution, the sector can be analysed as a survival solution for the impoverished rural inhabitants, unable to intensify their agricultural production, and as an illustration of village initiatives, which supplant the inertia of small towns in Karnataka.

Elsewhere in India, Eric Leclerc leads us to the "roots of urbanization". He recalls that if the proportion of small towns would appear to stagnate, this is quite broadly to be explained by the very growth through which they change categories over the course of censuses. Unlike the case in Karnataka described by Hélène Guetat, it seems that in the district studied in Andhra Pradesh, the new administrative responsibilities (Mandal reforms) conferred on small market towns or large villages would have enhanced their capacity to attract people over an area whose radius corresponds to a distance "of a half-day's round trip, by foot or on a cycle".

Frédéric Landy and Jean-Luc Racine present in their text what could well be termed the factors of population retention in the rural zones, which still contain three quarters of the total population. In fact, the rural exodus only proceeds slowly. The largest migrations, sometimes stimulated by agricultural modernization, involve essentially intra-rural movements that take place through collective and temporary channels. Of course, many peregrinations draw "the least poor of the poor" towards the towns, but they do not reside there, or only for a short time. When they do resolve to remain there, it is a result of family strategy, organized from the village, and the duration is planned. The constraint of distance, the factor of "distance decay" cherished in gravity models employed by geographers, seems to be particularly strong in India because of the multiple social and cultural discontinuities encountered by the migrants underway. It might be asked whether the sociological thickness of the Indian humus is the ground of these multiple "friction effects" which slow down exchange and burden it with debt, and which are translated as much by the resistance to spatial mobility as by spatial segregation?

The chapters in the following section are quite logically concerned with the urban world and its quarter of a billion inhabitants at the end of the century. The approaches are again varied, ranging from an overall statistical analysis to social geography, by way of a monograph of the most dynamic of the large cities in the subcontinent.

From a statistical perspective and with a striking cartographic rendering, Graham Chapman and Pushpa Pathak restore the role of large cities to their regional context. In this way, the rural-urban continuum is revealed; here, it seems more appropriate to probe the entire urban systems than consider the cities in isolation. The authors, therefore, contrast Delhi and Mumbai with Calcutta and Chennai (Madras), the hinterland of which is rural. Based on calculations derived from a correlation matrix, certain well-established rural/urban nuances diminish to the advantage of regional features, notably as regards literacy of more than 6 years or the sex ratio.

After an "externalist" approach, Odette Louiset-Vaguet examines from the interior how the cities of India possess some characteristics of the universal urban and of the developing world. Then, taking a geo-anthropological approach, she examines the cultural specificities of a still predominantly rural Hindu society, which is also inventing itself in the rapid growth of peripheral areas. Without sublimating the particularisms cherished in Orientalist tradition, she nonetheless reflects on the original combination of the forms of socio-religious segregation with economic factors in spatial organization. The diverse occupations, to which reference is made, as much among the middle classes as among residents of shantytowns, make it possible to show a nuanced reality. Notwithstanding shifting configurations, the relation of Hindus to urban life preserves traces of aversions and hierarchies of a religious order, which remain a pivotal reference in the perception of social space.

Veronique Dupont, synthesizing diverse research operations she conducted in the Indian capital, which holds records in growth (1.4 million inhabitants in 1951, and certainly 10 million today), accounts for the forms taken by the process of "rurbanization". Other than the spreading out of families in the suburban periphery, the originality of the article lies in the consideration of the numerous rural migrants living on the pavements. Constituting one percent of the total population, that is, representing one lakh persons, they find a living space, but no abode, near the very dynamic historical centre of the city. Through their networks, these rurbans only foresee dwelling temporarily in the city, namely for the time required to ensure improved living conditions for the family which has remained in the village. However, this temporary sojourn often continues for several years. This city has indeed attempted to plan its growth, an exceptional occurrence, but the six largest peripheral towns, although they have accommodated a significant part of the growth too near to Delhi, have at the same time encouraged the number of commuters. Noida, developed in a voluntarist manner since the 1970s, would be a good example of success, having accommodated nearly 150,000 inhabitants and more than 4,000 factories. However, this process occurred to the detriment of villagers abruptly deprived of their lands who have become perforce urban dwellers.

The following section continues the investigation of the urban situation, employing tools from the geography of health in the exploration of two cities. Emmanuel Eliot studies the spread of the AIDS virus in Mumbai, a city which plays a focal part in the development of the pandemic in India. Notwithstanding the problems concerning data availability, and these are numerous for whomever would venture into epidemics which are as inadequately understood as they are denied, the author is able to conclude a certain permanence of pathogenic areas over the ages. The places which British health officers earlier described as having intolerable health conditions, that is, the central ward, in which the greatest poverty and the main quarters for prostitution are still concentrated today, are the same areas where the highest number of HIV-positive persons are recorded. Worse, and a sign of the pandemic, the number of tuberculosis deaths has doubled there

in less than 10 years. There is no doubt that the fluctuating populations at the heart of cities such as described in this volume (by Véronique Dupont regarding Delhi) would be active vectors of the spread of the disease to the rural zones.

Faced with such difficulties, which only add to an already very disquieting health picture, one is only too well aware of the weaknesses of the infrastructures in the public health sector. On the other hand, Florence Rihouey describes the striking emergence of new networks of private care in Hyderabad, the fifth largest city in India and henceforth a beacon of the revolution of new information technologies. These networks result from the curative demands of the upper and middle classes and above all, from the economic liberalization of the 1990s which has made the import of better equipment possible. This very lucrative sector is proliferating, an outcome of strategies of the dominant castes who have sized up the disengagement of the state. Recourse to these luxurious and costly hospitals remains, of course, locally limited. But the globalization of capital intended for investment in the health "market" is already beginning to be noticeable What is more, the flow of international clients has begun to take form, as patients of the diaspora are determined to benefit from Indian prices that are very low in comparison with the rich countries without networks of social protection or of health.

Concluding this volume, the last section of articles turns to the question of the division of space among majority and minority groups. Peter Atkins and his colleagues at Durham University and JNU explore the geography of the sex ratio, parallel to the cartographic work they have included in their recent atlas (Raju *et al.* 1999). For, to reach the world-wide average, India "lacks" some 32 million women, and this imbalance, indicating the persistence of their poor condition, continues to grow; the worst result was recorded in 1991, at the time of the last census[10]. Here again, precise localization makes it possible to discern opposed attitudes, for example, among the populations of the large Gangetic plain and the hill dwellers, above all tribes known for their egalitarianism between the sexes. This shows, moreover, the weakness of the relation between the level of wealth and the attention accorded to young girls. In the Punjab, the richest state in India, it is in the most well off, land-owning, families that the girls are clearly fed less than boys are. One thus recognizes that simplistic explications according to which the Muslims would bear the burden of the poor condition of women in north India are invalid. Few in number in the Punjab, where the sex ratio is all the same unbalanced the Muslims form a significant group in Kerala where, on the contrary, the ratios between the sexes balance out. Even though the situation always seems to be less severe in towns, the slow improvement in the living conditions of disadvantaged strata has led them the emulate the attitudes of more patriarchal dominant groups. Thus, paradoxically, the authors expect a worsening of the imbalance as economic development progresses, an expectation confirmed by recent speculation (Mayer 1999).

10. See also the recent work by Agnihotri (1999).

The second chapter in the last section concerns populations which are numerically limited in India, but which are altogether essential from a geo-political point of view; namely, the refugees who are this time studied in all of South Asia, the borders of which are more porous than elsewhere. Gilles Boquérat traces the history of the large movements of refugees which have accompanied regional events since Partition, obliterating the mark of great poverty of entire regions and in particular of Calcutta, where one fifth of the actual population of West Bengal consists of displaced persons from East Bengal. Wars, such as in Sri Lanka, the atrocities committed here against the Buddhist Chakmas or elsewhere against the Tibetans, the persecutions of Bhutanese of Nepali origin, all give rise to international movements of refugees.

Concluding this volume, Luc de Golbéry and Anne Chappuis present, based on district data, a first atlas regarding the largest disadvantaged minorities, the Dalits and the tribals. It should be noted that the administrative character and the definition of these groups, which can of course undergo significant changes in the course of censuses, can be directly read in the maps, as the authors remark in the case of the *Lambadis*[11]. Among the other results of this collection of maps, one will note the astonishing opposition of localization between two communities, the one practically inscribed in the negative of the other. Likewise, one notes from the point of view of literacy levels, the asymmetry between the two coasts, whereby the advantage clearly lies with the western coastal strip.

A fascinating aspect in the publication of a work such as this is that it gives an impression of the researchers' perceptions at a given time. It is well known that this perception is filtered by representations, by effects of method, from which it is in vain to want to entirely escape. It is easy today to be amused at the testimonies of Megasthenes, who confused legendary personages from the sacred texts of Hinduism with living, real, Indians. He thus spread over this country for centuries ideas that were as marvellous as they were strange (Jain 1972). As for our work with its very modest ambitions, we are inclined to protect ourselves from such failings by revealing our studies in a language accessible to our Indian colleagues.

Be that as it may, we should not delude ourselves, for the tools of the human sciences, as scientific as they purport to be, are no guarantee against errors of interpretation. As evidence of this, we can refer to texts which are not so ancient as that of Megasthenes in which the fate of the peninsula appeared necessarily to be doomed to famines or other apocalypses linked to an alleged over-population. Quite extraordinarily, the numerical plethora of this frequently wounded civilization does not impede its development. Its population is its wealth; its number a choice of society.

These remarks do not prevent us from assuming a viewpoint, even should one, by wanting to judge social mutation "in vivo", run the risk of freezing a

11. A cartographic analysis of the growth of the Dalit population thus mentions the effect of the inclusion of Neo-Buddhists in the Scheduled Castes as the cause of the apparently sudden statistical rise of Dalits in Maharashtra. See Gosal (1997).

process which is in progress and thus of mistaking oneself. For example, in the health domain, Rihouey, like Baru in his recent book (1998), agrees in deploring the rise in strength of the privatisation of health-care structures which would result in a reinforcement of the inequality of access to medical attention. This danger can be clearly seen, but who can claim that the innumerable clinics, sometimes organized on a charitable basis, do not respond to a real demand? Must the state organize everything? The originality of financial arrangements and the subtlety of the role of castes show an affirmed endogenous character. The bio-medical health system, of exogenous nature, is seen to be locally organized according to Indian modalities, even though globally its process of privatisation includes it in a context of globalization (Vaguet, forthcoming).

The researchers brought together in this volume would readily agree on the modesty which these essays are bound to evidence, so rich and embedded is the content of Indian space. The articles we present here constitute "just a few images" of an immense and complex world, perhaps not a "just image"[12]. Nevertheless, our readers henceforth have more material to form, in their turn, new images of the Indian prism and of its transitional geography.

12 Comment freely inspired by the considerations of Pierre Bourdieu (1996) on television.

PART I

DEMOGRAPHIC TRENDS

1

Demographic Transition in India

Jacques VÉRON

As a country long characterized by persistence of a high fertility rate despite very early adoption of a population policy (the first birth control programmes date from 1952), India since the 1970s has seen a marked reduction in the average number of children that a woman brings into the world. In 1990, the total fertility rate was 3.4 children per woman, which puts India only slightly above the world average.

The decline in fertility is generalized, but its dimension varies in different states: even today, there are very great regional differences. In Goa or Kerala, the fertility model is that of the developed nations, with an average of two or less children per woman, while in Uttar Pradesh the rate is still almost five.

This drop in fertility accompanies a marked lowering of mortality, which however does not seem to be the sole explanation for it, contrary to the theoretical postulates of the theory of demographic transition in its strictest form. Improved education for women, a good indicator of their status, explains the reduction in fertility better than the lower mortality rate.

It is difficult to discern direct effects of population policies upon birth and fertility rates, but regular revision of the targets originally fixed, in view of observed changes, suggests a limited effectiveness. However it is still difficult to assess the significance of social change and availability of means of contraception (or the influence of messages about the desirability of birth control disseminated by the media) as a cause of smaller families.

A late but definite drop in fertility

The Indian fertility rate[1] estimated at almost 6 children per woman at the end of the last century (5.76 in 1881-1891), continued to fluctuate around this figure right up to the 1960s (Table 1.1 and Figure 1.1). There even seems to have been a slight increase in fertility over this period, but considering the quality of the data it is difficult to interpret this apparent increase.[2]

Table 1.1. Changes in fertility over the last century

Year	Total fertility rate
1881-1891	5.8
1891-1901	5.7
1901-1911	5.7
1911-1921	5.7
1921-1931	5.8
1931-1941	5.9
1941-1951	5.9
1951-1961	6.1
1961-1971	5.9
1971	5.2
1972	5.2
1973	4.9
1974	4.9
1975	4.9
1976	4.4
1977	4.1
1978	4.4
1979	4.4
1980	4.4
1981	4.5
1982	4.5
1983	4.5
1984	4.5
1985	4.3
1986	4.2
1987	4.1
1988	4.0
1989	3.9
1990	3.8
1991	3.6
1992	3.6
1993	3.5
1994	3.5
1995	3.5
1996	3.4

Source: SRS and Mari Bhat's estimates.

Family size begins to show substantial reductions towards the end of the 1960s and the beginning of the 1970s. In 1970 Indian fertility stood at around 5 children per woman, 15 years later it was close to 4, and the latest data —those of the SRS— show a rate of 3.4 in 1996.

Although the drop in fertility is general, the situation remains quite varied, as is shown by comparison of the total fertility rates of the different states of the Indian Union (Table 1.2 and Figure 1.2). Fertility is lowest in Goa (1.9 children per woman) and highest in Uttar Pradesh (4.82 children per woman).

In general, fertility is lower in the south, with levels significantly below 3 children per woman in 1990-1992 in the four states of Andhra Pradesh, Karnataka, Kerala and Tamil Nadu. The highest fertility rates are found in one northern state (Haryana: 3.99 children per woman), two central ones (Madhya Pradesh: 3.90 and Uttar Pradesh: 4.82), one eastern one (Bihar: 4) and one north-eastern state (Arunachal Pradesh: 4.25).

The importance of the present regional contrasts should not lead us to forget that everywhere, even in Bihar or Uttar Pradesh, fertility has dropped significantly. Thus between

1. Fertility estimates are taken from the Sample Registration System (SRS). For the period 1990-1992 they are supplemented with those of the National Family and Health Survey (NFHS), which supplies a wealth of information, both current and retrospective.
2. The figures quoted by Agartala (1967) for the 1950s and 1960s give fertility estimates of more than six or even seven children per woman in both urban and rural areas.

1972 and 1990-92, the average number of children per woman dropped by more than 30 per cent in Uttar Pradesh (from 7.3 children per woman to 4.8: a decrease of 2.5 children per woman). During this period a number of states have experienced a lessening of their current fertility of 40-50 per cent. In Gujarat, the drop reached 52 per cent in 20 years, and in Kerala, it was more than 56 per cent (while the fertility in this state was already relatively low in 1972). It should be noted that Kerala remains an outstanding case: in 1972 its fertility rate was equal to that of Karnataka, while today it is 0.85 child per woman lower than that of Karnataka.

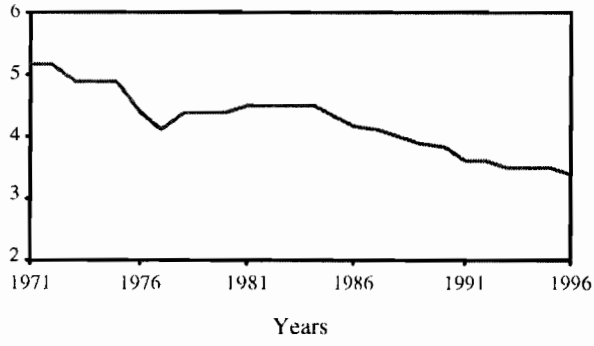

Figure 1.1: Changes in Indian fertility

Women still give birth at a very early age

An examination of fertility curves by age, based on data from the *Sample Registration System* and the *National Family and Health Survey* allows us to evaluate fertility by age group, and changes in fertility by age group over time (Table 1.3 and Figure 1.2). Note that the estimates of fertility rates by age group supplied for the period 1990-92 by the *Sample Registration System* and the *National Family and Health Survey* are consistent as a whole, but diverge very considerably for the age group 15-19 years. The reason seems to be a difference in definition of the reference population, which is *de jure* in the case of SRS but *de facto* in the case of the NFHS. If, for example, the young women return to their parents' home to give birth to their first child, birth of a normal resident may not be registered by the SRS.

Alterations in fertility by age group have taken place mainly in the higher age groups: the drop in fertility of the last twenty years is essentially a drop in the marital fertility convex in 1972, the curve of fertility by age group then becomes concave, which is generally considered indicative of a more widespread use of contraceptives.

However, use of contraception is thought not to be the only factor involved. Relatively low fertility rates in the higher age groups are attributed by NFHS officials to various reasons: a high proportion of women who have

been sterilized or passed the menopause[3] and cessation of sexual relations between a married couple when a daughter reaches puberty, one of their child marries, or when one of their children produces a child (International Institute for Population Sciences, 1995).

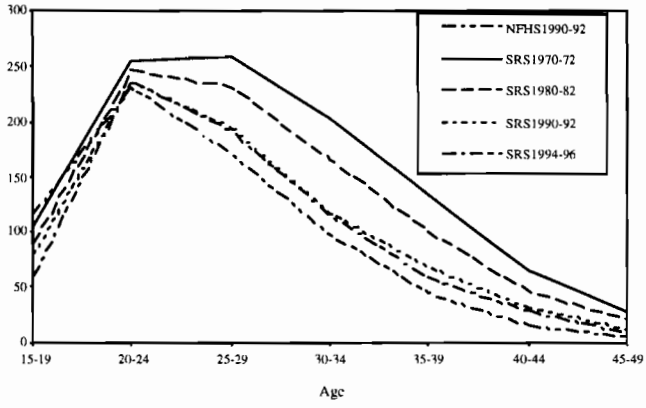

Figure 1.2: Variation in fertility by age group

Fertility schedules seem to differ widely within India. Very youthful fertility is particularly marked in Madhya Pradesh, Andhra Pradesh, Haryana and Maharashtra, where the fertility rate among the 15-19 is more than 140 per thousand, whereas in Mizoram, Manipur, Goa and Kerala it is below 50 per thousand.

The other traditional component in reduced fertility —higher age at marriage— does not seem to play a great role, since fertility rates in younger age groups remain high. Thus in India fertility remains an early phenomenon, because of the persistence of significant fertility amongst young age groups (absolute effect) and decreasing fertility amongst older ones (relative effect).

Early fertility does not necessarily signify large families: in Madhya Pradesh, the fertility rate among the 15-19 is markedly higher than in Uttar Pradesh (153 per thousand as against 113 per thousand), but the total fertility rate is much lower (3.90 as against 4.82). In Maharashtra a woman's child-bearing begins early and ends early: the fertility rate among the 15-19 is as high as in Uttar Pradesh, but the number of children per woman is almost 2 children less.

3. According to NFHS figures the proportion of menopausal women —self-defined as such, or who have had no period for at least six months— varies by age-group as follows: 3 per cent at 30-34 years, 7 per cent at 35-39 years, 17 per cent at 40-41 years, 25 per cent at 42-43 years, 38 per cent at 44-45 years, 56 per cent at 46-47 years, and 71 per cent at 48-49 years (International Institute for Population Sciences, 1995).

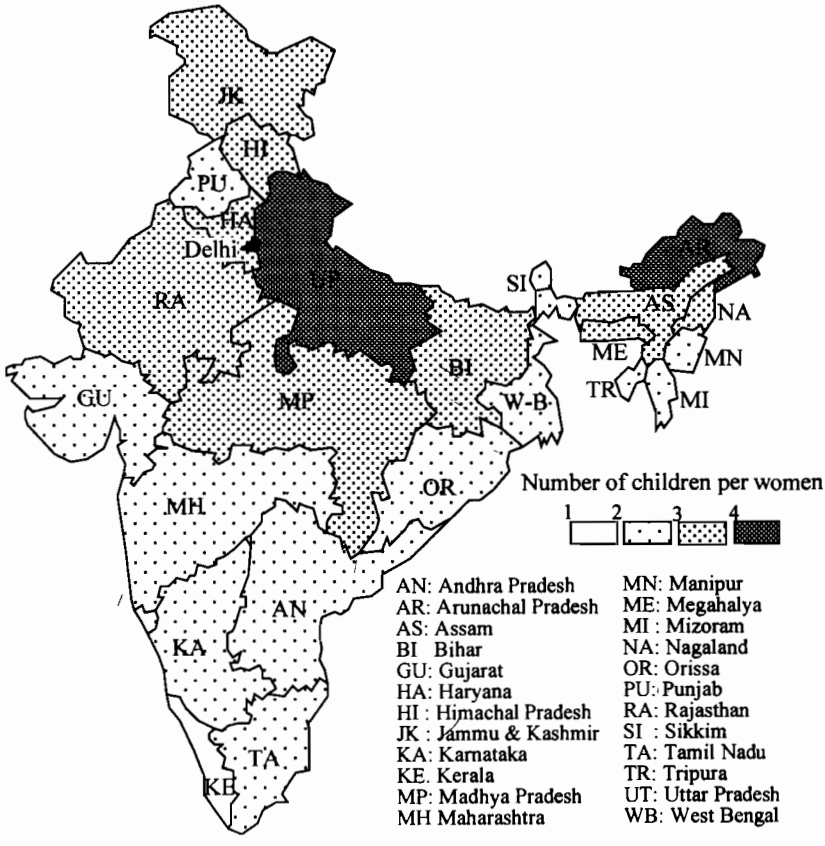

Figure 1.3: Total fertility rates, 1990-92, by state (Source: NFHS)

To evaluate trends of decreasing fertility in conformity with the paradigm of demographic transition, it is interesting to compare the change in the number of children per woman with that in mortality, since this too has undergone a marked decrease.

Mortality and fertility: a simultaneous decrease, without much interaction

All mortality indicators have shown a decrease in India over the course of the last century (Table 1.4). From 1911 to 1991, life expectancy at birth rose from 23 to 57 years (Figure 1.4), which however still leaves India amongst the countries where mortality remains high. Mortality rates have decreased by more than half in 90 years, yet the rate of infant mortality in 1991 remain 96 per thousand (16 times that in France, where the infant mortality rate in 1994 was less than 6 per thousand).

Table 1.2: Total fertility rates in the Indian states (number of children per woman)

state	1972	1990-1992
Andhra Pradesh	4.7	2.59
Arunachal Pradesh	-	4.25
Assam	5.8	3.53
Bihar	5.2	4.00
Delhi	-	3.02
Goa	-	1.90
Gujarat	6.2	2.99
Haryana	7.4	3.99
Himachal Pradesh	5.5	2.97
Jammu and Kashmir	-	3.13
Karnataka	4.6	2.85
Kerala	4.6	2.00
Madhya Pradesh	7.0	3.90
Manipur	-	2.76
Maharashtra	4.9	2.86
Meghalaya	-	3.73
Mizoram	-	2.30
Nagaland	-	3.26
Orissa	5.0	2.92
Punjab	5.7	2.92
Rajasthan	7.0	3.63
Tamil Nadu	4.3	2.48
Tripura	-	2.67
Uttar Pradesh	7.3	4.82
West Bengal	-	2.92

Source: Srinivasan (1995) and the International Institute for Population Sciences (1995).

The figures differ greatly from state to state, for in 1990-91 the infant mortality rate ranged between 15 per thousand in Mizoram and 112 per thousand in Orissa (International Institute for Population Sciences, 1995). The rate in Orissa is confirmed by findings from other sources (SRS). On the other hand the probability of dying during the first year of life seems "abnormally" low in Mizoram, as also in Nagaland (infant mortality rate, 17 per thousand) if we compare their figures with those in Goa (32 per thousand) and Kerala (24 per thousand), which are known to be very advanced on the plane of demographic change.

Do the actual disparities in infant mortality from state to state explain the differences in fertility? Looked at "simultaneously" (using current data), the relationship between mortality and fertility is less than might be expected (Figure 1.5). According to Srinivasan (1995), who has undertaken regression analyses of figures from the end of the 1980s, infant mortality explains only 60 per cent of the fertility —that is, differences in infant mortality from state to state do not systematically correspond with differences in fertility, following the same ranking. Thus in Orissa, where infant mortality is much higher than in Haryana, fertility is significantly lower. Fertility rates in Assam and Punjab are comparable, while infant mortality rates are very different (the rate in Assam is 30 points higher than that of the Punjab).

Table 1.3: Age specific fertility rates (per 1000 women)

Age group	SRS 1970-72	SRS 1994-82	SRS 1980-82	SRS 1990-92	NFHS 1990-92	SRS 1996
15-19 years	103		89	78	116	55
20-24 years	254		246	235	231	229
25-29 years	259		231	193	170	188
30-34 years	203		165	117	97	112
35-39 years	134		100	68	44	57
40-44 years	63		45	31	15	28
45-49 years	27		21	12	5	10

Source: SRS series and IIPS (1995)

According to the theory of demographic transition in its strict form, decrease in birth rate/fertility rate is seen as a response to a decrease in mortality. Decreased mortality (overall or infant mortality) is supposed to "explain" the decrease in fertility. Changes in the figures for infant mortality and fertility over the course of the century do show a decrease in mortality preceding that in fertility, but the figures are not sufficient to allow satisfactory measurement of any correlation. On the other hand, correlation calculation can be carried out in more acceptable conditions, based on the figures by state (since the information available is more complete).

Table 1.4: Changes in mortality over the last hundred years

Year	Crude mortality rate	Life expectancy at birth	Infant mortality rate
1911	42.6	22.9	222
1921	47.2	20.0	212
1931	36.3	26.8	176
1941	31.2	31.8	168
1951	27.4	32.1	148
1961	22.8	41.3	139
1971	18.9	45.6	129
1981	15.0	50.5	129
1991	11.1	57.3	96

Source: Estimates quoted by Srinivasan (1995)

This does not validate the theory of demographic transition in its strict form. However it must be recalled that for testing the theory a cohort analysis, over time, is more suitable than a cross section analysis, and that in addition it is important to allow for some time-gap between changes in mortality and changes in fertility. The enlarged theory of demographic transition explicitly integrates social change. Therefore, it is worth investigating the influence of other variables besides mortality upon changes in fertility— especially the education of women.

Women's education, an essential variable for change

In India there are marked disparities not only from a geographical standpoint: significant variations also appear according to place of residence, level of education, and religion (Table 1.5).

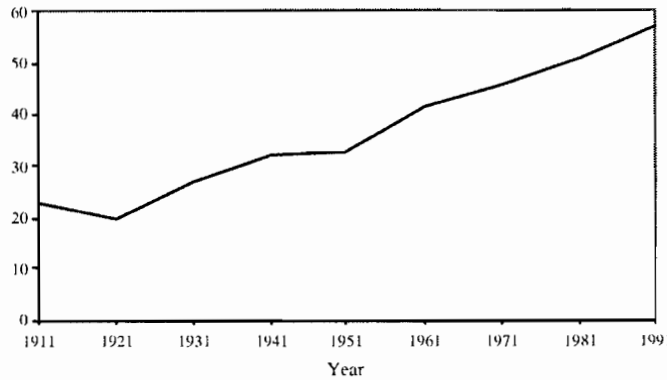

Figure 1.4: Life expectancy at birth

On an average, rural women give birth to one child more than urban women do. The fertility of women without any education is almost two children more than that of women who have attended at least high school. Muslim women have, on average, one more child than Hindu women and two more than Sikh women. Christian fertility lies between that of Sikhs and Hindus.

Table 1.5: Fertility differentials according to place of residence, level of education and religion of women (total fertility rate in 1992-93)

Criterion	Number of children per woman
Place of residence	
urban	2.70
rural	3.67
Education	
illiterate	4.03
literate < middle complete	3.01
middle school complete	2.49
high school and above	2.15
Religion	
Hindu	3.30
Muslim	4.41
Christian	2.87
Sikh	2.43
Other	2.77

Source: International Institute for Population Sciences, 1995

Do Muslim women have more children because they are Muslim (indicating a strong religious influence), or because they are less often literate than women from other communities (influence of education)? Cross comparison of religion and educational level reveals a persistence of both effects (Table 1.6). A Muslim woman will give birth to 5 children if she has had no education, while a Sikh woman in the same situation will give birth to only 3.4 (on the other hand in this case fertility amongst Christians is lower than amongst Sikhs). Moreover, whatever her level of education, a Muslim woman has a higher fertility rate than that of a woman from any other religious background.

Table 1.6: Fertility by religion and educational level of women (number of children per woman in 1992-93)

Education Religion	Illiterate	Literate<Middle complete	Middle school complete	High school and above
Hindu	3.93	2.93	2.45	2.07
Muslim	5.03	3.61	3.05	2.97
Christian	3.30	2.86	2.50	2.79
Sikh	3.43	2.80	2.06	1.68
Others	3.57	2.59	2.59	2.14
Total	4.03	3.01	2.49	2.15

Source. International Institute for Population Sciences, 1995.

Thus the influence of religion is not an effect of the influence of education; but women sharing the same religious background show fertility rates that very clearly vary according to their level of education: the disparity between the extremes (without education, and level corresponding to at least high school) is about 2 children per woman amongst Hindus and Muslims.

Education is a fundamental variable of demographic change, in India as elsewhere. It gives a better explanation than mortality for the differences in fertility between states: 72 per cent of the variance in the average number of children per woman at the end of the 1980s is explainable by literacy rates, as against 60 per cent by infant mortality rates (Srinivasan, 1995).

The figures for 1990-92 confirm an inverse relation between fertility and women's education, but there is a not inconsiderable scattering around the average values: within a given level of women's education family size may vary by as much as one child (Figure 1.6).

A study carried out at district level in India, based on data from the 1981 Census, showed that the influence of education on fertility could be broken down into a direct and an indirect effect (Sharma and Retherford, 1990). The higher the women's literacy level, the less children they bore (direct effect). The indirect effect worked through a higher age at marriage, and a decreased infant mortality rate. This study demonstrated that when the variable of place of residence (urban or rural) was added, the model did not gain in explanatory value. No independent "urbanization" effect existed, apart from education, age at marriage or infant mortality.

In Kerala, where fertility is very low today, urban and rural fertility rates are little different (1.8 children per woman in urban areas in 1990-92, as

against 2.1 in rural areas), and fertility curves by age group show similar forms. Fertility varies little according to the women's educational level, but the total fertility rate amongst Muslim women remains more than one child per woman higher than that of Hindus and Christians. The low fertility of Kerala is however linked with a low rate of urbanization (urban dwellers, 28 per cent of the total population) and a very high level of women's education (proportion of female literates, 84 per cent).

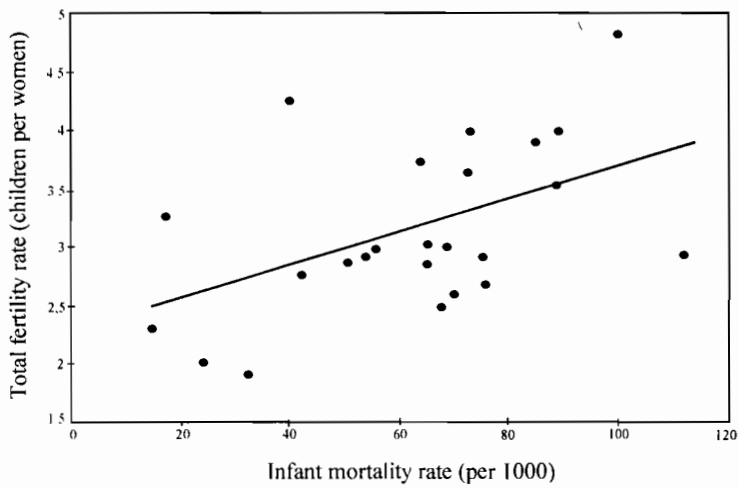

Figure 1.5: Fertility and infant mortality in 1992-93, by state (NFHS)

In developing countries, women's education is a distinguishing variable, since the attitudes and expectations of educated women differ from those of illiterates in many respects: marital behaviour, freedom to decide the number and spacing of births, access to contraceptives, cost of pregnancy, etc. (Cochrane, 1988). More generally, the educational level of women is an indication of their status. This means that its influence on behaviour cannot be reduced to purely mechanical effects.

Since India was the first country in the world to adopt a population policy, it is appropriate to inquire, in the final analysis, about the role played by birth control programmes upon observed fertility and modes of contraception.

Birth control by female sterilization

Fertility correlates very closely with contraceptive practices. In India, the prevalence of contraceptives remains quite weak, since only 41 per cent of women between 13 and 49 years use any method of contraception. By taking age into account, we can gain a more detailed evaluation of behaviour. Thus, it seems that in the age group between 30 and 44 years, more than half of all Indian women practice some form of contraception. In fact, women of this

age limit their fertility by mass recourse to sterilization.[4] 41 per cent of all women aged 30 to 34 have undergone sterilization, and 45 per cent of those aged 35 to 39. Then the proportion of sterilized women decreases (40 per cent at 40-44 years, and 31 per cent at 45-49 years) which can probably be explained by a cohort effect superimposed upon an age effect. Male sterilization is far less widespread than female sterilization. It reaches its peak among in couples where the wife is between 45 and 49: 11 per cent of men married to women in this age group have been sterilized. Taking all age groups together, female sterilization is thus by far the most common method of limiting offspring (it involves 27 per cent of all couples practising contraception —who constitute 41 per cent of the total number of couples). Second in order of importance come traditional methods (4.3 per cent of these couples), and third comes male sterilization (3.4 per cent).

How far is increased use of contraception, and above all reduced fertility, the result of the population policies successively introduced in India over the past forty years? The first five-year Plan (1951-1956) presented to Parliament in 1952, made reference to "family limitation and population control." It made provision, amongst other things, for identification of the causes of rapid demographic growth, and the discovery of techniques enabling easy dissemination of family planning means (Srinivasan, 1995). The third Plan (1961-66) set the objective of making small families the social norm, through education and the involvement of opinion leaders. Amongst the objectives of the eighth Plan (1992-97), containing population increase is mentioned yet again.

An evaluation of the effectiveness of population control programmes can be made on the basis of an analysis of the targets in terms of numbers of births set by the population policies under the various Plans. The target of a birth rate of 25 per thousand by 1972, set in 1962, was increased in 1969 to 32 per thousand (for the period 1975-85). The aim of 25 per thousand by 1984, set in 1974, was reconsidered in the sixth Plan (1985-90) and replaced by a target birth-rate of 29 per thousand for around 1990. The target of the most recent Plan is a rate of around 26 per thousand for 1996-97, and 22 per thousand by 2006-07.

However, the fact that targets in terms of birth rate have had to be regularly revised, does not prove that the population programmes have had no effect. It is difficult to reach an exact assessment, but criticism of these policies has been directed mainly at the organization of family planning, which has been handled in a very uniform manner, and at the too great place given to sterilization, thus giving preference to a total prevention of births, rather than to lowering the number of births at an early stage in fertile life (since Indian women give birth mostly at a young age).

4. According to the NHFS study, 82 per cent of the women who resort to sterilization have never used any other method of contraception beforehand.

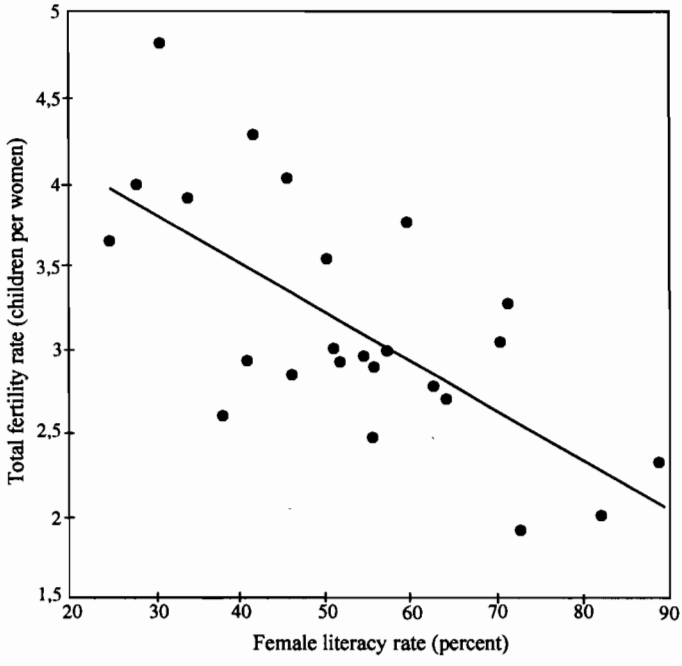

Figure 1.6: Fertility and women's education in 1992-93 by state (NFHS)

Demographic transition is indeed taking place in India, but mortality remains high, and fertility has decreased slowly over the last 20 years. Regional diversity remains extremely high, for some states have only recently started the transition —in terms of a move towards low fertility— (Uttar Pradesh, Arunachal Pradesh, Bihar) while others have already achieved it or are on the way to doing so (Kerala, Mizoram, Tamil Nadu).

A rise in the status of women, as reflected by literacy rates, largely explains fertility decline. This goes along with increasing use of contraceptives, which has however not yet reached very high levels in India. Birth control programmes do not seem to have taken sufficiently into account the geographical, social and religious diversity existing in the country.

Since fertility is decreasing in the Indian Union far less rapidly than in China, it is not surprising that present projections show India as the nation with the highest population in the world by 2050.

2

The Geography of Fertility in India (1981-1991)[1]

Christophe Z. GUILMOTO

Fertility decline as social innovation

The decline in fertility began more than twenty-five years ago in India and since then has had a considerable impetus. In the initial period, the effect of this decline on the birth rate was limited to offsetting a parallel decline in mortality, and the resultant growth rate remained stable.[2] Since the late 1980s, the birth rate has been diminishing more rapidly than the rate of mortality and the theoretical natural growth of the Indian population, that is, potential growth in the absence of migration, has begun to significantly decrease, to the extent of being reduced to zero in some areas of the country. This is without doubt a matter of an historical stage in the evolution of India, parallel to the more general movement to be observed in Asia.[3]

From the demographic point of view, fertility is the consequence of different parameters of a socio-demographic nature, among which are marital life, recourse to contraception and abortion, couple fecundity and intra-uterine mortality. Only the first two factors (or "intermediate variables") in this list play a significant role regarding the fertility level, and contraceptive practice is, moreover, the indicator most closely associated

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1. This paper is part of an on-going project on fertility decline in south India, with support from the French Institute, the Research Institute for Development (IRD) and the Wellcome Trust.

2. In this paper, we distinguish crude birth rates (births per population) from more precise fertility rates computed as average number of children per woman. The measurement of birth rates is affected by other factors such as the age- and sex-distribution of the population.

3. See Véron in this volume. On demographic transition in India and in Asia, see Srinivasan (1995), Leete (1993), Martine (1998). Fertility decline may have started earlier in some areas. See Das Gupta (1995).

with fertility in countries where the latter has already decreased. In India, the government began in the 1970s to initiate important policies pertaining to birth control, favouring the availability of contraceptive methods (female and male sterilization, IUD, condom, etc.), as well as the propagation of a new ideology of the family. To understand the choices regarding reproductive behaviour, it is, however, necessary to take into consideration a complex set of factors, ranging from the economic considerations of households regarding the advantages of few children (demand factors), by way of the system of norms and ideals relating to fertility, to the actual availability of contraceptive methods (supply factors).[4]

Adopting a sociological perspective, the decline in Indian fertility is seen to be among the innovation phenomena that are transforming social customs. This takes place according to diffusion mechanisms, the process of which is undergoing a number of temporal and spatial irregularities. The almost irreversible character of the declining evolution of fertility imparts to it a progressive impetus, both geographical and social, within a definite space characterized by the occurrence of diffusion. One will thus be able to identify the original core areas of diffusion, then the line of progress which innovation follows until the areas have been exhausted. The fertility level will thus be equivalent to the proportion of those who are observed to adopt innovations, with an initial pioneer phase, followed by a longer phase during which the area of contact broadens, before returning to a stable state subsequent to saturation.

The analysis in terms of diffusion complements the more common interpretations of the decline in fertility, which emphasize structural factors characteristic of social and economic changes.[5] One knows, in fact, the influence of "modernization" on fertility, corresponding, for instance, to urbanization, industrialization and, above all, to progress in education. However, it today appears more clearly that, independently of structural changes on a macro level, the decline in fertility typically proceeds by contagion, as the spatial diffusion of new attitudes and behaviour, for which any form of proximity, spatial or social, is an important factor of impetus. Conversely, social, cultural or geographical isolation, that is, the low density of exchanges outside the reference group, constitutes one of the first barriers to the spreading of innovations, imposing on them a considerable number of boundaries or stages to be crossed.[6]

The strong heterogeneity of the Indian environment, notably in its geographic and social dimensions, suggests as a consequence that the introduction of new ideas or behaviour cannot take place in a uniform manner according to milieu and that, subsequently, the diffusion of innovations will initially generate new forms of social differentiation. This is

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4. On fertility, see the chapters by Willis and McNicoll in Kiessling and Landberg (1994). For the comparison of different settings of fertility decline, see: Egerö and Hammarskjöld, (1994) and Martine *et al.* (1998).

5. For very distinct analyses of the role played by diffusion processes in fertility decline, see Cleland and Wilson (1987) and Friedlander *et al.* (1991).

6. About diffusion mechanisms, see for example Rogers (1995) and Saint-Julien (1992).

precisely the lesson to be derived from a geographical approach to fertility decline in India. Reproductive behaviour, in changing, creates new inter-regional disparities which represent as much the inherited historical and cultural diversity, as the disequilibria to come. The object of this article is precisely to explore this new diversity on the basis of various maps and statistics pertaining to fertility, while considering the lessons derived therefrom for Indian cultural geography. The progressive and irregular penetration of Malthusian behaviour in the country reflects certain dimensions of its spatial organization; these in turn refer to family models (kinship structures, the position of women, etc.) which vary according to each regional culture.

The spatial dimensions of fertility

A study of disparities concerning the demographic pattern in India has traditionally led to the opposition of pioneer states, of which Kerala constitutes the spearhead, to the states which lag behind, where the fertility level appears to have been only slightly affected by the extensive birth control campaigns which were begun in the 1960s. The diffusion of new behaviour doubtlessly introduced a new heterogeneity to the demographic landscape of India, for the differences in fertility among regions, although not strictly speaking negligible prior to the beginning of the demographic transition, were nevertheless of lesser magnitude. The few statistics which enable us to describe the former regional disparities in fertility indicate, in effect, that the variations between regions, in particular linked with early female age at marriage, was minor before Independence, especially when compared with the new situations in the 1980s, which our cartography will illustrate.[7]

The most precise cartography available for the period following Independence remains ambiguous, for it relies on distributions based on age groups with unstable behaviour.[8] It will be noted, however, that the regions with low fertility in 1951 and 1961 appear to be distributed, according to analyses by Anderson, along the Bay of Bengal, from the Thanjavur region to coastal Andhra and Orissa, with another pocket located in the Garhwal region (Uttarkhand). Conversely, the areas with the highest recorded fertility values are more scattered, covering the Punjab, the valley of the Brahmaputra in Assam and a few isolated areas of Bihar and Madhya Pradesh. This map of pre-transitional fertility is difficult to interpret because the data are both inconsistent and incomplete. The spatial patterning of fertility is very fragmented because the distribution of values is segmented

7. While differences between fertility estimates between Indian states used to be minimal between the 1960s (a ratio of 1 to 1.2-1.4), these are now considerable (1 to 3). See Visaria and Visaria (1982), p. 509. Srinivasan (1995) pp. 67-94.

8. See Anderson (1974). This is one of the only studies to use district-level census statistics. It may be noted that the probable fertility *increase* that took place in 1951-61 does confuse the picture.

around different characteristic regions, such as the Punjab, Assam or Tamil Nadu. Regional demographic identity seems to take precedence over a global spatial principle. Nevertheless, some geographical orientations in fertility appear to foresee features illustrated by recent maps, the north-south opposition, for instance.

Recent statistics show very strong differences, for fertility doubles as one moves from the "advanced" states such as Kerala or Tamil Nadu, where fertility is today at about the replacement level (two children per woman), to the large Hindi-speaking states such as Uttar Pradesh, Bihar, Rajasthan and Madhya Pradesh, where fertility is significantly higher. We intend to examine here these differences on a geographical scale which is smaller than the states, the size of which (fifteen of them have populations exceeding ten million inhabitants) could conceal a high degree of heterogeneity.[9] Various statistical analyses of fertility differentials carried out on the basis of figures from 1981 or 1991 have demonstrated the major role played by the status of women, above all expressed by literacy rate and activity, in the determination of local fertility levels.[10] It should be noted that despite the great variety of indicators and variables tested, the measurable economic differences between Indian regions appears to occupy only a very secondary place in the establishment of fertility models for the districts of the country. These observations tend toward the surmise of Dyson and Moore (1983), who were the first to relate fertility differentials in India to its social and cultural structure. These authors, following studies by Sopher in geography and by Karve in ethnology, emphasized the crucial role of the virtual north-south boundary separating Sanskritized and Islamized north India from Dravidian south India, strong in its specific cultural traditions.[11] We shall return later to the interest as well as the limitations represented by this division of India. The fact remains that these recent statistical models, with an abundance of social, cultural and economic variables, have not succeeded in entirely freeing themselves from "residual" geographic dimensions, in particular from the north-south divide.

Fertility differentials on the scale of districts

Before proceeding with a cartographic examination of Indian demography, we shall consider from a statistical point of view the corpus of available data pertaining to fertility, thereby underscoring the heterogeneity that characterizes it. As a result of inadequacies in the civil registration (incompleteness), the most reliable data relating to Indian fertility are derived from *sample surveys*. It is a question in this case of the annual evaluations of the *Sample Registration System* (SRS), which provide basic

9. In 1991, India comprised 466 districts (average population of 18 lakhs) and around 3,500 taluks (average population of 2.4 lakhs). Demographic data below state level are infrequent.

10. See Bhat (1998); Malhotra *et al.* (1995); Murthi *et al.* (1995).

11. See Sopher (1980); Karve (1968).

indicators regarding mortality and birth rate, and from a national campaign of detailed demographic and health surveys conducted in 1992-93 (*National Family Health Survey*). These sources provide relatively sound estimates, both for tendencies since the 1970s and the social determinants of demographic behaviour.[12] However, for our purpose they are very imprecise geographically, for the statistics from them are aggregated on the level of the states, which have, as previously mentioned, populations much too large to enable of cartographic study.

On a smaller geographical scale and because of the various inadequacies already noted in the civil registration, only census data can, on the basis of their exhaustiveness, compensate for this statistical deficiency. However, the census is not conceived to measure fertility and, as a consequence, one must utilize indirect measurements derived in general from the proportion of children of an age below seven years, or from questions pertaining to births during the year preceding the census.[13] Based on the data pertaining to children below seven years in 1991, Bhat has recently proposed a series of fertility estimates for 326 districts in the largest states of India.[14] We shall use these figures to give a general idea of the geographical differentials. To do this, we have chosen to represent the data pertaining to the fertility of the fourteen largest states in the form of a boxplot. A brief explanation is required to understand this type of graph, which is intended to comparatively summarize the distribution of a characteristic, in this instance the fertility level per district assessed in 1991.[15] The different states appear on the abscissa and are here classed, for the sake of simplicity, by increasing level of fertility. Fertility indices are measured on the ordinates in terms of the number of children per woman; for each state, the whole comprised by the districts was divided into four quartiles: the first quartile consists of the districts having the lowest values, and thus successively until the fourth and last quartile which consists of the districts with the highest values. Each "box" appearing in Figure 2.1 represents the fertility of half the districts, that is, the second and third quartiles. The fertility value in the "median" district appears in the centre of each box. The box, therefore, represents the central tendency and the intra-regional variance (among the districts of the same state).

12. See International Institute for Population Sciences (1995). For a new regional analysis of NFHS, see the estimates for 76 natural regions in Bhat and Zavier (1999).
13. See Mishra *et al* (1995). A new set of estimates is now available for 1991: *District Level Estimates of Fertility and Child Mortality for 1991* (1997).
14.. Bhat's method for estimating the total fertility rates consists in a backward projection of the population of children below seven for 1981 and 1991. His method takes into account variations in district-level mortality. See Bhat (1998).
15. This procedure enables to represent simultaneously levels (averages) and variation (variance) levels. See Tukey (1977) ; Bhrolcháin and Toulemon (1996).

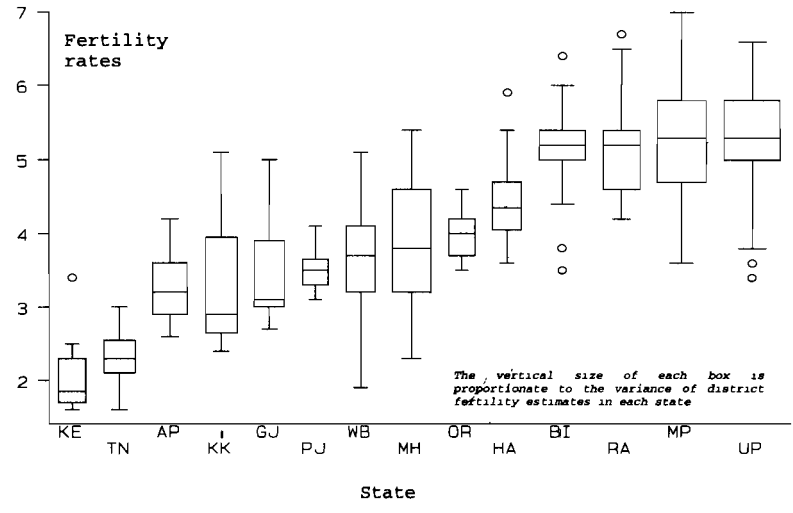

Figure 2.1: Distribution of district fertility estimates for longer states, 1991.

The graph (Figure 2.1) confirms, first, the contrasting character of fertility and the diversity of situations, from the two Malthusian states of the southern tip of India, to the four most fertile states in the north. These states appear, moreover, very much out of line with the rest of India. An analysis of the variance in fertility furthermore indicates that the division into states accounts for 70.6 per cent of the variation between districts; this result signifies that the regional patterning has a statistical weight for fertility which is comparable or superior to that of literacy, the socio-economic variable most closely correlated with the number of children per woman.[16] Nevertheless, the graph also enables of an evaluation of demographic diversity even within these large regional units. One will observe, for example, that the values can be very narrow in some states, such as Tamil Nadu, the Punjab, Bihar or even Uttar Pradesh, which has the largest number of districts in India.[17] This situation suggests a higher degree of homogeneity within these administrative units. Conversely, states such as Karnataka, Maharashtra, Rajasthan or Madhya Pradesh appear to be particularly heterogeneous in terms of reproductive behaviour. These disparities among sub-regions of the same state, when they are also pronounced, are indicative of particularisms which characterize local societies on a smaller scale.

These initial observations pertaining to the central dispersion are sustained by the examination of the "extreme values" represented in the graphs by the two horizontal bars (also called "whiskers") located below

16. These results are based respectively on an ANOVA performed by state and on an ordinary least-square regression for 361 districts.

17 The heterogeneity is a function of the total number of units. On Figure 2.1, the width of each box has been made proportional to the (square root of) number of observations.

and above the box. These bars are an extension of the central box (one and one half times the central dispersion) and make it possible to also identify a few isolated extreme values which are beyond their range. Thus, whereas the median value for fertility in Bihar or Uttar Pradesh is above five children per woman and the variance is rather limited, several districts (often urban) are to be distinguished by atypical fertility values of approximately 3.5 children per woman.

This examination, based on a sample encompassing 350 districts, thus moderates the stress placed alone on the level of the state by geographical analyses. Although Figure 2.1 effectively shows that the different Indian states are in much differentiated situations as concerns fertility transition, numerous intra-regional differences remain. Thus, to again take up the states in all-contrasting points, one will observe that in some districts of Uttar Pradesh and Bihar, fertility is comparable to that in a district of Kerala. This analysis could be pursued on a smaller scale, comparing the situation of the taluks of the same state. We have carried out such an analysis for the rural areas of Tamil Nadu, which is one of the least heterogeneous states with respect to fertility, as indicated by our preceding analysis. The dispersion of values obtained for the child/woman ratios remains quite high, varying twofold from taluk to taluk. We are thus confronted with an extremely contrasting demographic landscape, on the regional as well as local level, which in particular denotes the yet incomplete character of the penetration of new reproductive norms in the states, small regions, towns, urban quarters or localities. The following cartography makes it possible to discover certain principles of the spatial organization of fertility in India.

The spatial dimensions of fertility transition

The two maps presented here (Figures 2.3 and 2.4) employ fertility estimates by Bhat (1998); we have held to one homogeneous source so as to limit the discrepancies which could result from different methods of evaluation. The main weakness of these figures lies in the nature of the evaluation of infant mortality. It will be noted that the figures, derived from decennial censuses, refer to fertility during the six preceding years. The classification of fertility levels remains the same from one map to the next, but some values are entirely lacking for areas where the surveys could not be carried out (Assam in 1981, Jammu and Kashmir in 1991).[18]

The maps present a coherent and regular picture of the distribution of Indian fertility, with regional variations, which are sufficiently pronounced to enable of a detailed geographical interpretation. Since the late 1970s (Figure 2.3), average fertility has fallen below 3.5 children per woman in several areas. The first of these Malthusian pockets is evidently centred around Kerala, or more precisely around the former regions of Travancore

18. For the maps, 1981 values have been adjusted for new 1991 districts. When district level estimates were not available (as in north-east India), I have used state averages. Islands are not shown on the map. Other maps for 1981 or 1991 may be found in Mishra (1995) and Malhotra (1995).

and Cochin, which recorded the lowest values in the country. Other adjoining districts also reached this low level of fertility, namely the historical centre of Tamil country (Coimbatore, Madurai, Thanjavur) and the nearly continuous coastal strip of the Konkan extending from northern Kerala, by way of Goa, to Mumbai (Bombay). The adjacent regions, forming a large crown bordering the coast from Gujarat to Andhra Pradesh and southern Bengal, clearly seem to have entered this declining evolution, but less sharply because the average number of children remains above 3.5. Other areas of decline are also perceptible, notably in the Punjab, Himachal Pradesh and Manipur. With the exception of Mumbai, some urban centres appear to be strongly affected by the decline, such as Chandigarh, Pune, Chennai (Madras) and Calcutta, often with an effect on their rural hinterlands.

This profile has become remarkably pronounced in a period of ten years (Figure 2.4). Fertility in 1991, at less then 2.5 children per woman, henceforth entered the final phase of its transition in the southern promontory of the subcontinent. The decrease in fertility was particularly spectacular in Kerala and Tamil Nadu, even if some small regions, for instance Malabar, remained slightly behind. The same holds for the districts of Goa, Bangalore and the Karnataka coast. Elsewhere in India, equally low fertility levels are scarcely to be found, except in some metropolitan agglomerations such as Chandigarh, Mumbai and Calcutta. In these latter areas or cities, fertility decline, following the example of the experience in European or Asian countries, must not be long in reaching a lower limit of about 1.5 children per woman. As indicated by the results of the NFHS survey in Kerala, Goa and Tamil Nadu, the aggregate of couples there have recourse to contraception in order to space and limit births, while the ideal of fertility has drawn very close to the reproduction level, that is, two children per couple. Although the very young age structure still lends these populations a strong demographic impetus, growth will soon be very low, indeed nil, in numerous districts.

The general downturn in fertility in the regions identified ten years earlier also increased, to the extent of covering nearly all of coastal and southern India with fertility levels of less than 3.5 children. In the interior of coastal states, such as Maharashtra and West Bengal, districts with highly variable fertility levels nevertheless coexist. The decline also continued in the pocket of the north-west, centred on Chandigarh and rural pockets in the Punjab, without having registered as great an impact in the Hindi-speaking areas of Haryana and Uttar Pradesh. The very rapid urbanization of Delhi and its region appears, moreover, to have only a modest effect on demographic behaviour. It is, however, true that the capital is next to the zone which shows the greatest resistance to the diffusion of new attitudes and reproductive practices, about which a few words should be said.

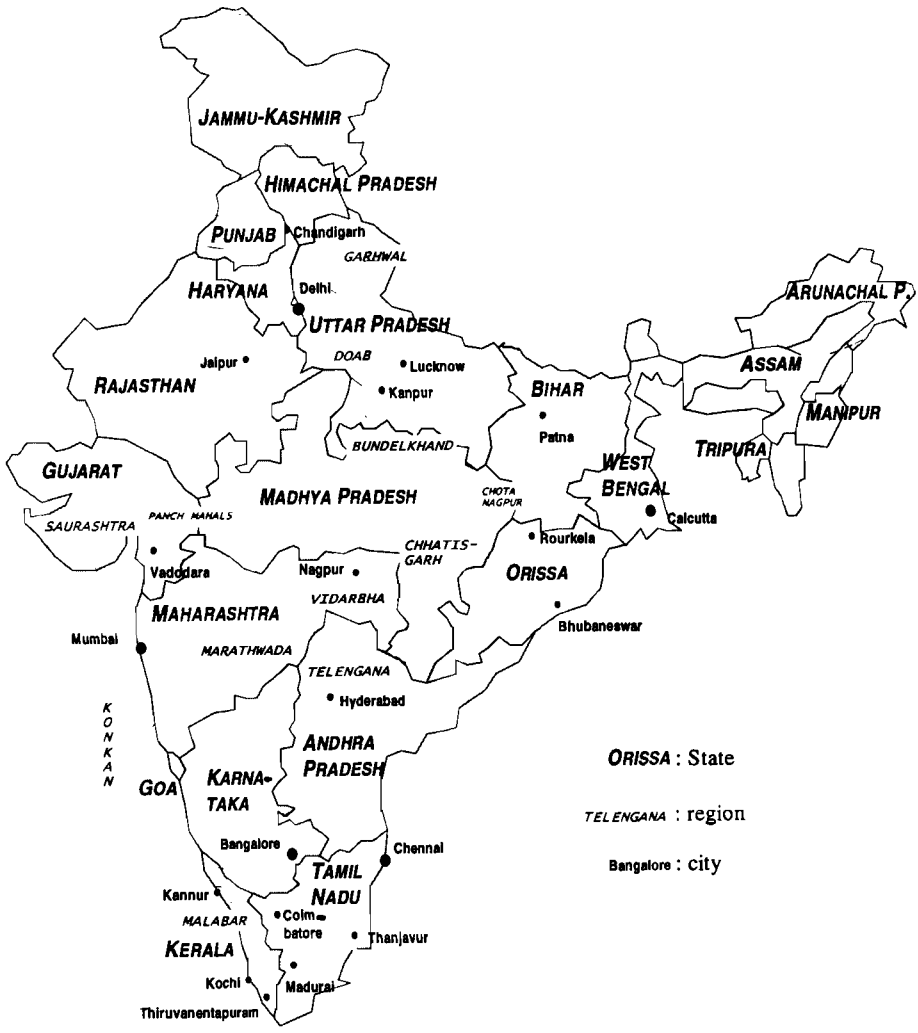

Figure 2.2: Region and cities mentioned in the text

This region, which in a way constitutes the core of the traditional demographic system, characterized above all by a high fertility and a vigorous patriarchy, has grown smaller in the interval of two censuses, but conserves a strong spatial cohesion within the so-called *Bimaru* zone, which is comprised of the four large states of north India.[19] It includes the western

19. viz. *Bi*har, *Ma*dhya Pradesh, *R*ajasthan and *U*ttar Pradesh. This designation has been introduced by Ashish Bose. For a demographic analysis of this macro-region, see Sathia

fringe of Uttar Pradesh, a rather prosperous agricultural region bathed by the Ganga and the Yamuna (Doab), then extends south toward Rajasthan and above all toward Madhya Pradesh, of which it forms notably the northern border (Chambal valley, Bundelkhand and Baghelkhand), stretching toward Bihar. This region occupies a central position in the Hindi-speaking zone of the Ganga basin, which includes Haryana and Uttar Pradesh, as well as by extension Rajasthan, Madhya Pradesh and Bihar, the regional or local dialects of which (Rajasthani, Bhojpuri, Urdu, etc.) are very close to Hindi. It is particularly characterized by its pronounced economic underdevelopment, the numerical importance of Brahmins and the marginalization of women, both in terms of education and in terms of employment. However, on other planes, it is far from being completely homogeneous, in particular as concerns social composition (number of Muslims, tribals), density and urbanization or landscape (plains, hills, forests). Only a few isolated districts, notably in the very remote mountainous state of Arunachal Pradesh, record today fertility levels as high as in the *Bimaru* core area, above five children per woman, levels which have subsequently only marginally evolved since fertility decline began.

A spatial interpretation of fertility

The dispersion of fertility in India, as interpreted by means of these two maps, presents a sufficiently manifest geographical regularity to provide now a few main principles. Thus, if one does not take into consideration the demographic geography of the states in the north-east, which is, moreover, not well known, the strong compactness of demographic change reflects an image of Indian fertility as successive crowns centred around the Gangetic region, which has the highest fertility. The distance from this centre is, moreover, the first key to interpreting the diffusion, originating on the periphery, of the decline in fertility. We thus propose, on the basis of these maps, to substitute for the classic north-south dichotomy, popularized in particular by Dyson and Moore, a more complex spatial structuration, defined by an almost concentric distribution of fertility around a central locus at the junction of Hindi-language states. Although the most distant regions, in this case the southern promontory of India, are indeed those in which the reduction of fertility has been the greatest, the principle of gradation is also applicable to the nearest peripheral areas, such as the mountainous regions of Himachal Pradesh and Uttar Pradesh (Garhwal). The movement in the last twenty years of the "front line", which delineates the belt of high fertility areas, serves to accentuate this crown-shaped organization of Indian space, but also the progressive isolation of the regions most favouring rising birth rates which had earlier formed a much more extensive space, including even border countries such as Nepal, Pakistan and Bangladesh (Aggarwal, 1994: 368)

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and Jejeebhoy (1991). This study unfortunately does not examine internal demographic variations within these large states.

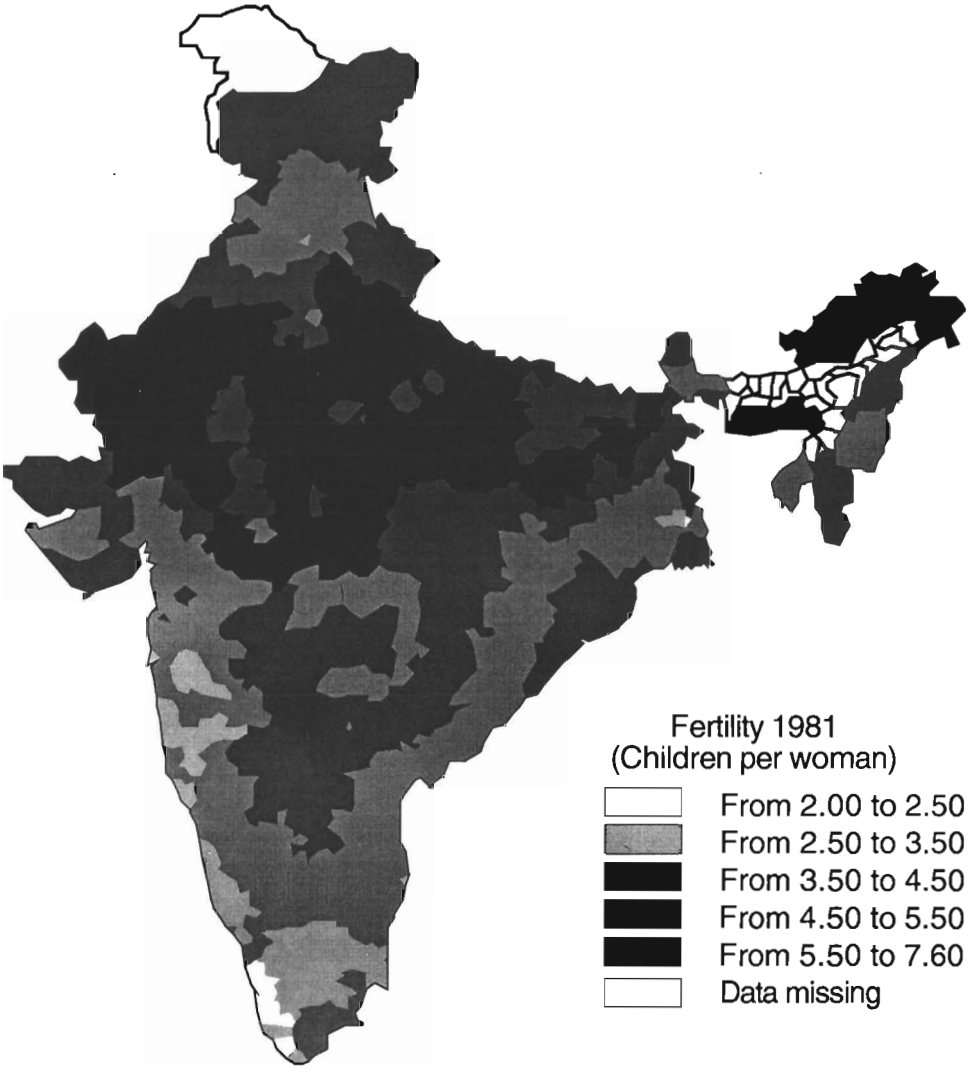

Figure 2.3: Fertility estimates for 1981 due to Mari Bhat

A second key to the interpretation of our maps relates to what we shall call the "littoral effect", that is to say, the particularly rapid rate which characterizes the transition in the coastal areas, perhaps with the exclusion of Orissa. This phenomenon can of course be interpreted in terms of distance from the seat of high fertility on the continent, but also in geo-historical terms. The coastal regions are, in fact, those where exchanges with the rest of the world, notably because of colonization, were the most intense. Their

population also often distinguishes itself from the inland areas (earlier conversions to Christianity and Islamization, castes of fisherfolk, etc.), and progress in education has been much more rapid there.[20] It could seem difficult to distinguish the littoral effect from the centrifugal gradient mentioned above, insofar as these two principles of spatial organization appear to describe the same degree of proximity to or distance from the core. However, it will be noted that unlike the classical example of diffusion spending outwards from innovation modes, the change has a peripheral origin.

A third rule, independent of the two first principles, follows from the focal role which falls to a large number of metropolises in the diffusion of new reproductive behaviour, in particular agglomerations with a high industrial concentration. We have already mentioned the effect pertaining to Calcutta, Chennai and Chandigarh. But a closer reading also brings out the influence of Bhubaneshwar in Orissa, Bangalore in Karnataka, Nagpur in Vidarbha (Maharashtra), Rourkela and the other industrial towns of Chota Nagpur, Patna in Bihar, Lucknow and Kanpur in Uttar Pradesh, etc. If it is once again a question of a gradient effect, this principle obviously also holds on a smaller scale, for the influence of towns is rapidly diluted as soon as one moves away from them. This "urban effect" would also doubtlessly appear more clearly on the micro-regional scale. Moreover, it remains to explain why the effect of certain metropolises sometimes appears to be imperceptible or very weak in the interior of regions with a high fertility (around Delhi or Jaipur), or regions with a low fertility (around Kochi or Coimbatore).

Alongside these general guiding principles, certain regional particularisms are still perceptible. It is thus no longer a question of a general trends, but of a patterning in more homogeneous sub-regions which are clearly distinguished from neighbouring areas. The pioneering and atypical role of the Punjab has already been noted in the fertility decline in north India. Similarly, an apparently rapid decrease was recorded in Telengana (Andhra Pradesh), Goa and Saurashtra (Gujarat). Conversely, pockets of high fertility subsist in more extensive areas where changes were, on the contrary, very rapid. This is notably the case over an area of the western part of the Deccan plateau, along a band extending northward to Maharashtra (Marathawada) as far as Karnataka (Hyderabad Karnatak), and closely corresponding to the implantation of the Muslim sultanates until the 18th century. Similarly, the peripheral tribal areas of Madhya Pradesh (Chhatisgarh, Gondwana, and Bhil country) report a singularly high fertility rate. One may think to discern the effect of sociological profiles of a type favouring high birth rates (presence of tribals or Muslims), or of a Malthusian type (Christian and Sikh presence) in the determination of these regional disparities. Nevertheless, the effects of these factors on fertility are

20. On the role of the Indian littoral, see Sopher's interpretation in "The Geographical Patterning of Culture in India", in Sopher (1980).

ambiguous, as indicated by statistical analyses based on less impressionist examinations of the Indian demographic landscape.[21]

This observation will call to mind that, as concerns the limitations of our interpretation based solely on cartographic representations, compared with the contribution of statistical models, the spatial configuration of fertility does not of itself enable one to confirm the connection between demographic behaviour and the other social, cultural and economic dimensions of the Indian landscape. On the other hand, some specifically spatial dimensions of demographic change, which we have just considered, scarcely emerge from statistical analyses. One must, in fact, be able to evaluate the specific effect of the spatial configuration on the relationships between variables. The only tools presently available for this undertaking concern the measure of spatial autocorrelation. In the case of the analysis of the regional determinants of fertility, the models that have integrated this spatial dimension have clearly underscored the intensity of this spatial autocorrelation.[22] The cartographic examination which has been conducted confirms this, for the very high level of covariations between border districts is evident, and this is beyond the strong homogeneity in the interior of the states evaluated by means of Figure 2.1.

This spatial autocorrelation is, however, manifested in a more complex manner than by the effect of spatial proximity alone. In effect, the sociocultural boundaries (population, linguistic group, historic substratum) create very abrupt points of continuity, as, for example, going from coastal Andhra (Godavari delta) to the Bastar region (Madhya Pradesh); or, without leaving the state of Gujarat, going from the town of Vadodara (Baroda) to Panch Mahals district. These stages indicate the presence of invisible boundaries, as for instance that of tribal India in the examples which we have mentioned. Conversely, numerous identified areas, which consequently correspond to demographic territories having a district identity, span several states, sometimes crossing over well-established social or physical borders. The central region of high fertility is a prime illustration of this. One may take as an additional example the most advanced centre of fertility decline in India, on either side of the southern Ghats. The homogeneity of this area respective of fertility, with henceforth less than two children per woman, would lead one to overlook the linguistic heterogeneity (Tamil-Malayalam) and the natural border of the Ghats.[23] As regards the neighbouring regions, such as the rest of Tamil Nadu or southern Karnataka, the discontinuity of fertility values is pronounced.

The cartographic study therefore makes it possible, first, to identify certain less known boundaries, which divide Indian space in the interior. This pattern, which fertility makes perceptible, doubtlessly does not

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21. Various analyses of fertility differentials for 1981 and 1991 are compared in Guilmoto and Rajan (1998).

22. More detail in Malhotra *et al.* (1995) or Murti *et al.* (1995). For a discussion on spatial statistics, see Charre (1995); Hainning (1990); Bailey and Gatrell (1995).

23. The higher fertility levels observed in some districts of Kerala (such as Mallapuram) may be related to the higher proportion of Muslims in these areas.

correspond to that which other phenomena could bring to light. But insofar as the decline in fertility is indicative of the penetration of a new system of norms, and more particularly of new parameters in the equation which links individual and familial reproductive behaviour with social and economic contexts, the unequal penetration in India of Malthusian behaviour illustrates the new social differentiation which modernity could introduce, above and beyond the better known differences in terms of social classes or of type of residence (urban/rural). It would subsequently be appropriate —but this project exceeds the descriptive intention of this article— to relate this map to that of other dimensions of social change (electoral behaviour, penetration of wage-earning and market economy, etc.).

In the second place, the light shed by cartography also provides a diachronic dimension to the study of the propagation of changes. One will easily observe, in fact, that the spatial disparities shown on the map of 1981 indicate the form of changes noted ten years later, in such a way that the map of 1991 enables one to similarly foretell the changes in fertility during the current decade. Although it is certainly hazardous to predict the effective magnitude of decline, the regional demographic panorama in the year 2000 is quite foreseeable: fertility will doubtlessly come down throughout south India (with the exclusion of the formerly Muslim Karnataka) and on the coastal perimeter of Gujarat and Maharashtra to the values typical for industrialized countries (two or less children per woman). The centre of fertility decline in the Punjab will extend to Himachal Pradesh, northern Rajasthan, Haryana and Delhi, fertility reaching then values lying between two and three children per woman. Selectively, as around Chandigarh, fertility rates could even decline more significantly. Similarly, the decline in fertility would be intensified in the region of Nagpur, Calcutta and some states in the north-east (Manipur, Mizoram, Tripura), and the number of children per woman would approach the replacement level of generations (approximately 2.2 children per woman). Elsewhere in India, the effect of the decline will be less spectacular, for levels will probably remain above three children per woman. It nevertheless remains difficult to foresee the magnitude of decline in areas more resistant to the diffusion of new demographic behaviour. In addition, the population density of the Gangetic basin lends a considerable demographic weight to this question for the entire country.

From a more theoretical point of view, the geographic approach brings with it a few additional interpretative points important in the classic analysis of fertility decline in India. The latter has brought to the fore diverse social and cultural dimensions, notably the status of women in society and in production. Literacy and the activity of women are the variables most closely associated, from a statistical point of view, with a lower fertility. Expressed in more analytical terms, these dimensions of the status of women represent the capacity of women to escape the traditional definition of their

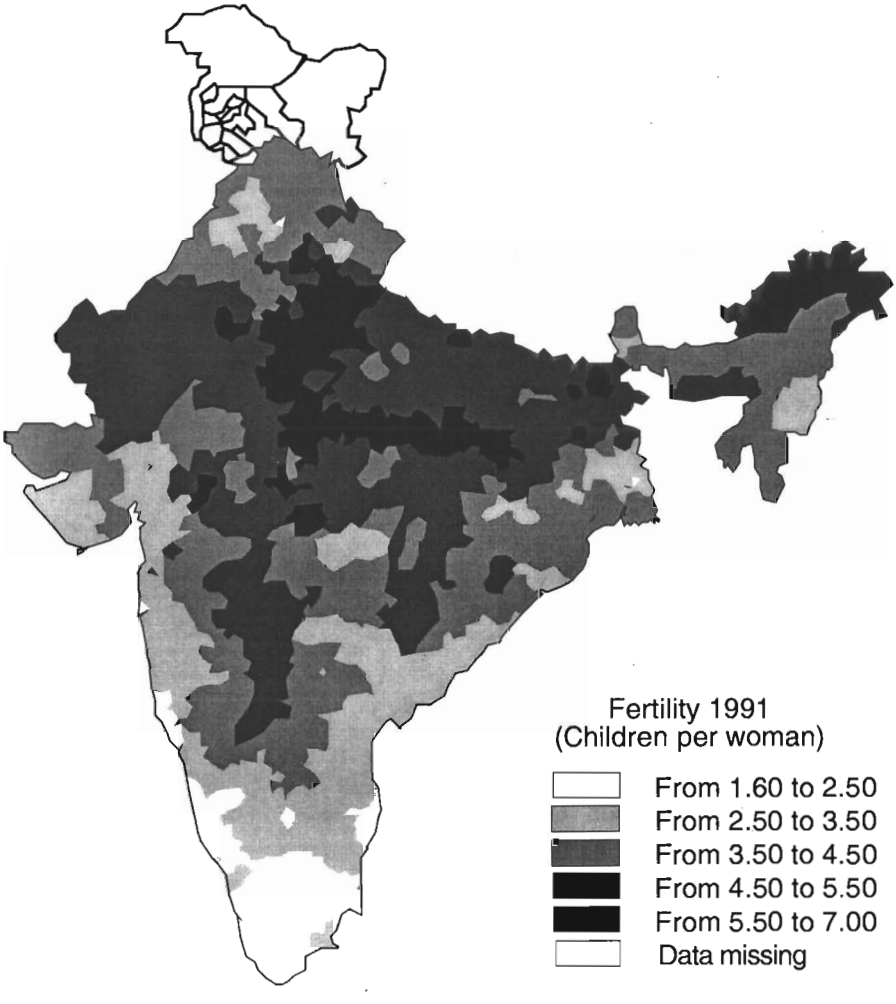

Figure 2.4: Fertility estimates for 1991 due to Mari Bhat

role as mothers and wives through a higher degree of social autonomy and a better integration in the labour market.[24] Fertility would therefore be principally a response of households in the interior to this progressive emancipation. However, the strong geographic coherence, which emerges from the cartographic examination the independent role, played by the spatial mechanisms characteristic of the process of diffusion. The transition of fertility has, in fact, followed a course typical of the diffusion of innovations along the channels of social change, relying thus very heavily on

24. For international comparison, see Jejeebhoy (1995).

social and cultural contiguities in order to spread. Government intervention, whether a question of diffusion of contraceptive products or, in a more nonmaterial manner, that of a new system of norms giving greater importance to the quality of children (health, education) over their quantity, has consequently received responses which are highly variable from region to region: the geographical profile which results thereof disregards the fact that it would only be a matter of unequal expertise (and assiduity) of the different regional governments in the implementation of the family planning policies decreed in New Delhi.

Conclusion

This geographical presentation of the unequal progress in the decline of fertility in the interior space of the country reinforces the interest in the study of the mechanisms of diffusion at work in the redrawing of the demographic map of India. However, some questions remain in abeyance to which our analysis cannot respond. Notably, one does not know the precise locus of the demographic innovation because numerous scales of interpretation exist regarding changes in reproductive behaviour: women, households, communities, or social groups. Our level of analysis (that of the district) obviously remains too global to test precise hypotheses, for one could easily be victim of a classic illusion of scale (*ecological fallacy*). In the description of diffusion, one also remains confined by an approach which is too global to be able to identify the relays and channels characteristic of the diffusion of new familial representations and contraceptive techniques. As mentioned earlier, the first analysis on a smaller scale, on the level of taluks, or even of panchayats which constitute the former, indicates that the degree of heterogeneity of behaviour remains quite pronounced on the local level. With the help of a more detailed micro-regional cartography, one should be able to bring to light the respective roles of institutional intervention (family care and planning centre) or of communication infrastructures (road network, cinemas, etc.), in the dynamics of the demographic landscape.

The cartographic scale employed for this article nevertheless makes it possible to shed light on a few fundamental features of a new spatial dynamics in India which call into question classic models of cultural geography. The segmentation in autonomous enclaves, legacy of the historical morphology of Indian space, seems to subside gradually. One has certainly isolated the specific identity of a few regional pockets and the effect of persistence on fertility, as for instance in the former sultanates in the Deccan, but this "mosaic" division plays a minor role. The different forms of modernization which can be selectively supported by regional identities (political, social, cultural, etc.), as the example of Kerala calls to mind, impose new principles of organization, and the mechanisms of exchange at the centre of the diffusion process have precisely substituted more ample and constantly shifting boundaries for the strong historical disparities. In addition, Indian space has henceforth changed from a mosaic

to a crown-shaped structure, which seems to be principally oriented around the hard core of traditional India, where fertility has scarcely declined.

In such a structure, the least customary feature is indubitably the peripheral (exogenous?) origin of innovation and the centripetal progression of birth control, which starts from the coastal fringes of Indian space and moves toward the centre of the Gangetic valley. Contrary to the centrifugal action of propagation which gains ground starting from the origin, the process of diffusion from the periphery toward a centre of resistance is more similar to a gradual encircling of a central region which appears to be besieged by modernity. Let us note in conclusion that the growing heterogeneity of fertility behaviour which we have brought out in the course of this article conceals, in fact, a future transregional homogenization of demographic behaviour on the pan-Indian scale, that is to say, a process of progressive convergence toward a dominant Malthusian model as in other Asian countries (Sri Lanka, Thailand, South Korea), effacing regional discontinuities to the advantage of a global geographical readjustment. Fertility doubtlessly illustrates today how Indian space integrates this homogenization and how the resistance to these social upheavals is organized.

PART II

RURAL AND URBAN POLES

3

Diversification of Economic Activities in Rural India: Some Contrasting Trends

Hélène GUETAT-BERNARD

The new policy of economic liberalisation pursued by the Indian government since the beginning of the 1990s is the continuation of an economic reorientation that started ten years earlier. The concrete application of new measures at the local district level will however take long, and depend on political decisions taken by the various states. Improvements in some economic indicators over recent years do not mean that the economic difficulties of the preceding period have disappeared, while new uncertainties have made an appearance, particularly for small farmers. Reductions in subsidies on agricultural supplies and increasing prices of food and household necessities are affecting families of very modest means, while the division of inheritances and large dowry payments (connected with a still strong demographic growth, along with social pressures) continue to break up land-holdings (Landy, 1995). Already, "one quarter of the population engaged in agriculture, accounting for almost two thirds of the total working population, consists of landless peasants, condemned to work for wages or the hazards of tenant-farming." As for the farmers officially classified as "marginal" —that is, those owning less than a hectare of land— they are far from marginal in demographic terms. The new measures intended to remedy imbalances and blockages in the national economy offer little hope to the small peasants. Increased prices of agricultural supplies will make it impossible for them to take advantage of improved methods of cultivation and soil-productivity. At the same time, the capacity of the agricultural sector to absorb an increasing rural labour-force is proving limited, since production methods connected with the green revolution are not providing enough jobs for all. Under these circumstances, imbalances affecting the future of the countryside, and questions about how to resolve them, remain persistent. For example, to what extent can accelerated diversification of non-agricultural economic activities help to

retain in the countryside people of precarious economic resources, who have so far always managed to find ways to avoid a permanent move to the cities? How can such diversification, taking advantage of local potentialities, contribute to rural development?

The statistics are not easy to interpret

No figures on occupational structures according to the residing place are available from before the Census of 1951, but dependence on the agricultural sector was more than 80 per cent in rural areas then, as was still the case in 1981 and 1991.

Statistics do however indicate a significant trend towards diversification of rural occupations in the Indian countryside. The decennial censuses and national statistical surveys have registered a perceptible shift in the occupational structure of the rural labour-force towards non-agricultural activities since the early 1970s. For rural India as a whole, the censuses, but even more so the N.S.S.[1] show that the rate of increase of the working population engaged in agricultural activities is less than that of the working population engaged in non-agricultural activities (Mahendra Dev, 1995). However, these figures need to be analysed with a lot of caution and they have been the topic of strongly contrasting commentaries.

On one hand, at the national level, only about one fifth of the rural working population is engaged in non-agricultural activity as a main occupation.[2] This represents something of a failure in the development policies followed since Independence (whether as a result of attempts to decentralize or shift urban industrial activities to rural areas, of the "green revolution", or of the integrated rural development project), for the proportion of the labour force engaged in non-agricultural activities is generally considered as an indicator of economic growth. Compared with other Asian countries, where one third to one half of rural workers are thus engaged, India ranks lowest according to this indicator. Nevertheless, it is obvious that international comparisons are not so simple, because of variations in the criteria utilized in census-taking, especially the distinction between main and secondary activities.[3] At the national level in India as in

1. The main sources of information about rural industries are the decennial population censuses, the regular surveys based on national samples (*National Sample Surveys*, N.S.S.), or economic surveys.

2. According to the census, the rural non-agricultural sector engaged 43.7 million individuals in 1991, which represents 19.7 per cent of the rural working population engaged as a main activity, according to Kanikar (1994). For comparison, these rates have increased, for men, from 1961 to 1981, from 16.3 per cent to 18.2 per cent. The apparent drop in the number of women engaged in the rural non-agricultural sector (from 5.7 million in 1961 to 5.6 million in 1981 according to the census, that is from 10.3 per cent in 1961 to 9.7 per cent in 1981) can be explained by a considerable underestimation, for in general, compared with male occupations, a greater proportion of women are engaged in non-agricultural rural activities.

3. Strong fluctuations in the working population shown by successive surveys are evidence of under registration (from one census to another) of unpaid family workers,

other countries, marked contrasts exist between the various federal states, and even more so between different regions within the states, and at an even lower level between different rural areas and villages (Unni, 1991). On the other hand, the rapid increase in non-agricultural occupations in rural areas is often underestimated, because it is difficult to take into account both female labour and more generally all the complementary sources of income that contribute to the "total income" of individuals and rural families. Therefore, such proportions give a poor picture of the real scale of non-agricultural rural activities, since few families are dependent solely on agriculture for their total income. For example, most of the seasonal fluctuations in rural non-agricultural activities can be explained by shifts in occupational structure by temporary workers who move from an agricultural activity to a non-agricultural one and vice-versa.

Lack of recognition of this sector is due to the inherent difficulties of an exhaustive census. In addition, the proportion of non-agricultural employment in rural areas would have shown a greater increase if certain areas previously classified as rural had not been reclassified as urban in the latest counts.

This proportion is also often difficult to estimate because it goes along with an increase in the proportion of paid jobs, often temporary and short-term, in undertakings classified as "informal";[4] over the last 20 years, almost three quarters of the increase in non-agricultural rural employment relates to the informal sector (Vaidyanathan, 1994). Moreover, the share of the informal sector in the total number of manufacturing occupations has increased from 73 per cent to 82 per cent over the 1970s and 80s, with the greatest growth taking place in rural areas (Basant, 1994). Whether they belong to the informal sector or not, rural industries ought to attract the attention of planners, since their annual growth rate of 5.4 per cent (according to the economic census report of 1990) indicates an intense dynamism.

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and people with several occupations whose paid work is difficult to assess (such as for bonded labour). While the Censuses show large differences from one decade to another, the N.S.S. present more stable rates for the working population. It is generally accepted that the Census of 1961 gives a correct picture of these rates: its figures are comparable to those of the N.S.S., and its estimate of female workers is the most convincing. The Census of 1971, by introducing the concept of "main activity" for people who have worked more than 183 days per year, underestimates the size of the working population, especially in the case of women, since secondary activities are poorly represented. In the 1981 Census the concept of "marginal workers"— people who had worked no more than six months in the year preceding the census, was set against that of main activity. Despite this, figures from the 1981 Census are difficult to compare with those of 1961, since the estimates of male and female employment are lower. These difficulties of evaluation make comparisons of non-agricultural rural occupations, and their distribution according to occupational sectors at different times, a delicate task.

4. A few figures allow us to see this issue more clearly: according to the Report of the Economic Census of 1990, almost 13 million businesses exist in rural areas; 83 per cent of these are non-agricultural. These employ an average of 2.2 persons and 80 per cent of them are active all year round. 71 per cent of them utilize manual energy alone (Kanikar, 1994).

At the same time, the proportion of self-employed individuals is decreasing, particularly in the area of household manufactures, which have always constituted an important source of employment. The big drop since the 1960s is more marked amongst women than men, in both absolute and relative terms.[5] On the other hand, the modern sector of household industries shows a tendency to rise.

In this connection, the example of silk production is revealing (Guetat-Bernard, 1995): from the first steps in transforming the silk threads, up to the weaving, this activity has traditionally created a lot of employment. The weaving sector in India has witnessed profound waves of structural change, punctuating the industrial history of the sub-continent. Here let us concentrate on the present revival being carried out by the dynamism of small entrepreneurs in the informal sector, who by modernizing their production techniques are creating a strong competition for bigger businesses. Amongst the small hand weavers, who are self-employed or work for a master weaver, only those who specialize in extremely sophisticated production techniques can survive, such as the silk sari weavers, whose skill has not yet been matched by any machine. The rest live in extreme poverty and will gradually be obliged to give up the traditional occupation of their caste.

Strongly contrasting local trends, and weak intersectoral linkages

This change in the structure of rural employment in India is providing food for rich discussions and controversies, focusing especially on the existence of intersectoral linkages between agriculture and industry. John Mellor, whose thesis is still giving rise to discussion in India, presented a virtuous circle of growth whose internal dynamism results from an increasing demand for local products and services, sustained by the multiplier effect of incomes of farmers enriched by the green revolution (Mellor, 1976). In this sense, the effects generated by consumer demand would outweigh those created by increased agricultural production. This is said to be partially confirmed by the fact that, on the whole, the existence of an exploitable raw material in the locality is rarely the explanation for the location of a rural industry: more important factors are local tradition, skills and established networks. According to this model, part of the savings of wealthy farmers would moreover be invested, thus responding to the new demand.

In other words, is the present trend of diversification in rural occupations explained by the existence of growth-fostering linkages between the agricultural and non-agricultural sectors, to dynamic and productive activities (as J. Mellor suggests)? Alternatively, does it rather reflect a changeover towards a "residual" non-agricultural sector, with lower

5. Such jobs, which represented more than a quarter of the non-agricultural rural occupations for males in 1961, represent only an eighth, thirty years later; for women, the proportions have dropped from more than half to a third.

productivity than the agricultural sector, whose growth is due to the unavailability of sufficient agricultural employment? The outcome of this debate is important: we must evaluate whether the relative expansion of non-agricultural occupations reflects a positive development, in the sense that the jobs created are connected with a rising level of consumption and productivity, or on the contrary, if this expansion results from a survival solution for impoverished rural families who are trying to keep up their income level by engaging some of their members in ill-paid and unproductive non-agricultural activities.[6]

Various studies on this topic in many different countries, particularly the important ones undertaken by the World Bank in the 1980s, give no clear answer: some could be interpreted positively, others negatively (Basu and Kashyap, 1992).

A study relating to two rural systems, one based on irrigated agriculture, the other on rain-fed agriculture, in the south of Karnataka state in south India, has made it possible to modify this hypothesis of an almost automatic relation between agricultural growth and growth in the secondary and tertiary sectors (Guetat-Bernard, 1994). Above all it showed the complexity of the phenomenon, and suggested a typology of non-agricultural rural activities. This field study, carried out in the countryside around Mysore and Mandya, showed especially that problems of analysis result from an intermingling of attractive and propulsive factors in the same place, according to the types of activity in question.

On the scale of the country as a whole and the various Indian states, the analysis of the statistics shows the existence of a relation between numbers of non-agricultural occupations and rural unemployment rates.[7] Villagers' participation in non-agricultural work is however inversely proportional to the size of the land-holdings owned by the households, on account of the social priority that is given to working the land. But another somewhat contradictory correlation emerged, between greater inequality in land distribution and lower incidence of non-agricultural employment. This suggestion had already been put forward in the work of R. Islam, when he

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6. Harriss (1991). An examination of the account-books of small shops, showing that very low incomes and earnings are very common amongst artisans and home-labourers, seems to support the second view sustained by Vaidyanathan.

7 However, this relationship is not free from ambiguity, insofar as on one hand, the unemployment rate recorded by the N.S.S. is significantly underestimated, and on the other, the highest levels of unemployment are found in the most dynamic areas. In fact, the rate is highest in areas where agriculture is prospering, partly because of labour migrations. In addition, these areas also show the highest proportions of households dependent on wage earners and temporary workers. Hence, it is easier for them to report their search for work (Unni 1990). Thus, the findings of Vaidyanathan are not in contradiction with the fact that there may be a positive correlation between numbers of non-agricultural jobs and a prospering agricultural sector.

The results of a regression analysis also enable Mahendra Dev (1990) to demonstrate the existence of a strong positive correlation between unemployment rate, soil productivity, and levels of non-agricultural occupations. The relationship between unemployment level and the rate of non-agricultural occupations is however not linear: in the Punjab, for example, a high proportion of non-agricultural occupations accompanies low unemployment, while in Kerala, both variables show high levels.

wrote that the degree of rural inequality tends to limit positive effects of agricultural growth upon the non-agricultural economy. It also echoes, at the local level, India's inescapable problem: the low level of effective demand inevitably limits economic growth, even though the strategy being followed at present relies on the effect of increasing demand from the middle and upper classes alone, estimated at one quarter of the total population, that is no less that 220 million inhabitants.[8] Jeemol Unni confirms that regions with the highest proportion of people living below the poverty line have low rates of male workers engaged in non-agricultural activities. So the hypothesis of a "residual" non-agricultural sector does not seem to be invariably confirmed: conditions of extreme poverty do not necessarily foster growth of activities in this sector, if there is insufficient demand. However, the same author, contradicting the findings of other researchers, shows that a concentration of landholdings in a region has beneficial effects on the percentage of non-agricultural jobs for males, particularly on activities related to commerce and transport.

This apparent contradiction in the correlation of all these variables shows that there is no proof of the positive impact of new agricultural technologies upon non-agricultural employment. In other words, regions where the methods of the green revolution have been implemented are not necessarily those where the non-agricultural rural sector is most dynamic.[9] This is proved by the case of Punjab,[10] a bastion of the green revolution, one of the few Indian states to have registered a drop in the proportion of the female and male labour force engaged in non agricultural activities between 1961 and 1981. It is supposed that increasing agricultural production during the first decades had a more positive effect upon agricultural employment than upon non-agricultural jobs (Unni, 1991:121). In this case, the green revolution did not foster decentralized production creating many jobs as predicted by J. Mellor.

In fact, transfer of agricultural surpluses to non-agricultural activities also depends on the potential new entrepreneurs being able to foresee and anticipate the market. For example in the irrigated farming district of Mandya, although there are too many simple sugar mills for local productive capacities, they still earn enough to seem worthwhile to wealthier peasants. Income from agricultural activities is moreover taxed at a much lower rate than income earned from professional, industrial or commercial activities.[11]

In the rural system of rain-fed agriculture at Nagamangala, not far from Mandya, peasants would like to diversify their activities, but they seek to multiply their sources of income by safe investments in "traditional" agricultural production or industry, such as sugar or rice mills, or in commerce connected with agriculture, which involve the least immediate

8 Durand-Dastès (1995).

9. Basant (1987); Harriss (1992).

10. The situation in the Punjab is unusual, not because of the rate of non-agricultural rural jobs, but because modern factories have been started in rural areas, as in the countryside around Coimbatore in Tamil Nadu.

11. Agricultural income is taxed only by the state of Karnataka, while other types of income are taxed by both central and state taxes.

risk. Moreover, these investment sectors also offer a possibility of development, as is shown by the increasing numbers of modernized rice-mills.

Growth of small rural towns plays a minor role

Neither do strong agricultural growth nor consequent increasing consumer demands automatically lead to an increased demand for the goods and services provided by local producers. The opening up of village economies and increased human mobility favour urban markets more. Thus, many "traditional" rural services and activities are disappearing, because they no longer suit the tastes of their customers, who are now more able to compare them with manufactured products offered by the towns. This applies to some artisans such as potters, jewellers or basket-weavers, and service trades such as washermen and barbers. On the other hand it does not apply to carpenters and tailors, whose numbers are growing in villages. Moreover, the resources drawn from agriculture are mostly turned towards financial and commercial investment, money lending and the purchase of fixed assets, whether locally or in towns.

Besides, towns have not always acted as nodes of growth. Their productive activities often have little connection with local economies, whether from the standpoint of production-links above or below existing channels, the financial resources utilized, or the employment of skilled labour. Thus beyond the small towns, rural areas have become closely linked to larger metropolitan centres. Under these circumstances, the terms of exchange have not favoured the agricultural sector, and money-flows have drained away from the countryside.[12] In Mandya, income drawn from the surrounding countryside, although it is a prosperous one, is rarely invested in industry, whether in the town or its rural surroundings. Mandya seems to be a market and administrative centre, with little industry apart from a government sugar factory. In general, in Mandya or Mysore —only 50 kilometres away from each other— urban businesses have little effect on linkage as a whole or on sub-contracting links with other small or medium ones. At Mandya, there are only two industrial areas, which are far from being fully occupied. And yet the new demand from rural households for consumer goods such as soft drinks, plastic products, sweets, etc. is gradually being partly met by products from recently established small industries or home workshops in villages, rural industrial zones, or at Mandya itself. The first signs of this development have become visible only since the early 1990s.

Certainly the greater or lesser proximity of an urban market may stimulate an increase in local supplies of goods and services, or conversely ensure a greater degree of investment of urban capital in the countryside with the idea of exploiting some local resource. This can be seen for example in the increasing numbers of chicken farms around the outskirts of

12. Guetat-Bernard (1994); and Harriss (1987).

towns, supplying meat or eggs, or the plantation of fruit orchards. It also happens when urban businessmen want to make use of the expertise of cheap rural labour (usually women and children under the supervision of the head of the household) in simple non-mechanized tasks such as the manufacture of matches, beedis or incense sticks. These activities, carried out in the home and often limited to specific job-pools, create a lot of low-productivity employment. Although not well paid, the incomes are appreciated by the family decision-makers: in the absence of other alternatives, they supplement income from agriculture. However, in terms of employment possibilities, adult males prefer to look for urban jobs, in the framework of shuttle migrations (not to mention more distant and longer-term migrations.) Within a radius of twenty-odd kilometres, depending on the urban activities, the size of the town and the transport available, and also according to the employment market in the village and existing networks (which implies differences between villages where agriculture is irrigated or rain-fed), the urban market exerts a very strong pull upon the rural work-force. As much as three quarters of the village workforce may be employed on building sites, for example; and in any case, most commonly one quarter of the rural working population is employed in towns.

Conclusion

Management of agricultural risk, the level of agricultural surplus resulting from intensified methods of cultivation, and the ease of capitalisation, as well as relationships between economic growth and agricultural dynamism, are all independent factors affecting the dynamism of rural industrialisation. Other equally important factors could also be mentioned, such as the developmental level of the human resources (especially level and quality of education), local infrastructures (especially those providing quick and easy access to urban markets for jobs, goods and services), and the nature of urban economic activities that are more or less favourable to sub-contracting connections with small and medium-sized rural enterprises. These positive elements are known, and more or less put forward according to the situations.

On the other hand, one issue has not been examined in Indian studies of rural development. The people's preference for country life, and even more for the village where their history lies, is well known (Racine 1997). Nevertheless, unlike some very recent work on rural areas in Europe, few studies have investigated the close connection between the value set on local identity and the potential for local development. How far can an attachment to a familiar environment and established social relationships become a growth factor? In the future, we must not merely consider the results of official policies, but also investigate the real motivations of the people involved and interpret the connections between territory and development. We must also enquire into the nature of social bonds in such an unequal society, since these bonds may constitute a development resource.

4

At the Roots of Urbanization: New Small Towns in Andhra Pradesh

Eric LECLERC

Introduction

This is, as far as urban analysis is concerned, a time of teratology.[1] Towns everywhere are in crisis, in the north as well as in the south. India, having nine cities of over two million inhabitants, is not exempt from this type of analysis. The country's weight, in terms of total urban population and as regards its place among the world's great metropolises, is growing at a pace proportional to the erosion of its image, as the towns in the peninsula are frequently likened to so many "Cities of Joy." The image of poverty in India, long a rural attribute, is today above all perpetuated in its urban aspect. Considering its importance in terms of world population (second in rank), India's share of the world's urban population is only legitimate (numbering 217 million, it is fourth highest).[2] In a recent work, J. Racine (1997) has even pointed out the modest character of Indian urban growth which marks the time, according to figures from the last census in 1991. Above all, he noted that this growth did not take place to the detriment of the countryside, contrary to the European model of urbanization. There is no rural exodus because the population there has doubled since 1950. However, urban growth takes place on the upper levels of the urban hierarchy, and this has been noted in all analyses based on the town's size-group in the last several censuses. Is this increasing disequilibrium to the disadvantage of small towns a precursory sign of a more serious urban crisis? Can an urban

1. According to the felicitous expression of Moriconi-Ebrard (1994).
2. Lardinois (1996), p. 301.

network without base survive in a space, which is to three-quarters rural? Far from the metropolises, we are concerned with the lower level of the urban hierarchy in order to ascertain the scale of this decline.

The contradictory role of small towns in Indian urbanization

Urbanization in the Indian subcontinent differs from most of the developing countries in its comparative weakness, with an urban population of 25.7 per cent, in 1991, although Indian authors would be fond of underscoring its absolute importance. In distinction to Africa or Latin America, the problem of macrocephaly is less often evoked, except perhaps in West Bengal, where Calcutta comprises 20 per cent of the urban population. Nevertheless, India is not immune to the problems known in other large cities of the Third World. Calcutta (Racine, 1990), Chennai or Mumbai provide the best examples, but there are also the towns of medium-size in the decade 1951-1961 which have since then become cities (towns of more than 100,000 inhabitants). Between 1951 and 1991, their number increased from 71 to 300, and their total population grew from 26 to 140 million. The upper levels of the urban hierarchy have thus together increased in relative weight. Should the tendencies of the last decades continue to prevail, the disequilibrium in the urban network to the advantage of the large towns would have to follow. Moreover, this disequilibrium encumbers the developmental possibilities of the countryside, depriving it of the relays such as had earlier contributed to the success of the Green Revolution in the Punjab.

Small towns, with less than 20,000 inhabitants, thus occupy a weak and diminishing place in the Indian urban system. To the dynamism of the large town is opposed the decline of the small one. This fragility was already noted by A. Bose (1980) in his work, *Indian Urbanization 1901-2001*, the sixth chapter of which is entitled, "The stagnation of small towns 1901-1961." More recent works advance the same opinion. Reviewing the evolution of urbanization since Independence, R. Ramachandran (1991) notes the decline of small towns, the number of which decreased from 2345 in 1951, to 2020 in 1981, while their share in the total urban population fell from 32 to 19 per cent. This decline in relation to large towns can be tellingly expressed in terms of relative value. If, in 1901, the population of towns with less than 20,000 inhabitants was twice as high as that of towns with more than 100,000 inhabitants, the ratio, in 1981, had reversed and the small towns counted four and one half times fewer inhabitants. Following an urbanization model already encountered in Africa and Latin America, the very high growth of large towns erodes the base of the urban hierarchy, at the risk of seeing it disappear. However, the absence of two essential elements in this schema precludes its application in the case of India, namely rural exodus and macrocephaly. Consequently, the real causes of the disequilibrium evidenced in the census figures must be ascertained. We have shown elsewhere that, for south India, and most particularly the delta of the Krishna, this decline is to a large extent

explained by a reclassification of small towns (Leclerc, 1993). The decline in small towns, therefore, represents that of a supply which is not replenished. The emphasis of the problem has merely shifted. Is it only a question of statistical bias, or is the village network incapable of giving rise to new small towns in a position to replace those having grown to a higher level?

Before undertaking to respond to these questions, it should be noted that authors who have studied small towns offer a much more optimistic picture of the situation. K. B. Suri and P. Chellappan (1973) demonstrate that, between 1951 and 1961, small towns grew more rapidly than natural movement, which implies migratory movements in their direction. The growth of large towns is, on the other hand, overestimated by the most currently employed analysis in terms of size classes. Natural growth implies mechanically a strengthening of the upper groups. If one follows the destiny of each town over a span of several censuses, as have done M. Rakesh and P. Chandrashekhar (1982), the growth of large centres is seen to be much weaker. O. T. Buvanesvaram arrives at the same results in his thesis on small towns in Tamil Nadu. J. Véron (1987) extends this conclusion to all urban classes: "Neither the age of the towns, nor their size are discriminate in relation to growth rates." The question can, therefore, be legitimately raised: Are small towns on the decline? This question is all the more important as the National Commission on Urbanization recognizes an essential role for them in the harmonious development of the country, thereby closely approaching the theses of large international agencies as summarized in the remarks of R. Rondinelli (1983): "The functions of service, distribution, commercialization, sale, agro-industrial processing and others, of towns and small centres must offer a better basis for stimulating the growth and diversification of large industrial enterprises." This evolution, however, must be observed with great circumspection. Is this not a new rendering of "small is beautiful", the valorization of small towns only being inversely proportional to the difficulties in large towns?

The programme, "Study of the factors of stagnation and growth of small and medium-sized towns in the state of Andhra Pradesh (India)"

Centred on the lower rung of the urban hierarchy, its weaker link, a research programme under the direction of L. de Golbéry and financed by the Ministry of Research (1989-1991), "Study of the factors of stagnation and growth of small and medium-sized towns in the state of Andhra Pradesh (India)", was conducted at the University of Rouen within the LEDRA.[3] This was an approach differing from that followed by other French research programmes carried out during the same years by the CEIAS and the Orstom concerning "entrepreneurs in small and medium-sized towns in India." The latter was concerned with the median level of the urban hierarchy, with towns such as Rajsamund (30,000 inhabitants) or Jetpur

3. Laboratoire d'Etude du Développement des Régions Arides et Semi-arides.

(130,000 inhabitants). J. Racine and his group explored the retention capacities of populations at the village level (Racine, 1997). A common theme, however, appears with the latter geographical approach in south India pertaining to the mobility of populations, which we have attempted to detect in small towns, where it was not expected.

Our participation in this programme, in the form of a thesis in Geography, consisted in the verification of the most currently accepted hypotheses respective of the decline of small towns, namely:

1. The inability of these centres to retain migrant populations from the countryside, the latter preferring to seek out the large metropolises;

2. The weakness of their local role resultant of the direct influence exerted by the larger towns;

3. Their lack of urban character; with numerous observers suggesting a ruralization of large towns, this phenomenon should be more acutely manifest in small agglomerations.

Andhra Pradesh was chosen as the field of study because it is one of the very few Indian states, along with Karnataka, to have implemented an administrative decentralization, the mandal reform, which began in 1984 and is still in force today.[4] The mandal reform thus marked a redistribution of the function of administrative authority to the advantage of small towns, or indeed real villages, abruptly promoted to headquarters of administrative divisions. This reform, intended to improve rural development, is also indirectly a means of action against the decline of small towns by perhaps favouring the emergence of new small towns. Our problematic, then, is expanded by an additional theme:

4. The capacity of a political decision to impel the process of urbanization and revitalization of small towns.

The delta of the Krishna was chosen because of the abundance of data and the studies carried out by the University of Rouen since the 1970s. As the rural framework was well known through village monographs and analyses of agricultural development through irrigation, it was possible to bring out the original aspects by more specifically considering the world of small towns and migratory flows. The analysis of the decline of small towns also justified the choice of Krishna district as the research area. Having an urban population of 33.5 per cent, in 1991, 6.7 per cent more than the Andhra Pradesh average, we could hope to find there varying situations of growth and decline. The district, which includes the third-largest town in Andhra Pradesh, Vijayawada (838,944 inhabitants in 1991), could also provide the possibility to evaluate the influence of a city on its rural environment. Finally, this is one of the regions involved in the Green Revolution and, as such, it is a potential example of ascending urbanization. Of the 105 headquarters of mandals located in the two coastal districts of Guntur and Krishna, 12 were studied in detail by students and researchers from the University of Rouen within the framework of the research

4. Karnataka has since then abandoned this administrative division.

programme. Our own study focused on 40 of the 50 mandal headquarters in Krishna district (cf. Figure 4.1).

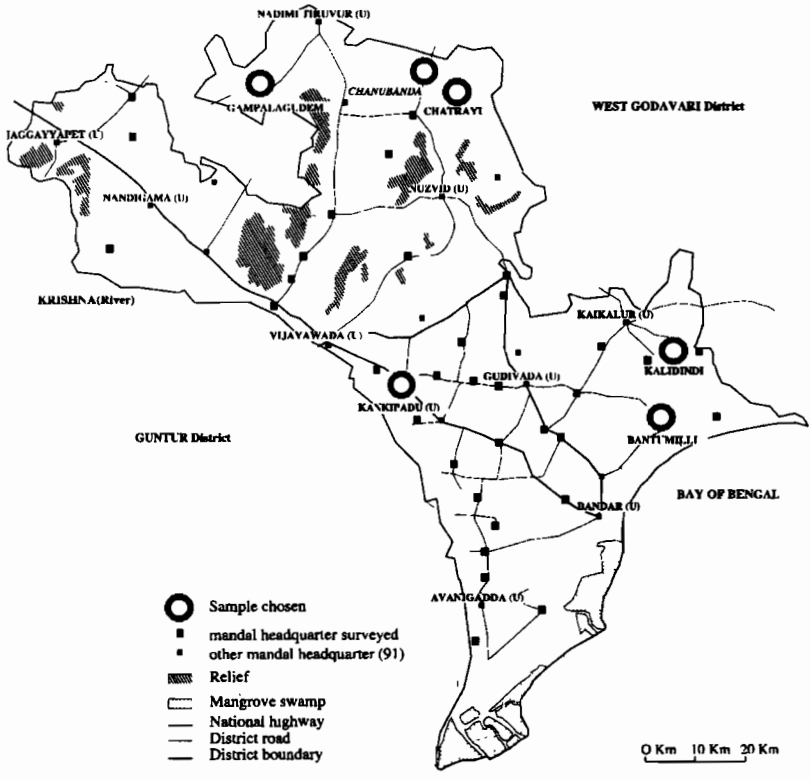


Figure 4.1: Krishna district (Andhra Pradesh)

The ten other headquarters, corresponding to towns of too great a size (above 20,000 inhabitants) to be included within the framework of our study, were eliminated from the sample. The themes of administrative and commercial activities and their dynamism constituted the privileged axes of this district-wide analysis. At the conclusion of an initial survey undertaken in each of the headquarters, in early 1991, six were chosen for detailed study. Two of these towns were assigned to master's degree students, who pursued survey and sampling procedures identical to ours in the four remaining headquarters.

The criteria employed to choose the six centres were the size of the headquarter, the administrative situation, the position in the urban network, the surrounding agricultural system and the conspicuous dynamism. The two small towns studied in early 1991 by the master's degree students, Bantumilli and Gampalagudem (cf. Figure 4.1), counted 6,000 (1991)

inhabitants. The former, which had already been made a taluk headquarter[5] in 1981, was initially surprising because of its development. The second was chosen in an inverse situation, as much from the point of view of the agricultural system —highlands rather than delta—, as from the vantage of conspicuous dynamism. The four remaining small towns, for which we were responsible, completed the different urban levels of the sample, with two centres of 3,000 inhabitants (Chatray and Chanubanda) and one of 12,000 (Kankipadu). The final small town to be chosen, Kalidindi, counted 13,000 inhabitants in 1981, distributed over eleven hamlets because it is located in an area of scattered settlement. The town was chosen by reason of its localization in a zone of high demographic growth and agricultural dynamism, with a considerable and rapid development of pisciculture, which adds a degree of diversification to the activities of a region dedicated to intensive rice-growing (double harvest). Kankipadu retained our attention through its classification as town, according to the census criteria (there were three in our sample), and its localization in proximity of Vijayawada (840,000 inhabitants in 1991), offering the common situation of the competition of an urban centre with a larger town. Located fifteen kilometres from Vijayawada, the economic capital in the delta, Kankipadu is an old town situated both in the vegetable-growing ring of the metropolis and in the sugar cane region around the sugar mill in Vuyyur.

In 1992, the research programme was geographically re-centred on the district of Guntur (south bank of the Krishna). Five specific themes added to the knowledge of the urbanization process in these small towns: health, trade, education, utilization of water resources, socio-professional mobility. This research was complemented by an analysis of public capital flows from the small towns to their rural hinterland based on the study carried out by the Integrated Rural Development Programme in the entire district of Guntur. The coherence of the analysis of the twelve small towns in the Krishna delta is supported by the common collection of information by means of family surveys. All of the themes taken up, as well as the specificity of each study, are summarized in Table 4.1 below.

The polarization of rural space by the small town

The results of the research programme largely exceed the framework of this article, and so we have privileged the thematic of the decline of small towns. By choosing the headquarters in the mandals considered as villages, we freed ourselves from the statistical bias introduced by the census definition of town. We were thus in a position to consider the phenomenon of the emergence of new small towns. The context was all the more favourable in Andhra Pradesh as the decentralization of numerous services through the reform of the mandals should increase the attractive force of new headquarters. Was the area of influence of the headquarters increased by

5. The administrative subdivision preceding the mandal which constitutes the present system in all the other Indian states.

favouring the dynamics of all activities? Before analyzing the energizing effect of this political decision, it was necessary to replace the small towns in the functioning of the urban network. Their decline makes them comparable to simple village relays in an ascending relationship. We shall study here the daily movements of the labour force in order to verify this hypothesis.

Table 4.1: Activities of outside residents

	Kankipadu (number)	Kalidindi	Kankipadu (per cent)	Kalidindi
Animal husbandry	1		1.6	
Cottage industry	11		17.5	
Industry	2	6	3.2	16.2
Repair work	5	5	7.9	13.5
Secondary	18	11	28.6	29.7
Construction materials	2		3.2	
Labour contractor	1		1.6	
Construction	3		4.8	
Business	1		1.6	
Standard goods	5	10	7.9	27.0
Intermediary products	12	7	19.0	18.9
Rare goods	3	1	4.8	2.7
Restaurant	4	3	6.3	8.1
Trade	25	21	39.7	56.8
Transport	1		1.6	
Health services	2		3.2	
Financial services		2		5.4
Personal services	5		7.9	
Others	8	3	12.7	8.1
Service	15	5	23.8	13.5
Total	63	37	100.0	100.0

Small towns which attract a labour force from outside

Labour migrations to the small towns were ascertained by means of an exhaustive enumeration of non-agricultural activities in the four chosen centres: Kankipadu (12,003 inhabitants), Kalidindi (17,003), Chatray (3,977) and Chanubanda (8,451). The place of residence of the entrepreneur enabled us to assess the attraction exerted by the headquarters in terms of trade and services. Such outside residents are nearly non-existent in the two smallest centres, Chatray (4) and Chanubanda (7), but their number increases to 37 in Kalidindi and 63 in Kankipadu. However, these figures underestimate the actual situation, for they only take into account the heads of enterprises, and not the employees; there are, furthermore, very mobile activities to be added: numerous producers come from the surrounding villages to deliver milk to regular clients, or to sell their fruits and vegetables door to door, and there are also providers of small services, for example knife grinders, who do the same. Our enumeration concerns only the permanent establishments and the mobile activities as they were encountered.

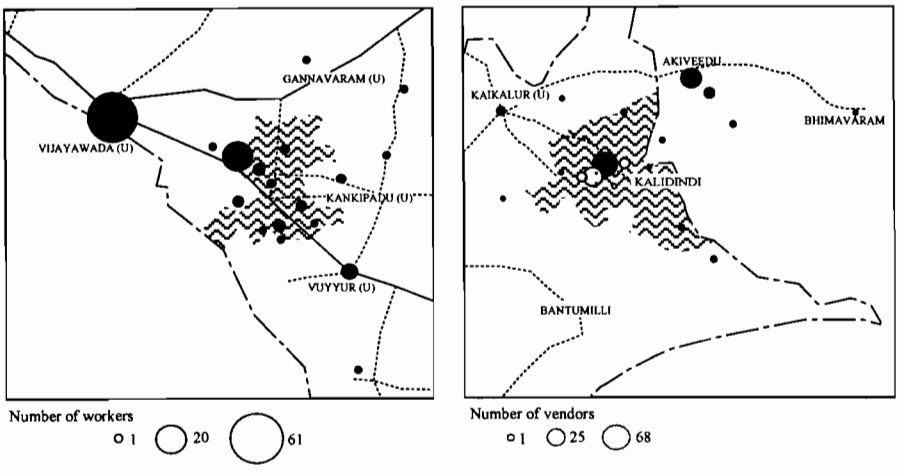


Figure 4.2: Origin of workers from outside in Kankipadu and Kalidindi

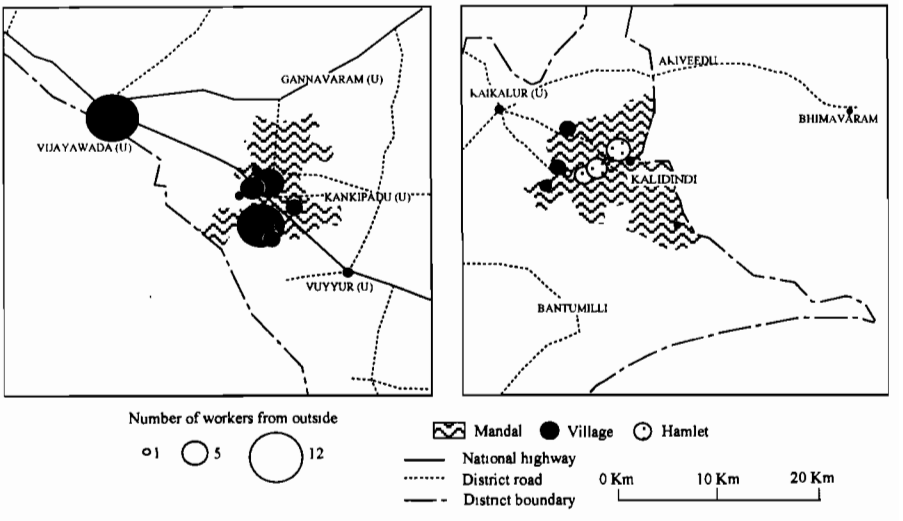


Figure 4.3: Workplace of Kankipadu residents working outside

Figure 4.4: Origin of vendors on Kalidindi market

Table 4.2: Towns and topics selected for the LEDRA programme on urbanization

Themes	Krossur	Gampalagudem Bantumilli	ChatrayChanubanda Kalidindi Kankipadu	Pidugu-ralla	Amaravati	Amarthalur	Pedanandipadu	Karempudi
Exhaustive surveys of the population								
rapid household surveys	1309	1566 +1228	682+880 1518+2878		2047	1725	1175	2319
Demography								
Migration								
Society								
Intensive sample surveys								
Mobility								
In-and out-migration								
Economic integration								
Shuttle migrations								
Educational system								
Commercial dynamics								
Evolution/ distribution								
Range								
Administrative dynamics								
Administrative range								
Industrial dynamics								
Socio-professional mobility								
Access to water								
Health system								

Bibliography: Clément (1991), Jaffrelot (1992), Boof (1992), Duménil (n.d.), Leclerc (1993), Rihouey (1993), Couillet (1993), Patry (1993), Brisset (1995), Hamon (1997), Ogier (1994).

The small towns exert an attraction first by their commercial potential. Outside residents are engaged in commercial activities in 57 per cent of the cases in Kalidindi, as compared with 40 per cent in Kankipadu, where the range of activities is wider (cf. Table 4.1). In the two small towns, the craft industry verges on 30 per cent, which confirms the preceding tendency, the craft industry being extended by the direct sale of the manufactured products. A more extensive analysis of the activities practised, however, shows varied urban profiles. In the production sector, Kankipadu attracts artisans (17 per cent from a total of 28 per cent) who can find there a larger outlet for their production, whereas small entrepreneurs (16 per cent) settles in Kalidindi, primarily in the agro-food industry. Much more recently, Kalidindi, a truly flourishing town, has witnessed the concentration of more mechanized production. This characteristic is also found in the presence of two pawnbrokers among the outside residents. This is remarkable as loaning supposes a good local implantation to obtain repayment in case of difficulty by way of social pressure, or indeed, threats. On the other hand, in trade, the

situation is reversed. In Kalidindi, the outside residents sell standard goods, while in Kankipadu, it is a matter of intermediary products, trades not found in the villages. If vendors of standard goods do not appear in Kankipadu, it is because there is a permanent market controlled by local intermediaries. A chain of distribution is developing, which does not yet exist in Kalidindi, in which rural producers or distributors are being supplanted.

In summation, two urban profiles are taking shape: Kalidindi is a place of privileged investment for the rural inhabitants of the surrounding area, whether in small-scale industry or pawnbroking, and small traders still find there a place; whereas Kankipadu reserves access to well-to-do tradesmen who cannot exercise their activity in their village because of a lack of consumers, which does not exclude outside investments of a greater order (the two cinemas). In both cases, the outside residents commute from a limited radius of five kilometres (cf. Figure 4.2), which can be covered on foot or bicycle, equivalent to the radius of activity of rickshaws and tongas (horse-carts). Beyond these limits, the cost and time of transport would make the movement prohibitive. In Kankipadu, however, the outside residents originate from a greater distance than those in Kalidindi. They come from within a circumference extending to Vuyyur (10.5 km) in the south and to Vijayawada (15 km) in the north. These entrepreneurs living in towns from medium to large sizes have very heterogeneous professions and, except for a few activities, correspond mostly to a high-level of education (medical doctor, advocate), or belong to a high-capital modern sector (proprietor of a cinema, of a service station, vendor of alcohol, fertilizer or jewellery). The direction of investment is here from medium to very large towns towards the small towns, made possible in Kankipadu by the proximity of Vijayawada and the existence of an important trunk road. These smaller towns are in a position to give rise to shuttle mobility from the neighbouring countryside, as well as from a number of larger towns. Situated in the orbit of a city, Kankipadu attracts some city dwellers who find there a professional opening. It remains to assess the reverse job flows in order to evaluate the situation.

Small towns which export their labour force

We avail of another source, an rapid but exhaustive survey of all households, to ascertain the places of activity of the inhabitants of the two small towns. The two sources are not quantitatively comparable, as the second covers all the heads of families, employees and entrepreneurs. Here again, some of the movements are neglected because the question regarding the place of activity only concerns the household head and not all its members. Kalidindi was not retained because the eight cases recorded had no statistical value. On the other hand, there were 122 in Kankipadu, and we thus compared the activities exercised by the two groups: residents and workers from outside (Table 4.3). It is noted that the profile of activities is radically different. The two types of movement are thus not of the same nature and do not counterbalance each other. Thus, trade is given up for the sake of transport and services. Only four inhabitants of Kankipadu are

engaged in trade outside the small town. In their place, hawkers operate on bicycles, touring the region around Kankipadu, in particular to provide the kiranas (grocers) and tobacconists with, among other goods, biscuits and sweets made in Kankipadu. However, these hawkers could not be recorded because of their great mobility.

In the production sector, the activities differ radically between residents and workers from outside. The inhabitants of Kankipadu find employment almost exclusively in industry, and not cottage industry. They are for the most part employed at the textile mill in Ganguru, six kilometres away in the direction of Vijayawada, or at the cane sugar mill in Vuyyur, thus in large-scale industry. The textile mill is actually located in a rural milieu and avails of no free or subsidized accommodation, obliging the employees to live in the surrounding villages or, in some cases, to increase the distance from residence to work when they prefer to live in a small town. A large colony of employees of the APSRTC,[6] from drivers to ticket inspectors and mechanics at the depot, explains the significant role of transport in the distribution of activities. Travelling gratis on the bus network, they have chosen to live in Kankipadu rather than in Vijayawada in order to save money on rent and to profit from the tranquillity of the small town, according to their statements. The professions also diverge in the domain of services. Teachers and bank employees are numerous. These lower civil servants and similar categories prefer Kankipadu to their village postings. Although Kankipadu is far from offering all the advantages of the large town in terms of leisure activities or consumer goods, it assumes a position above the surrounding villages. The attitude of these state employees regarding the choice of their place of residence concurs closely with that of the textile workers.

Similar to the outside residents, the strategy of the workers from outside is twofold. Some have settled in Kankipadu but work in medium-sized to large towns, while others have made the same choice as to residence, but because they work in the villages. Transport remains the major constraint on all of these movements. The most distant places on the two maps concerning Kankipadu are all in proximity of a road and are served by a bus line. Although the two maps cannot be compared in quantitative terms, it can nevertheless be seen that the area of the workplaces is greater, some ten kilometres in radius, and more homogeneous than that of the domiciles of outside residents (cf. Figure 4.3). With Vijayawada, the equilibrium of exchanges is restored, which contradicts the thesis of the complete subordination of the small town to the large town. Above all, the area of shuttle movements, centripetal just as well as centrifugal, indicates a certain polarizing force of the mandal headquarters. Although the influence of large towns extends to the countryside, it has not brought about the disappearance of the influence of some small towns. Kankipadu is a centre of significant centrifugal and centripetal movements of the labour force. If the centripetal movements are in part determined by the proximity of Vijayawada, which the commuters avoided because of its high cost of living, the movements of the lower state employees owe nothing to it. The simple model of an

6. Andhra Pradesh State Road Transport Corporation.

ascending relationship and of a subordinate situation of small towns is not verified in this coastal district. The small towns reproduce on their level a polarizing effect on the labour force, which distinguishes them from the villages. This effect was seen in both the trade and service sectors.

Small towns which animate their rural hinterland

We have selectively evaluated the area of commercial and administrative attraction exerted by some to these small towns. Thus, in Kalidindi, we conducted a survey of vendors at the daily market which includes vendors of fruit and vegetables, of meat and fish, to whom are added a few retailers of manufactured products (children's garments, plastic items and inexpensive jewellery). This locally significant market had on the day of our survey 171 vendors, of whom 43 per cent were from places outside Kalidindi (cf. Figure 4.4). The area from which they come extends over a radius of some twenty kilometres and is therefore larger than the area of outside residents, the market representing only a periodic activity. The attraction area of the market extends from west to east according to the organization of the lines of communication, with a high proportion of vendors from the neighbouring district of West Godavari, namely one third. The town of Akiveedu, with 43 vendors (25 per cent), is a reflection of these privileged relations. It prevails over the former taluk headquarter, Kaikalur, which is closer. These relations with the Godavari delta are very old, for in the 18th century, Kalidindi already depended on the Dutch "factory" at Pallikollu (West Godavari) for its textile production, and not on Machilipatnam, the present headquarter of Krishna district.

Examples drawn from the works of other researchers confirm our observations in Krishna district. The commercial attraction of small towns is exerted through the services offered, among which is education. Y. Jaffrelot (1992) has already noted in the instance of Krossur that the share of the students who are not from small towns is significant: 475 out of 1551 (total number of pupils in 1990), that is, 30 per cent, the proportion increasing with the level of education. For secondary school and above, students from outside, who are often boarders, number 328, or 54 per cent. The map accompanying this data[7] shows a recruitment area with a 10-kilometre radius, while secondary school students come from places that are more distant. C. Patry (1993) observed the same realities in Pedanandipadu where 25 per cent of the students at the public college are not from the small town; for the secondary level and first and second years of university, the radius of attraction (Figure 4.11) is 25 kilometres. She also notes that the staff at these establishments are also recruited from outside the small town and do not reside there (10 out of 12 teachers at Pedanandipadu College).

7. Jaffrelot (1992), p.38, map 10.

Table 4.3: Comparison of activities exercised by residents and by migrants (Kankipadu)

	Resident number	Migrant number	Resident per cent	Migrant per cent
Animal husbandry	1		1.6	
Cottage industry	11		17.5	
Industry	2	30	3.2	24.6
Repair work	5	4	7.9	3.3
Secondary	18	34	28.6	27.9
Construction materials	2	2	3.2	1.6
Construction worker Labour contractor	1		1.6	
Construction	3	2	4.8	1.6
Industrial commerce		1		0.8
Business	1	1	1.6	0.8
Standard goods	5	1	7.9	0.8
Intermediary products	12	1	19.0	0.8
Rare goods	3		4.8	
Restaurant	4		6.3	
Trade	25	4	39.7	3.3
Transport	1	34	1.6	27.9
Communication		2		
Transport/ Comm.	1	36	1.6	29.5
Health services	2		3.2	
Educational services		15		12.3
Financial services		7		5.7
Personal services	5	1	7.9	0.8
Others	8	21	12.7	17.2
Service	15	44	23.8	36.1
Industrial coolie			2	1.6
Total	63	122	100.0	100.0

In his study of Gampalagudem, a small town in the highlands of the district, P. Boof reviewed the registers of the different educational (a boarding school for Dalits and one for backward castes) and health (hospital and veterinary centre) institutions to ascertain the place of residence of students and of customers. The area of attraction of this small town of 7300 inhabitants is approximately 8 kilometres. It extends well beyond the limits of the mandal in the case of certain services, such as boarding schools or maternity homes. These comparatively restricted areas of attraction correspond, however, to very intense relations. Not withstanding the necessary precautions in the matter of utilizing administrative data, the veterinary surgeon receives 220 peasants each month. These areas of attraction are added to the movements of the labour force and of goods to form close relations between the headquarter and its mandal. In the case of Gampalagudem, the area of commercial attraction is less than the areas of administrative services, which suggests that in certain cases the public service sector exerts an impelling force on private commercial activities.

Conclusion

These small towns are, therefore, not subject to the irremediable decline, which would result of the direct competition of large towns. From this point of view, the small towns are rather indispensable relays in the circuits of commercialization, as is evidenced by the dynamism of these activities. They provide to the local population, at a distance of a few kilometres, that is, a return journey within half a day, goods and services which dispense with a bus journey to the large town. The businesses are thus in part the property of the rural people who maintain their residence in their native village. The small town is accordingly an element in their economic strategies. Conversely, urban residents, and, in particular, numerous minor government employees occupying posts in villages, elect to reside in the small town and undertake daily moves to the workplace. Frequently described in large towns, these movements also exist in small towns. They indeed belong to the urban world, as they possess ways of functioning on a scale commensurable to their size. The phenomenon of decline, although often noted when one relies only on data from the Census of India, is invalidated in our region and, in all probability, elsewhere in India.

We have shown in another place[8] the inconsistency in the official definitions of the urban phenomenon in India, but they must not be neglected, for most of our "small towns" are not even taken into account in the analysis of urbanization, coming as they do under the category of "village" in the census. The example of Piduguralla, a "village" of 35,040 inhabitants in Guntur district, is indicative of this underestimate.

The analysis of Indian urbanization cannot rest content with a extensive definition (population threshold, density and share of non-agricultural activities), without neglecting a major part of this process which takes place on the lower levels. It is necessary to arrive at a comprehensive definition of the town[9] so as to ascertain the roles of all levels in the production of urbanism in India, and thus go beyond the mere "balance of profits and weaknesses of intermediary urban centres", which Burgel (1995) derides.

8. Leclerc (1993), pp.42-47.
9. Retaillé (1997), p.85.

5

Urban Growth and Village Roots in India

Frédéric LANDY and Jean-Luc RACINE

The nation with the third highest population in the world, the United States of America, has more than 260 million inhabitants. Indonesia, the fourth, touches almost 200 million. Between these two, it would be possible to place urban India, where city-dwellers numbered 217 million according to the Census of 1991. However, this figure should not blind us to the still mainly rural character of India, where 74 per cent of the population lives in the countryside. So rather than stressing rural exodus over much by dealing with the Indian modes of urbanization, it would be better to dwell on the other mobility strategies made use of by country-dwellers, as well as on village roots, which still retain their strength. In conclusion we shall attempt to suggest a few factors that explain this relatively low degree of urbanization, which is characteristic of many Asian countries.

An apparent paradox

The urban population of India is greater than the entire population of Western Africa, greater than the total population of Brazil, Venezuela and Peru combined. In 1991, Mumbai had more than 12.5 million inhabitants, and Calcutta 11 million. Five per cent of these city-dwellers are homeless or live in temporary structures (*kutcha houses*). Between 38 and 42 per cent of the inhabitants of the four biggest cities live in slums.

Nevertheless, in 1991, 74.3 per cent of the population was still rural. The eternal difficulty of dealing with percentages and absolute values! The raw figures encourage a pessimistic view of "galloping" urbanization, to use the fashionable adjective. However, the comparative values highlight the continuing power of retention of the rural areas. The rate of urban growth

remains high (+3.1 per cent per annum in 1981-91), but it is no longer increasing, and has even declined slightly[1] (Figure 5.1). The countryside on the other hand has doubled its population over 40 years (still + 1.8 per cent per annum in 1981-91) thanks to its natural growth—even though the share of the rural population fell by 2 per cent in the same period.

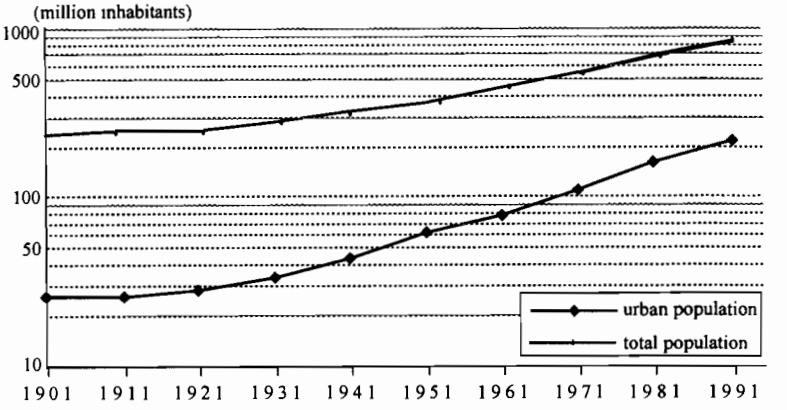


Figure 5.1: Urban population and total population (1901-1991)

Figure 5.2 is revealing in this respect. In the period 1981-91, the portion of urban growth accounted for by rural immigration is no more than 21.7 per cent. It has certainly increased from the periods 1971-81 (19.6 per cent) and 1961-71 (20.9 per cent), but remains very low. Four-fifths of urban growth are still accounted for by other factors, above all by the natural increase of city-dwellers (58 per cent in 1981-91). The impact of reclassification of former rural areas to urban ones is lower (17 per cent), as is the role of the natural increase of intercensal migrants (3.3 per cent).[2]

The factors explaining the slowing down of urbanization may be listed (Visaria and Visaria, 1994): fewer reclassifications of rural areas to urban ones;[3] an increase in commuting, due to improved transport facilities;[4] the

1. + 36 per cent in 1981-1991, as against + 46 per cent in 1971-1981.
2. The "residual" factor in this figure covers "errors and changes in administrative boundaries" (Visaria and Visaria, 1994).
3. Some small towns are even trying to return to the rural category, in order to benefit from certain fiscal advantages. Let us recall that in India a urban area is defined as a settlement of more than 5,000 inhabitants in which at least 75 per cent of the male working population is engaged in occupations other than agriculture, and which has a density of at least 400 inhabitants per square kilometre. To this must be added, the Census states without irony, "all places which, though not satisfying the above criteria, had pronounced urban characteristics."
4. In 1971 25 per cent of Indian villages were connected to a pucca road; in 1988 the figure was 41 per cent (Krishnan, 1993) and 48 per cent in 1994. It can also be imagined that the provision of electricity to villages and improved water supply have made the countryside more attractive, not only to live in, but also for new non-agricultural activities. (see Guetat-Bernard, in this volume).

high cost of urban living; a more rapid decline in death rates in rural areas, which makes the rural natural increase (2.1 per cent) higher than the urban one (1.6 per cent); and a general development in rural areas.[5]

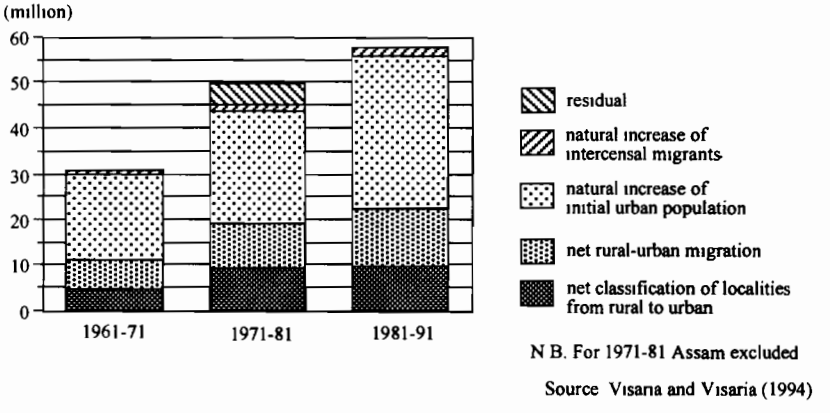


Figure 5.2: Components of urban growth (1971-91)

This leaves the main point still unexplained: why, when a great part of the former "Third World" has experienced massive urbanization since the 1950s, has India, along with some other countries, remained untouched by this process? It appears as if urbanization has affected only a small portion of the rural population; the term "rural exodus", coined in 1892 to describe the situation in England at the end of the 19th century, could not be less appropriate here. In fact, the Indian countryside seems something like a sponge, from which only the excess drips out, but which nevertheless remains full.

Figure 5.3 certainly bears witness to a complex situation: along with a certain dichotomy between the north (mainly rural) and the south (more urban) of the country, the presence of big cities accounts for the high level of urbanization in some states (such as 39 per cent in Maharashtra). However, the fact remains: in no large Indian state do city-dwellers constitute the majority.

5. G. Krishnan notes that since 1951 there has been an inverse relation between the rate of urban growth and that of agricultural growth, because the latter creates rural employment. Government intervention may also have had some positive results, as in Andhra Pradesh where the new administrative powers granted to large villages made into mandal headquarters have frequently had a multiplier effect (Leclerc, 1993).

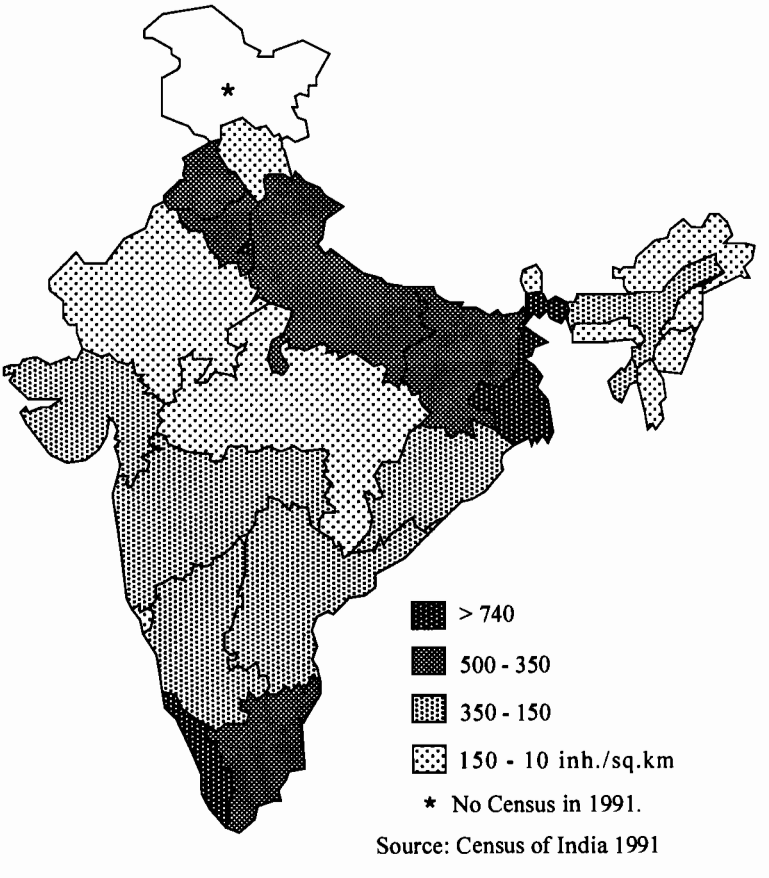


Figure 5.3: Population density (inhabitants per sq. km.) in 1991

Above all, the map showing levels of urbanization is very different from that giving average densities (Figure 5.4): thus the Ganges valley, although so densely populated remains predominantly rural; while Figure 5.5 illustrating the difference in growth rates between urban and rural populations, gives no evidence of any "catching up" for this region.

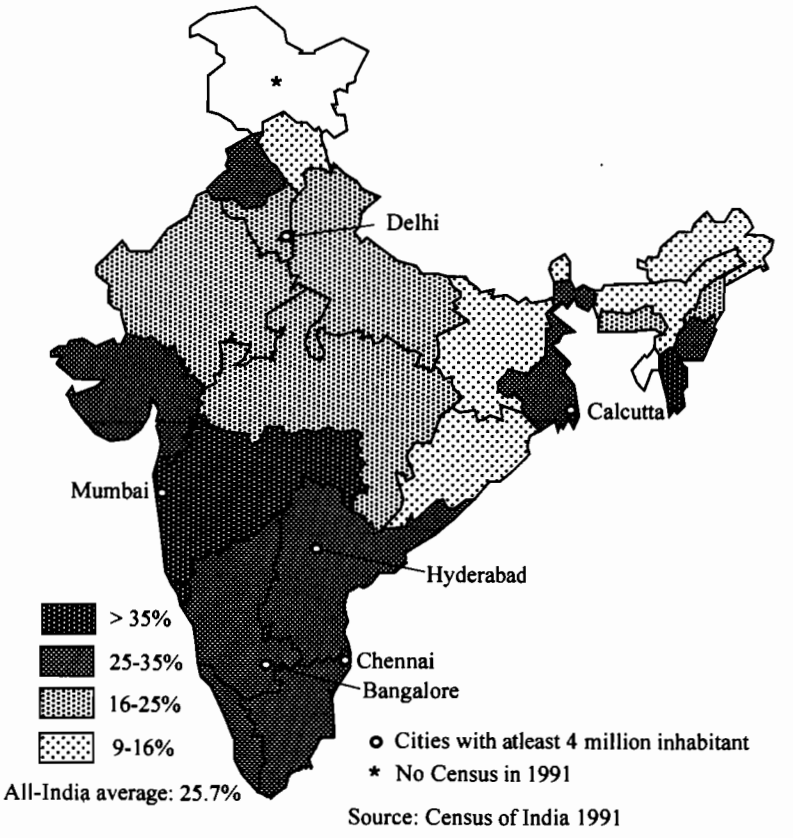


Figure 5.4: Rates of urban population in 1991

Most country people remain in the countryside

Most migrations are not from rural to urban areas

To explain how three-quarters of India remain rural, it is necessary to mention all the different types of outflow from villages (cf. Figure 5.6).

It can be seen that migrations from the countryside to towns represent only 16 per cent of all the intercensal migrations in 1971-81. Movement in the opposite direction, from town to country, is not insignificant (6 per cent); but most of the flow (65 per cent) is from rural to rural. Therefore, the reason that the rural population remains rural is not that country people do not migrate; but that for the most part they migrate to other rural areas.

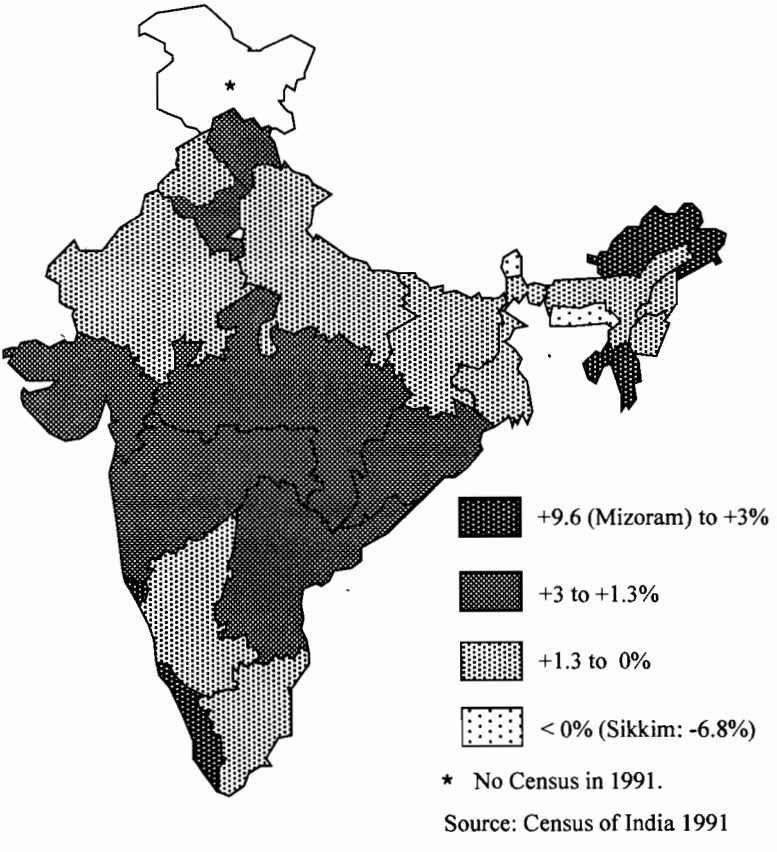
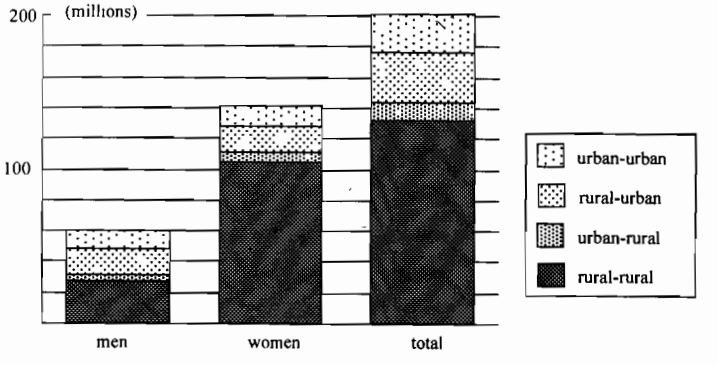


Figure 5.5: Urban-rural growth differential 1981-1991

Let us however beware of drawing too many conclusions at the level of the population as a whole: it is important to distinguish between the sexes. In fact, 73 per cent of all female migrations are connected with marriage — which is usually virilocal in India. It can even be said that in India, if both sexes are taken into consideration, a majority of migrants (51 per cent) is young brides. Since most rural women marry rural men, the situation appears in a rather different light if we consider only male migrations: then movements from country to town account for 28 per cent of all migrations, and those between different rural areas for less than half. The trend is clear, however. In the absence of large-scale migration from countryside to towns, urban dwellers, who constituted only a fifth of the population in 1971, still represent only a quarter in 1991.



Source : Census of India. Excluding international migrations.

Figure 5.6: Migration between 1971 and 1981

Modes of rural retention, a multifaceted phenomenon

Many inhabitants leave their native villages, it is obvious. Still we should take a look at the different strategies which all in some way serve as an alternative to "rural exodus" in the real sense of the term —that is, migration that empties the countryside in favour of cities and towns.[6] The most important of these alternatives involves the numerous commuters who, despite deficiencies in communication and public transport networks, travel every day to work in towns, while living in rural areas. At Jetpur, a medium-sized industrial town of 120,000 inhabitants in Gujarat studied by Dupont (1995), some commuters start from as far as 32 km away. In the five villages covered by her household survey, all situated within a radius of 8 km of Jetpur, 35 per cent of all male workers are commuters. This means that a good part of the economic growth of the city, which is based on textiles, does not get expressed in a corresponding demographic growth, but on the contrary by retention of a portion of the workers in the surrounding countryside. These people save the cost of accommodation in town. Their families, by being able to keep control of these individuals and save them from the problems of adapting to life in town, also benefit from this delinking of workplace from place of residence, which may affect almost half the employees of certain firms.

Similar journeys between town and country may take place not on a daily but a seasonal basis —also avoiding permanent residence in towns. V. Fievre (1996) has shown this in the case of seasonal migrants who go to Coimbatore (Tamil Nadu) to work on construction sites: these workers have no wish to integrate into the urban environment. Although paradoxically they are somewhat privileged compared with their city-dwelling colleagues (as a docile—and debt-bound—labour force they are assured of a certain

6 . For a more complete treatment, reference may be made to Racine (1997).

job-security during the dry season that they spend in the city), it is "the site and not the city" that forms their geographic and cultural frame of reference. The cultural codes which they have taken up for a time during their stay (drinking, fewer visits to the temple, less bathing—in short a spiritual and temporal lowering of standards) will be forgotten with the rains when they leave for their villages and return to their original rural customs. It is understandable that J. Breman (1985) prefers to speak of "labour circulation" rather than "migration" in referring to the tribal labourers who, also seasonally, leave eastern Gujarat to work in the irrigated western plains of the same state.

In fact, migrations between different rural areas are of considerable significance, as we have seen, even if we disregard migrations due to marriage. These may be seasonal, the most numerous being those in which low-caste villagers, Dalits or tribals leave their homes in Bihar or eastern Uttar Pradesh, where they own no land, to work as day-labourers in the prosperous irrigated villages of the western Gangetic plain. Although they are exploited by unscrupulous middlemen, ill-treated and bound by debt, and do not always receive their wages, nevertheless a whole population sets off each year, attracted by the wages, or maybe an advance paid by an agent. In the Punjab and Haryana the Green Revolution has led to the permanent farm-hand being replaced by seasonal labourers, and local labour by workers from outside the area (Joshi, 1987, p.16). Although the harvesting schedules are rarely complementary in the areas of origin and arrival, probably 10 million people, counting women and children, set off each year to harvest wheat and transplant paddy in the Punjab, to pick coffee in the Ghats, or to cut and crush sugar-cane in irrigated pockets of the Deccan (Racine, 1997).

If a plot of land is available for cultivation, or at least enough to build a house on, these migrants may settle permanently. But this requires that the target areas can provide year-round work (effective irrigation) and are short of labour (recent irrigation),[7] and that the migrants are able to build a house for themselves: either by their own economic resources (like the Kamma immigrants to Andhra Pradesh who have bought land newly irrigated by the Tungabhadra from local people), or because of governmental action, supplying "colonies" on requisitioned land for landless immigrant labourers (Landy, 1997). Only then will a few take the risk of selling whatever small property they may own in their unirrigated native village, choosing to live in future as wage-earners with a relative guarantee of employment, rather than remaining there, independent but without employment for two thirds of the year.

To close let us mention the unfortunately too rare situation of repatriation, in which capital and often people return from the town back to the countryside. Around Coimbatore, for cotton-spinning and the manufacture of irrigation pumps or textile machinery, many villages have benefited from urban investment by entrepreneurs, who in many cases

7. Jan Breman for his part adds that migrations are encouraged "not in order to satisfy a shortage in the area of destination but in order to create a surplus" for preventing any rise in labour-costs (p. 334).

belong to a family of large landowners in the same village, and who want to take advantage of the tax incentives introduced to encourage rural industrialization, low land prices and labour costs, while escaping from the overloading of urban infrastructures—and at the same time demonstrating their loyalty to their native village (Schar, 1992). A similar kind of relocation, which permits a diversification of rural activities and as a consequence helps to retain rural population, is also found in the rural diamond-cutting workshops set up by the Kanbis of Gujarat: "in this case the function of the town is strictly limited to the training of one generation, which acquires a qualification and establishes networks. Once the apprenticeship is over and contacts made, the migratory flow is reversed: away from the town, back to the village" (Dupont and Lelièvre, 1993, p. 477).

Migrations to towns reveal complex considerations

Departures from the countryside for the town do take place, however. But what a diversity! First of all, in the lengths of stay: there are daily or seasonal movements, as we have seen, but also migrations that last a number of years, or a whole lifetime. Then there are many different motives for migration: the main ones are economic, connected either with a very critical situation in the village (the *push* phenomenon), or with some attraction in the town (*pull*), or often with both: while poverty in the village may be a necessary precondition for a migration, it is never sufficient in itself. Similarly, the attractions of the city form the sole factor only in the case of graduates who go away to town in order to continue their studies or take advantage of their educational qualifications.

An analysis of migrations according to the push/pull paradigm alone would soon reveal its limitations (Dupont and Guilmoto, 1993). In fact, when we start to examine different kinds of migration, we discover the inadequacy of a classic cost-benefit analysis at the individual level. It is only by investigating higher levels that the aim, the actor, the destination and the duration of the migration can be understood.

First, there is the level of the family, or rather the farm: whether the family is a nuclear or a joint one, it represents the primary decision-making level. The individual who disregards its choice will be considered a rebel and risks finding himself quickly cut off from his immediate social environment, which provides essential protection and support. As a rule, it seems as if a family decides to send one or more of its members away as migrants, in order to enable the rest to remain in the village. Having one mouth less to feed, and perhaps an additional income from the town, is sometimes enough to make sustainable a small holding which otherwise would not have been. In this kind of case the migration is usually long-term; it may be much shorter if the objective is more limited, connected with a particular event in the history of the farm, such as the purchase of a motor cultivator, or payment of a dowry for the migrant's sister. However, the length of a stay in town is always uncertain, dependent on the work found, or the migrant's success in adapting. Hence the need for *post facto* analyses of

migrations to establish lengths of stay, after the original motive for leaving may have been forgotten or altered.

The importance of the familial level is accentuated by the possibility of hybrid forms, something between a nuclear family and a joint one, what T.S. Epstein (1973) has called a *share family:* the migrant lives in town, but his income and expenses form part of the shared budget of the family property.[8] As a way for the migrant to "guard his rear" in the village and for the family to keep control of all its members, the share family is an adaptation to a type of rural economy that is increasingly oriented towards the town. From this it is clear that on properties of similar size, a single son will be less inclined to emigrate than a man who has one or two brothers living in the village —even if these brothers are living on separate farms. The presence of such close relatives will be a guarantee that the migrant's land will be farmed in his absence, and that his wife and children will be cared for if he leaves without them. On the other hand, for an only son, migrating will mean leaving his land in the hands of outsiders, or even —a more unusual case— selling it, which is to say, taking an enormous risk. The security of having a big family in the village, far from encouraging someone to stay at home, is very often a factor in making him decide to leave.

This helps us to understand the somewhat misleading situation of migrants living on the pavements of Old Delhi (Dupont and Tingal, 1996; and the chapter by Dupont in this book). Far from all being uprooted drifters, most of these people are engaged in strategies aimed at maximizing remittances to their native village, by reducing expenditure on accommodation and transport while remaining close to market places for day to day employment.

Moreover, the family level in which the individual is embedded is only a terminal segment of a wider structure of caste or class. These higher levels also influence the type of migration: when young graduates leave for town this may be partly determined by class (they are often children of prosperous landowners), but perhaps also by caste: Dalits, who benefit from scholarships and reserved places in educational institutions, often follow the same routes as wealthy high-caste young graduates, especially as they are becoming increasingly aware of the advantages of investing in education. In certain areas, it is already a long time since the Brahmins, for whom education has always played a big role, decided for the town and sold their land. More recently, Muslims, a rural minority which is often landless and engaged in trade, have begun to migrate, also with no intention of returning.

In this way, it is at the level of the caste —rather than of class— that the segmentation of migratory streams, which is one of the characteristics of population movements throughout the world, gets determined. A particular caste in a Karnataka village might have a "tradition" of migrating to Bangalore to get catering work: one starts as a cleaner in a modest establishment but may end up as a waiter in a high-class restaurant, or even

8. Contrary to Africa, in India the farm, the family (in the statistical sense of "household"), the unit of production and the unit of consumption, are normally identical. "Share families" are in a minority.

as a cook. Another caste from the same village will work in Mumbai, a thousand kilometres away, in the transport sector: you start out as a porter in a terminus, but with luck, money and enterprise some manage to become bus or lorry drivers. Segmentation of localities and segmentation of activities: it is obvious that within this determinism, the individual's freedom of choice is strictly limited.

Such segmentation is at least equally visible at the village level. Let us take the example of a revenue village, Kuderu, in southern Karnataka, which consists of three hamlets. The first of these, Kuderu proper, is inhabited by middle-level castes, many of them big landowners whose income is based on dairy farming, or more frequently on dry sericulture (mulberry growing, raising silkworms, and spinning). Handicrafts and small industry, trade...: a diversity of rural activities, from which even the few Dalit families in the village benefit, far from all being extremely poor. A few hundred metres away lie the other two hamlets. Badaga Kuderu Mole, inhabited by smallholders or landless labourers, survives precariously by manufacturing ropes from agave fibres during the off-season. As for Tanku Kuderu Mole, where there are far less rope-makers, the life-belt is provided by seasonal migration, exclusively to one single irrigated village 70 km away, where hands are needed for cutting and crushing sugar cane. Why do 30 to 40 people from Tanku Kuderu Mole all go to this same village every year? Why does Badaga Kuderu Mole totally ignore this possibility of migration, when rope making does not bring in more than sugar-cane work? One might mention the role of advance wages, which sometimes connect labourers and employers from year to year and limit the migrant's freedom by obliging him to repay his debts. But more generally speaking, this specialization is produced rather by contacts and familiar channels. Thirty-odd years ago, a few pioneers from Tanku went off to that irrigated village and opened a migratory chain. From that time on, people have known where they are going, what they will do and what they will earn. Badaga tried a different source of additional income, viz. rope-making: it has its own network of traders, its own technical and commercial expertise. This village's specialization is just as "arbitrary" as seasonal migration in the neighbouring hamlet, but it is a reality which no one would think of contesting. This means that at the regional level there is something like a vast patchwork, a spatial juxtaposition of village patches specializing in agricultural activities (mulberry cultivation), non-agricultural ones (rope-making) or seasonal migration. This juxtaposition is defined by the rules of prudence: for one needs to have contacts to launch out into a non-agricultural activity that is synonymous with diversification.[9] In this light, determinism by caste or class seems much less clear-cut, an indication that here the most relevant unit of study is situated at the higher level of the village.

9. It would be important to retain the dynamic sense of process in the word "diversification", and not equate it with mere "diversity." Making rope at Badaga or migrating from Tanku are no longer today an act of "diversification", but on the contrary maintains a certain tradition of "diversity", that is a kind of conservatism.

All this is in no way unique to India[10] —and even less so the phenomenon of migratory segmentation at the regional level. If "Calcutta has its Oriya plumbers" (Racine, 1997, p.340), aren't at least 80 per cent of the café-tobacconists in Paris today still run by people from the Aveyron area? What is more unusual is undoubtedly that at the top of the spatial ladder we find the migratory situation being strongly influenced at the level of the states of the Indian Union. The Constitution endows the states with some latitude in economic matters, especially with regard to agrarian issues. Whether agrarian reforms have been effective and allowed some land to be redistributed, benefiting those who had none (as in Kerala, West Bengal, Karnataka...) or on the contrary remained almost without effect (as in Bihar); whether the state has or has not assisted the landless to acquire highly subsidized or free housing (Janata houses); whether the state government has more or less effectively implemented national programmes for rural development, such as those that provide days of work during off-seasons, or above all those like the Integrated Rural Development Programme that create productive assets; whether there are fair-price shops supplying grains and oil at subsidized prices to the poor, as in many parts of rural India; or whether in a more general way the state is well-governed and in a fairly satisfactory socio-economic situation, or on the contrary, underdeveloped in all domains: these are all factors, which although difficult to analyse, beyond any doubt affect the migratory situation of individual states.

Roots

If, in order to explain the relatively low level of rural outmigration, we confine ourselves to considering factors at the family level that reinforce village roots, three types can be distinguished: economic, social and cultural. First the economic factors: where towns are concerned, the biggest difficulty is the prospect for economic integration in urban environments where under-employment is prevalent and where the (very inappropriately named) "informal" sector often corresponds to relatively closed recruitment networks. It is known that in developing countries, unlike the situation in 19th century Europe, the speed at which populations become urbanized is quite out of proportion to the economic growth of the cities. While this fact has not discouraged the massive urbanization of Latin America, nevertheless in India it may be a factor that reinforces rural roots.

Especially since, even if the migrant succeeds in finding a job, he will normally have to return to his village when he reaches retirement age. Apart from the public sector and big firms, there is practically no pension system: the migrant is aware of this. Not only does this oblige him to return after reaching a certain age; also, since he is impelled to maintain close links with

10. Let us quote Henri Pourrat on the Auvergne, a hilly area in France (Gaspard des montagnes, 1922): "At Bertignat, they were all ragmen; they scattered all over and as far away as Switzerland. Today a quarter of all the ragmen in France are called Fonlupt. There were villages of pit-sawyers, others of water-carriers. In one part of Cantal or the other, they all went as trumpeters to the King at Versailles."

his village even while still young, these ties may just as well lead him to return even earlier.

The high cost of urban living also acts as a brake on migration (living in Mumbai is particularly expensive). This high cost too may, without preventing departure, introduce a statistical bias which reduces "urban" growth to some extent, if the migrant settles in a rural area on the outskirts of the city, in order to keep his expenses down. The problem then is shifted into this transitional zone, resulting from the degradation of "green belts" proposed by planners, raising the issue of the services and transport the migrants should benefit from.

The general economic situation in the village is of course another important factor. If the village is irrigated, and the farms are big enough (in a well-irrigated area, half a hectare is enough to make both ends meet for a family of five) the incentive to migrate will be limited to the attractions of the city. But even if on the contrary there is a significant number of landless people, this does not necessarily imply a tendency to migrate, if agricultural jobs are available on big farms —which is the case where the village is irrigated. In other words, the agrarian situation (availability of land) is often less decisive than the agricultural situation (availability of irrigation).

In any case, we should avoid assuming that the very poor are more likely to migrate than the rest. The cost of travel, the need for having contacts in the town, the advantages of some minimum education —these factors explain why as a general rule it is the less poor amongst the poor who migrate. Especially because the economic situation of the destitute is often reinforced by their social situation: they may be deeply in debt to some moneylenders, which makes it impossible for them to leave. They may not even want to, when this indebtedness takes the form of a client-situation which provides them a certain security whether the harvest is good or bad.

We need not mention yet again the role of family structures, which sometimes enable a migrant to keep control of his inherited land, and thus possibly provide an incentive to leave. Let us simply stress that this reveals the intensity of the villager's attachment to the land —an essential cultural factor that acts to reinforce the strength of village roots. This attachment explains strategies that might at first sight seem surprising, such as that of migrants who after several years in town have succeeded in finding a job that is fairly stable and well-paid, but who nevertheless leave it to return to take care of the family land when their father becomes too old to manage it. Is this choice dictated by the family, and the fear of what people may say, rather than a reflection of the migrant's individual inclinations? Possibly. Nevertheless, whether the choice is made spontaneously or under compulsion, attachment to the land is such as to normally prevent it being left uncultivated, or sold, and in many cases even being leased out.[11]

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11. Particularly since in many states where agrarian reforms have been implemented that give property rights to tenants, leasing-out has been officially prohibited. A very indirect effect of this legislation has definitely been to put a brake on rural outmigration, by making departures more difficult ... but it may also encourage them, by making it impossible for landless peasants to rent some small plot.

Love for the village, but also dislike of the town —it seems that this is still the rural attitude. It is only among the young that one may come across an attraction to "the city lights." For a great part of the population, the urban environment stands for a world where life is expensive and immorality prevails, where one is exposed to the temptations of gambling and women, far from the protective deities of the village. Certainly the words of Gandhi, who encouraged people to prefer the India of the villages "as old as herself" to the India of the cities, a world which he saw as lacking in ethics and created by the foreign power, still find an echo in the heart of many country people. Let us remember too the dread of ritual pollution through food, which causes many rural Hindus to refuse to eat in another village —or even at a neighbour's house— and to take a thousand precautions if they have to eat in town.

As for those who leave anyway, does that make them city-dwellers? It is possible to live a long time in a town without getting totally assimilated. Indian cultural codes are linked to each other in a way that is flexible enough to enable the migrant, when he returns to his village, to readopt the customary rules as if he had never been away. Each space has its own codes: even as far as daily rituals and taboos (meat eating, inter-caste contacts...) are concerned, behaviour that is appropriate in town proves no obstacle to resuming the other cultural codes that are operative in the village, thanks to a certain "cultural flexibility" that most migrants possess (Heinrich and Landy, 1995). This may go part way to explaining the fact that migration hardly ever results in a definitive break or rupture —and this makes a return to the village easier.

In communities that are known for their tradition of migration, such as the dynamic Marwari traders from Rajasthan, integration into the new surroundings takes specific forms: throughout India, Marwaris integrate into the local economic fabric, learn the local language, remain there generation after generation, but still maintain close links with their region of origin (where they go to look for a bride if they do not find one amongst their local Marwari community). They remain culturally Marwari. In fact, they make the strength of their communal ties into an essential basis of their economic strength, through business networks that are also identity networks.

Is this unique to India?

Not at all, if we consider each of these factors in isolation. However, the combination of them is probably more specific to this country, which explains the relative strength of village roots. Moreover apart from the determinism operative at the levels of the individual, the family, the village or even the state, there still remains to be mentioned a wider cultural factor, that of civilization. Although India has a very ancient urban tradition (the Indus civilization from 2500 BC)[12] its history has been characterized by a

12. In any case, an urban tradition, which can energize outlying rural areas, even sometimes quite distant ones, has the capacity to foster retention of population in the villages.

succession of strong governments; while many of these have of course been short-lived and spatially limited, all have drawn their main wealth from agriculture, and have therefore been eager to intensify it —with irrigation works being built in the Indo-Gangetic plain or the deltas of the south long before the colonial period. From the earliest times, power and wealth have been based at least as much on control of land as on control over people.

Moreover, the fact that almost the whole of India was mapped and surveyed by the 1920s is a reflection of the interest taken by the British tax authorities in agriculture. It also corresponds to an early development of landed property, which, despite the fact that there were a large number of intermediaries between the landowner and the tiller, engendered a strong attachment to land. The plot was improved from generation to generation, terraced, irrigated if possible, and fertilized thanks to the complementarity, on the farm itself, between agriculture and animal husbandry.

In India, around one quarter of the population engaged in agriculture owns no land. Yet, migration is no greater than in rural sub-Saharan Africa, which however has almost no landless. In fact, in tropical zones where agriculture is particularly intensive (several crops each year, high yields per hectare) but not highly mechanized, the demand for labour normally enables a large part of the population to remain in the village—and consequently sustains high rural population densities.

PART III

FEATURES OF INDIAN URBANIZATION

6

Indian Urbanization and the Characteristics of Large Indian Cities Revealed in the 1991 Census

Graham P. CHAPMAN and Pushpa PATHAK

Introduction

According to the last census, out of India's total population of 846 million, 218 million, or only 26 per cent, were classified as living in urban areas in 1991. Thus India's level or urbanization is quite low compared with many developing countries, and the level has hardly gone up at all in the decade 1981-1991. This reflects the changing rate of growth of the urban population. In the decade 1961-71 the growth of the urban population was 38 per cent, to be followed by the highest figure so far, 46 per cent, in the next decade, 1971-81. But in the most recent decade 1981-1991 the growth of the urban population has declined to 36 per cent (Pathak and Metha, 1995a). The general slowing down of urbanization has generated intense debate among scholars. Some scholars attribute it to under-enumeration of urban population while others present a wide range of plausible explanations. The most significant of these explanations are: a decline in the rural-urban migration, identification of relatively fewer new towns, and an increasing concentration of population in the rural areas adjacent to large urban centres (Premi, 1991; Krishnan, 1993). However, there are wide regional variations in the level of urbanization and the growth rate of urban populations, as well as in the development of regional urban conglomerations—as distinct from conurbations (Pathak and Mehta 1995b; Jain, Ghosh and Kim, 1993).

The Census of India has routinely since its inception placed towns and cities in 6 size classes, labelled I to VI. The class internals used have retained the same absolute population figures, and currently, as in the past, those cities with more than 100,000 population (1 lakh) are designated Class I. Census publications have usually tabled more extensive data in convenient form for these cities on an all-India basis, whereas data for smaller urban places is locked up in individual state volumes. Previous analyses of Class I

cities in the 1961, 1971 and 1981 Census reports have revealed some striking patterns (Misra and Chapman, 1991; Chapman, 1983; Chapman and Wanmali, 1981). Perhaps principal among these has been the distinction between large, fast-growing industrial urban centres with adverse sex ratios on the one hand, and more stagnant, smaller, less industrial cities with more balanced sex ratios, and a great predominance of trade and domestic industry.

Table 6.1: District level census data

Geographical Area*
Number of Occupied residences*
Number of Households*
Population
Male Population
Female Population
Male Population < 7 years
Female Population < 7 years
Male Scheduled Castes
Female Scheduled Caste
Male Population Scheduled Tribes
Female Population Scheduled Tribes
Male Literates
Female Literates
Male Workers
Female Workers
Male Cultivators
Female Cultivators
Male Agricultural Labourers
Female Agricultural Labourers
Males in Livestock, Fishing, Forestry
Female in Livestock, Fishing, Forestry
Males in Mining and Quarrying
Female in Mining and Quarrying
Males in Manufacturing and Processing in Household Industry
Female in Manufacturing and Processing in Household Industry
Males in non-household Manufacturing and Processing
Female in non-household Manufacturing and Processing
Male Construction Workers
Female Construction Workers
Male in Trade and Commerce
Female in Trade and Commerce
Males in Transport, Storage and Communication
Females in Transport, Storage and Communication
Males in other Services
Females in other Services
Male Marginal Workers*
Female Marginal Workers*
Male non-Workers*
Female non-Workers*

*: not used in the analysis

This distinction in crude and general terms mirrors the distinction between generative and parasitic cities established in literature. The spatial

pattern of urbanization has given credence to the correlations too: the more generative cities occur in clusters in the north-west, west and south of India, the more parasitic ones in the east, particularly in Bihar. A feature that has marked Indian urbanization as different from that in the west has been the positive correlation between size and specialization in employment. At what might perhaps be called a more mature stage of urbanization in the west, the largest cities have not shown the highest rates of growth in the last decades, and empirical data have supported the prediction that large places have less, rather than more, specialized employment characteristics.

In this paper, we report on some of the findings of an analysis of data from the 1991 Census. For the first time the results of this census have been available on computer discs, thus enabling researchers to use more of the data in their analyses for any given investment of time, although of course requiring them to aggregate consistently from the different tables. Four principal data sets were available for the analysis reported on here (see list of variables in Table 6.1). These are:

a) *For each state and union territory*, a tabulation of the total for the rural areas of each district of persons in each of 36 categories.
b) *For each state and union territory*, a tabulation of the total for the urban areas of each district of persons in each of 36 categories.
c) *For each state and union territory*, a tabulation of the same 36 categories for each individual city, city component or town
d) *For all Class I cities*, the male and female populations in the 1991 Census, together with the same figures for the same cities in the 1971 and 1981 Censuses, even if they were then below the 100,000 threshold. This data set was not presented in this form in the 1991 Census, and was collated in the National Institute for Urban Affairs in New Delhi.

From individual state tables in c) we have abstracted the set of variables for each of the cities listed in d), so that as well as the growth of the cities, we have the data for their employment characteristics and other social indicators such as sex ratios and literacy. There are 296 cities in d), contrasting with the 5,600 urban units for which data is provided in the total of state tables c). This does not mean that there are 5,600 urban places in India, since for larger urban places the tables provide breakdowns by internal subdivision of large urban areas. It is clear that c) is a very large data set warranting much more detailed study than we have managed so far, but that is beyond the scope of the current paper.

No census was held in Jammu and Kashmir in 1991. So the data in a) and b) covers 449 districts (we have omitted the offshore Island territories). In the earlier works using the 1971 and 1981 Censuses, cited above, equivalent district data was not incorporated, hence in this paper we have for the first time the opportunity not only to analyse the characteristics of the Class I cities in 1991, but also to relate these if possible to the regional context revealed by district level data.

Table 6.2: Derived averaged district variables

Derived Variables
Sex ratio: females per 1000 males
(as % total population)
% of population urban
% population < 7 years old
% of population Scheduled Caste
% of Population Scheduled Tribe
(as % of male/female total)
% Male Literates
% Female Literates
(as % of male/female workers)
Male Cultivators
Female Cultivators
Male Agricultural Labourers
Female Agricultural Labourers
Males in Livestock, Fishing, Forestry
Females in Livestock, Fishing, Forestry
Males in Mining and Quarrying
Females in Mining and Quarrying
Males in Manufacturing and Processing in Household Industry
Females in Manufacturing and Processing in Household Industry
Males in non-household Manufacturing and Processing
Females in non-household Manufacturing and Processing
Males in Trade and Commerce
Females in Trade and Commerce
Males in Transport, Storage and Communication
Females in Transport, Storage and Communication
Males in other Services
Females in other Services

The aim of the paper is to analyse the spatial variation of urbanization in India, to some extent to contrast urban and rural variables, and to examine in more detail the characteristics of the large cities. Correlations within and between the data sets are explored to see what further light these throw on the processes of urbanization an on urban structure. The paper is exploratory and descriptive in nature.

Some of this data was not used because: 1) the data on area was inconsistent between data sets and quite often absent; 2) the definition of occupied residential houses was thought to be open to variable interpretation; 3) and similarly we were not certain of the consistency of the definition of household; 4) we noticed that there were very few persons counted as marginal workers, and that the definition was again questionable; 5) rather than use Non-workers, we preferred to use Employment Participation Rates based on the number of people actually defined in work categories.

Most of the data was consistent between the different sets, although there were two minor discrepancies between the Class I city population figures, and figures derived from the state lists of urban areas. There were also inconsistencies in the spelling of some town and district names, which required careful attention and adjustment.

Spatial averaging

Although the geographical surface of India is continuous, the data reflects in part the arbitrary way that it is aggregated into dichotomous spatial units such as districts and urban areas. This means that, for example, two adjacent

districts might have a very high and a very low measure of percent urban, although they share a single urban area spreading from one to the other, so that the overall figure for that region ought to be somewhere between the two. To overcome these problems the district data has been subjected to spatial averaging. A more sophisticated method would be to use population potentials, as used by Chapman and Wanmali (1981), but on this occasion the resources were not available to make an equivalent analysis. Instead, the averaging has proceeded in a very simple way. All the districts have had their geographical centre recorded as x and y co-ordinates. Then for each district, the original value of any variable is replaced by an average value of the district itself and its six nearest neighbours. There is nothing special or magic about six, except that it is the average of the number of contact neighbours in a random point pattern. The transformed data produces a smoother surface, and is the data used for most of the maps of district variation shown here.

For a correlation analysis of the district data, the raw data is used because by definition the averaging process introduces spatial auto correlation.

From both the averaged data and the original data, new variables have been derived as listed in Table 6.2, all of which are available for the urban and rural values of each district separately, except of course a variable such as "% urban."

In order to examine the broad spatial patterns, the averaged data is further manipulated. Firstly, highly skewed data is transformed by taking either log or power functions as appropriate, and secondly this data is re-expressed in standardized scores (often known as "z" scores or sometimes "t" scores) with means of 0 and standard deviation of 1. As an example, Figure 6.1 shows the Urban Population as a percentage of the total. The symbols range from values (expressed in standard deviations) below -2 to values above 2. The absolute values are not depicted (but are shown in Table 6.3), but the result shows clearly the variation within India. In a sense, since relative values are being used, the procedure cannot fail to show variation: what is significant is whether the spatial pattern reveals new understanding. In this case it clearly does. The more lowly urbanized areas of Arunachal Pradesh, Assam, Bihar, eastern Uttar Pradesh and Orissa are expected. The higher levels in Tamil Nadu are expected: what was not expected to be so clear is the way in which two of the four metropolitan areas are so clearly much more intensively urbanized regional systems (Delhi and Mumbai) than the other two (Calcutta and Chennai). Though Calcutta is a huge metropolis, it is more singular massive urban area within a more rural hinterland. In the case of Mumbai, the urban system clearly stretches north into Gujarat—a point which will be picked up again below in a slightly different context.

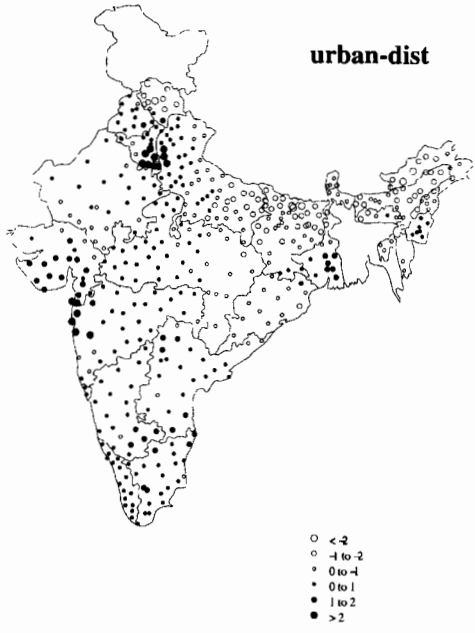

Figure 6.1: Proportion of district population in urban areas

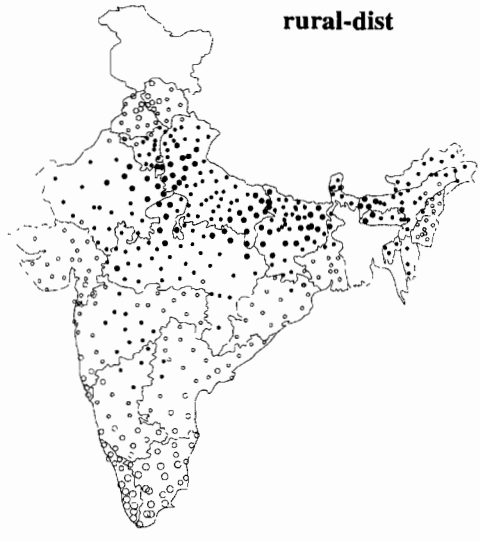

Figure 6.2: Proportion of the district rural population below the age of 7 years

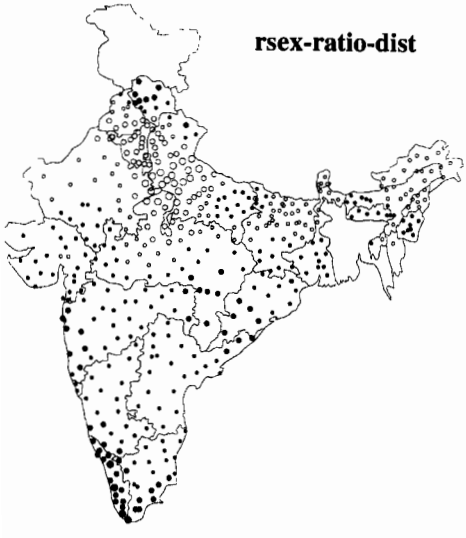

Figure 6.3: Variation in rural sex ratio, by district

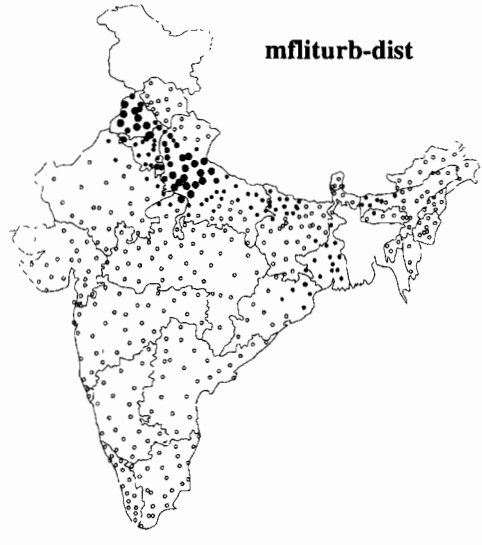

Figure 6.4: Variation in male / female urban literacy rates, by district

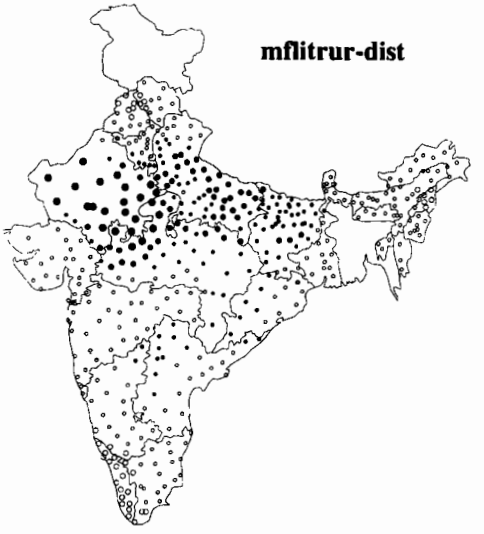

Figure 6.5: Variation in male/femal rate)/ rural literacy rates, by district)

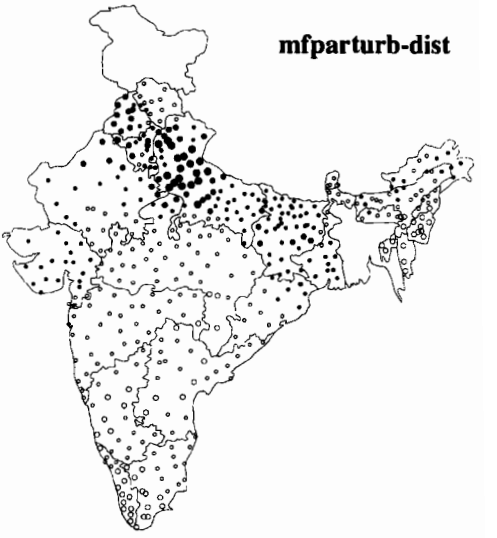

Figure 6.6: (Male urban participation (female urban participation rate), by district

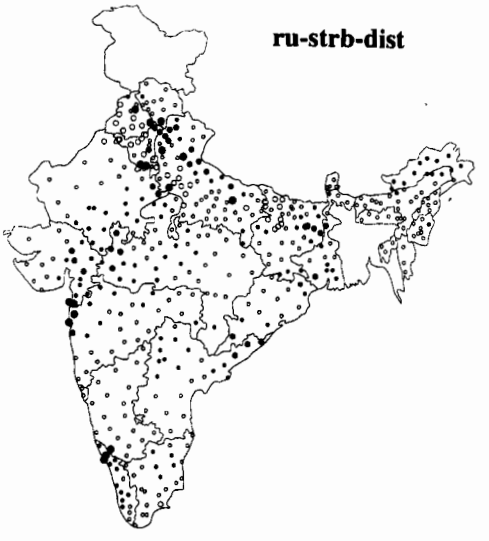

Figure 6.7: (Proportion of tribal population in rural areas) / (proportion of tribal population in urban areas), by district

%-part-rate-f-urb	********
	I
y	****
	I
sex-ratio-urb	****
	I
sex-ratio-rur	****
	I
%<7-urban	*****
	I
%<7-rural	******
	I
%lit-f-rur	******
	I
%lit-m-urb	*******
	I
%lit-f-urb	*******
	I
%lit-m-rur	*****
	I
%trb-urban	***
	I
%-part-rate-f-rur	***
%urban	**
	I
%--s-cst-urban	**
x	*
%part-rate-m-rur	*
%part-rate-m-urb	*

Figure 6.8: Q-Analysis structure of Table 6.4 district correlations

Figure 6.2 shows the variation in the percentage of the rural population below the age of 7 years. The south-north distinction is extremely clear, with the more youthful population stretching down nearly all of the Ganges Valley, and into Assam. Exceptions in the north are the areas of Punjab and Himachal Pradesh, which are consistently different on map after map, the Calcutta hinterland, and the southern areas of the north-eastern states. Again, in map after map, Nagaland and Manipur, and sometimes Mizoram and Tripura too, are distinct from Assam and Arunachal Pradesh. In the south of India, the two states of Kerala and Tamil Nadu form a complete contrast to the northern states. The map showing the percentage of urban population under 7 years (not shown) is almost identical.

Table 6.3: % Urban and Z-scores.

% Urban	Z-score
46	2
36	1
25	0
14	-1
3	-2

Note: Average % Urban = 25,
Standard deviation = 11

Figure 6.3 shows the variations in the rural sex ratio (see also Atkin *et al.* in this volume). The north-south gradient is known and expected, as also the peaking of the highest values in Kerala. What is perhaps less expected is the pattern within the north, where the region of very low values stands out so clearly within western Uttar Pradesh and close to the Delhi conurbation. The urban sex ratio (not shown) is similar, though not picking out western Uttar Pradesh quite so emphatically.

Literacy is examined here by comparing the male and female literacy rates for both rural and urban areas. The two Figures 6.4 and 6.5, are essentially maps of discrimination by sex. The discrimination in favour of males in rural areas reveals a concentration in the "cow belt" of Hindu orthodoxy from Rajasthan to Bengal. Apart from the areas of the north-eastern states, this map shows a close proximity to the percentage of rural population under the age of 7. It is a fairly graphic association of the implicit link between low levels of female education and high birth rates.

The next set of four maps (not shown) concern Employment Participation Rates —the percentage of male or female population recorded as employed. On the whole the rural maps show a lower rate of employment in the Gangetic north, with the exception of high male rates in Punjab and Haryana; a higher rate in the whole of the Deccan with the exception that the participation rate in Kerala is low —which is something that is quite well known. The urban maps display more marked regional contrasts —in Nagaland, Manipur, Tripura and Mizoram the female urban participation rates show strongly, as indeed they do in Kerala. By contrast, in Punjab, Himachal Pradesh and the capital region, male urban participation rates are high, while female ones are low. Figure 6.6 shows explicitly the ratio of urban participation rates for males to the same rates for females. The greatest "imbalance" occurs in the south in Kerala and southern Tamil Nadu.

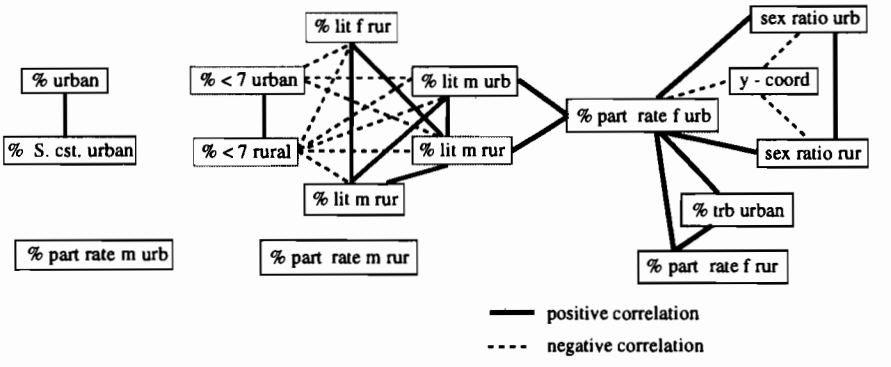

Figure 6.9: Figurative diagram of correlations of Table 6.4

Other kinds of "imbalance" can be shown for the difference for any variable between urban and rural areas. Figure 6.7 shows the rural/urban ratio of the tribal population. The "provocation" for producing this map was the recently announced intention of the company P and P to build a new port at Vardhavan north of Mumbai, in Thane district and close to the Gujarati border, in an area inhabited by the Warli tribe. Opponents of the plan highlight the impact that such developments would have on Warli tribal culture. In south Bihar in the 1960s and 1970s, the influx of Biharis and Bengalis into new industrial towns in tribal areas caused political tension and the reinvigoration of the demand for a tribal state, Jharkand. Figure 6.7 highlights several areas in India where such tensions may be more probable. In the case of the area north of Mumbai, it is also worth again considering Figure 6.1.

Correlation analysis at the district level

The spatially-averaged data cannot be used for a correlation analysis, since by definition it has had autocorrelation built into it. Here we perform an analysis using data, which has not been averaged. The question remains open however, as to whether this data is still spatially auto-correlated, since neighbouring districts may be more likely to reflect each other than distant ones. However, if such autocorrelation is present, this does not mean that we cannot find patterns that are interesting, but rather that it is not possible to apply the usual tests of significance. In fact it is very easy to show that auto correlation is present, since several variables correlate with the south-north coordinate (and some, to a lesser degree, with the east-west).

Skewed variables were transformed using either log or power functions, which eliminated most but not all of the skew from most of them. The data was then analysed using a Pearson product moment correlation coefficient. The exercise was repeated using a rank correlation coefficient, to eliminated the effects of whatever skew remained. The two correlation tables agreed with each other fairly closely, varying little in some cases in the strength of an indicated correlation. The results of the more robust (assumption free)

rank correlation exercise are shown in Table 6.4. Given the number of observations (449) any correlation with an absolute value in excess of .15 is theoretically statistically significant at the 0.1 per cent level. However, autocorrelation means this value cannot be used with authority, and in any event the variance explained remains low.

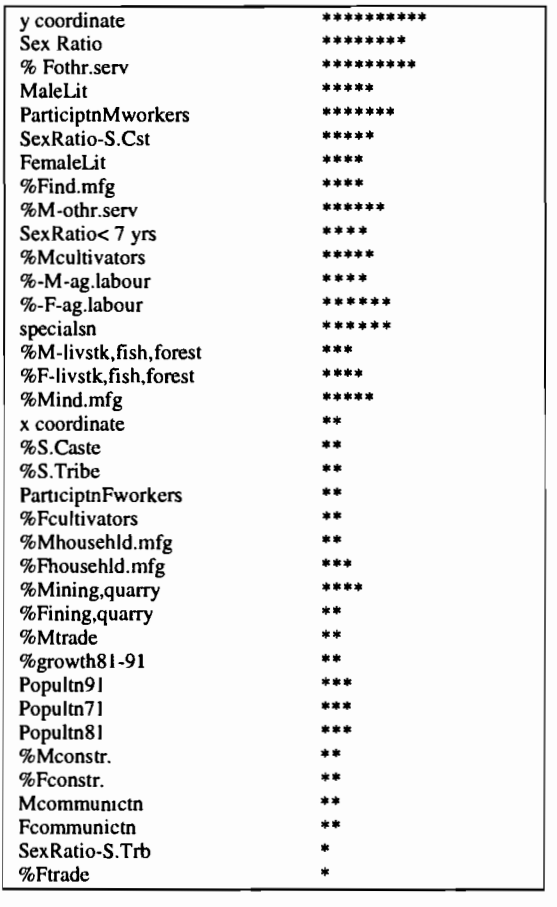

Figure 6.10: Q-analysis structure from Table 6.4 city correlations

The variables clearly mesh with each other over a network of direct and indirect correlation. The next step in orthodox procedure would be use factor analysis, to impose orthogonal axes in place of the original variables. This procedure is not very satisfactory, because in a network of connections orthogonality seems an odd imposition, and because some variables may load partially on more than one factor. Here two different steps are followed. Firstly, and totally arbitrarily, correlations of less than [.5] are dropped from the analysis; and secondly the remaining correlations are analysed in terms of Q-connectivity —a device which considers multi-dimensional and

indirect connectivity. Q-analysis was developed by Atkin (1974), and is further exemplified by Chapman (1981 and 1984). The structure vector is shown in Figure 6.8. The vector shows how one variable —the Female Participation Rate— is connected to many others, but stands in a group somewhat on its own. On the other hand, both male and female literacy, both urban and rural, form a high dimensional cluster with the percentage of children under 7 years in both rural and urban areas. This information enables us to plot quite quickly the correlation diagram shown in Figure 6.9, where the direction of the correlations can also be shown. The correlations show both urban and rural characteristics vary together. Hence both urban and rural literacy rates inversely connect with both urban and rural populations under the age of 7. This does not mean that there are no differences between urban and rural areas —in absolute terms the levels of literacy and the percentage of children under 7 may differ quite widely in many districts. But it does say that variation across India in the absolute levels or urban areas will tend to mirror variations in rural areas, and vice versa. Hence variation within India will be found to be regional, rather than at the urban/rural interface.

The diagram also highlights the pivotal nature of the Female Urban Participation Rate. It is connected both to urban and rural sex ratios, and is higher wherever these are more "favourable" (more females per male). These three together are all negatively correlated with the north-south co-ordinate "y" The value of y decreases with decreasing latitude, so again what is displayed is not urban-rural differences, but regional differences, again highlighting the higher southern sex ratios. The Female participation rate also correlates with Percent Scheduled Tribe in urban areas and the Female Rural Participation Rates. Inspection of the maps shows that this again is a regional result, reflecting in particular the combination of values in the north-eastern *states*.

In the diagram the variable % Urban is strongly associated with % Scheduled Caste urban. This in a sense implies that there may be more work opportunities for the lower strata of society where urbanization rates are higher, but it may also reflect some of the regional impacts evident in the Punjab and north-west. Two variables remain disconnected —the urban and the rural Male Participation Rates. Inspection of the correlation Table shows that the rural rate has no particular high correlations— suggesting that it will be the result of local circumstance rather than any pan-national associations.

The urban rate has quite strong negative association with the Percent of Rural Population under 7, and with urban Female Literacy Rates. One can only speculate in very general terms why this should be so; that the Male Participation Rate is like the Female Participation Rate a sign of "modernity", but less markedly so.

Table 6.4: Rank correlations between 15 variables, 449 districts, 1991.

	% urban	sex-ratio-urb	sex-ratio-rur	%<7-urban	%<7-rural	%-s-cst-urban	%trb-urban	%part-rate-m-rur	%part-rate-f-rur	%part-rate-m-urb	%-part-rate-f-urb	%lit-m-rur	%lit-f-rur	%lit-m-urb	%lit-f-urb
%urban	1	0.3			-0.3	0 8	0 29			0 32		0 25		0.24	0.27
sex-ratio-urb	0.3	1	0 59	-0 21	-0 42		0 23	0 27	0.21		0.42	0.21	0 24	0 31	0.3
sex-ratio-rur		0 59	1	-0.35	-0.42		0.39		0.44		0 56	0 28	0 3	0.47	0.39
%<7-urban		-0 21	-0 35	1	0 65				-0 24	-0.35	-0.28	-0 47	-0 58	-0.61	-0.62
%<7-rural	-0 3	-0.42	-0 42	0.65	1			-0.27	-0 21	-0 47	-0 44	-0 59	-0.62	-0.54	-0.56
%-s-cst-urban	0 8					1				0.29					
%trb-urban	0 29	0.23	0.39				1	0.28	0.54	0.21	0.57			0.38	0.33
%part-rate-m-rur		0.27			-0.27		0.28	1	0.35	0 35					
%part-rate-f-rur		0 21	0.44	-0 24	-0.21		0.54	0 35	1		0.62				
%part-rate-m-urb	0 32			-0.35	-0 47	0 29	0.21	0.35		1	0.35	0 28	0 34	0.39	0.44
%part-rate-f-urb		0.52	0 56	-0 28	-0.44		0 57		0.62	0.35	1	0 32	0.39	0.53	0 51
%lit-m-rur	0 25	0 21	0.28	-0.47	-0 59					0 28	0.32	1	0 89	0 64	0 63
%lit-f-rur		0.24	0 3	-0 58	-0.62					0.34	0 39	0.89	1	0.63	0 72
%lit-m-urb	0.24	0.31	0 47	-0 61	-0.54		0 38			0 39	0.53	0.64	0.63	1	0 94
%lit-f-urb	0.27	0.3	0 39	-0.62	-0.56		0.33			0 44	0.51	0.63	0 72	0.94	1

Table 6.5. Correlation tables, class I cities, 296 cases, 35 variables

	Popultn91	SexRatio	SexRatio<7yrs	%S Caste	SexRatio-S Cst	%S Tribe	SexRatioS Trb	%MaleLit	%FemaleLit	%ParticiptnFworkers	%ParticiptnMworkers	%Mcultivators	%Fcultivators	%M-ag labour	%F-ag.labour	«%M-livstk, fish, forest»	«%F-livstk, fish, forest»	«%Mmining, quarry»	«%Fmining, quarry»	%Mhousehld.mfg	%Fhousehld mfg	%Mind.mfg	%Find.mfg	%Mconstr.	%Fconstr.	%Mtrade	%Ftrade	%Mcommunictn	%Fcommunictn	%M-othr serv	%F-othr serv	Ppopultn71	Popultn81	%growth81-91	specialsn
Popultn91	1																															0.69	0 71		
SexRatio		1			0.68			0.36	0 42		0.52																			-0.4				-0.42
SexRatio<7yrs			1																											-0 39				
%S Caste				1													0 41																	
SexRatio-S Cst		0 68			1	-0 51																							-0 39					
%S Tribe					-0 51	1																												
SexRatioS Trb							1																											
%MaleLit		0 36						1	0 93		0.37																							
%FemaleLit		0 42						0.93	1																									
%ParticiptnF workers										1												0.48												
%ParticiptnM workers		0 52						0 37			1					0 5	0 46													-0.57				
%Mcultivators												1	0.53	0 55	0.39																			-0 37
%Fcultivators												0.53	1																					
%M-ag.labour												0 55		1	0 76																			-0.47
%F-ag labour												0.39		0 76	1															-0 46				-0 38
«%M-livstk, fish, forest»											0.5					1	0.87																	
«%F-livstk, fish, forest»				0.41							0 46					0 87	1																	
«%Mmining, quarry»																		1	0.88						-0.36								0 36	
«%Fmining, quarry»																		0 88	1															
%Mhousehld mfg																				1	0.78													
%Fhousehld mfg																				0 78	1									-0 41				
%Mind.mfg										0.48												1	0.57						-0 53					0.45
%Find mfg																						0 57	1						-0.41	-0.52				
%Mconstr																								1	0 48									
%Fconstr.																								0 48	1									
%Mtrade																		-0.36								1								
%Ftrade																											1							
%Mcommunictn																												1	0.62					
%Fcommunictn																												0.62	1					
%M-othr.serv					-0.39																	-0.53	-0.41							1	0.55			
%F-othr.serv		-0.4	-0 39								-0 57				-0 46						-0 41		-0.52							0 55	1			
Popultn71	0 69																															1	0.99		
Popultn81	0 71																															0 99	1		
%growth81-91																		0 36															1	
specialsn		-0 42										-0 37		-0.47	-0 38							0.45												1

Analysis of class 1 cities

This is conducted in two stages. First, there is an analysis of the cities and their variables on their own in this section. Then an attempt is made to analyse the cities in relation to their regional settings.

Table 6.5 shows the complete correlation matrix for the selected variables. Again, the approach adopted is not to use factor analysis to force orthogonal vectors onto this material, but to investigate the connectivity through a Q-analysis and a descriptive diagram. The value chosen for slicing the correlation matrix is arbitrary: in this case it is for absolute r values greater than .35 —a value at which a clear structure emerges in the Q-analysis. At low values, e.g. r = .1, many variables are related to many others, and at high values many variables and many connections between variables are excluded.

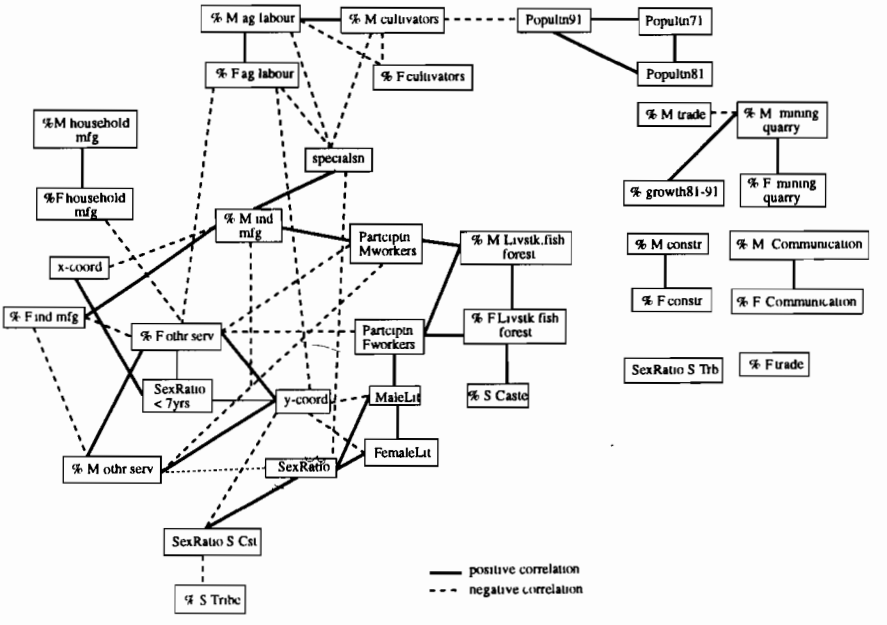

Figure 6.11: Figurative diagram of correlations of Table 6.5

The analysis shown in Figures 6.10 and 6.11 immediately highlights one point by comparison with the analysis of the 1981 data set. In that set the growth of cities over the previous decade 1971-1981 was correlated quite strongly with several variables, including size, the presence of organized industry, employment rate, and specialization. This time growth hardly seems correlated with anything: in the diagram it appears to be correlated with Mining and Quarrying, but closer inspection of the data reveals this relationship to be overstated, because the data remains skewed even after a

log transformation, and one city, Ramagundam in Andhra Pradesh, has had by far the highest rate of growth and has high levels of employment in mining. That growth which has no particularly strong correlates in the more recent decade is interesting: a more diverse set of causes of the growth of cities perhaps indicates a more mature stage of urbanization.

Many of the variables have been calculated separately for the two sexes. It is apparent that there is a close correlation between the two sexes for nearly all of these —for example the percentage of female and male employment in Mining and Quarrying, or in Industrial Manufacturing. This does not mean that the employment levels of the two sexes are the same for any category of employment —but it does mean that given whatever absolute levels occur, then variations from one city to another in one variable is reflected by variation in the other. This in turn suggests that different types of city economy do not have a discriminating effect on male versus female employment which is additional to discrimination from other sources —e.g. cultural or demographic variation.

Three variables stand out in terms of the number of other variables with which they are correlated, and in terms of their total "r" values. These are Sex Ratio, north-south Co-ordinate (y), and percentage Females in Other Services. The first is commonly referred to, as there appears to be such a regional difference between high Female/Male ratios in the south, and low ones in the north. The correlation of this with the north-south coordinate confirms this. Given such a crude way of measuring location in a single dimension, the relationship is extraordinarily strong. The Other Services category is interesting too —it conjures up an image of pressure to find work in the informal sector. For both Females and Males it is negatively correlated with the respective workforce Participation Rate, and both are negatively correlated with levels of Industrial Manufacturing employment rates, and less specialized centres with more diverse employment at lower participation rates.

All of these variables have been plotted on maps. Five of these are reproduced here in Figures 6.12-6.16, two of which will receive specific comment. The variable Specialization is an entropy statistic derived from all the employment categories together, and is a measure of how much employment is concentrated in one or a few categories. It does not differentiate between concentrations in two different categories —i.e. one city could be specialized in Industry and one in Household manufacturing, but both be equally specialized. The variable percent Males in Construction emphatically and curiously does not correlate with urban growth. There does appear to be some geographical pattern worth explaining though, since the low values occur in eastern Uttar Pradesh, Bihar, West Bengal and Orissa. These states collectively make up the stagnant part of two-speed India (Chapman, 1992) —not in the sense that population is not growing, but in that incomes per head in this zone have not improved for at least 30 years. This reminds us that a key variable which one would like to include in further analysis would be average incomes per head in these cities.

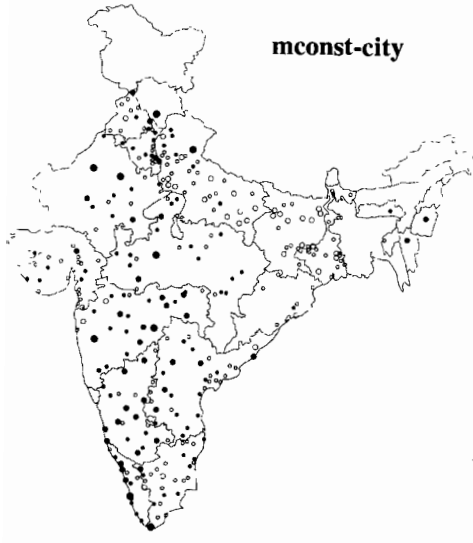

Figure 6.12: Variations in proportion of males in construction industry in cities

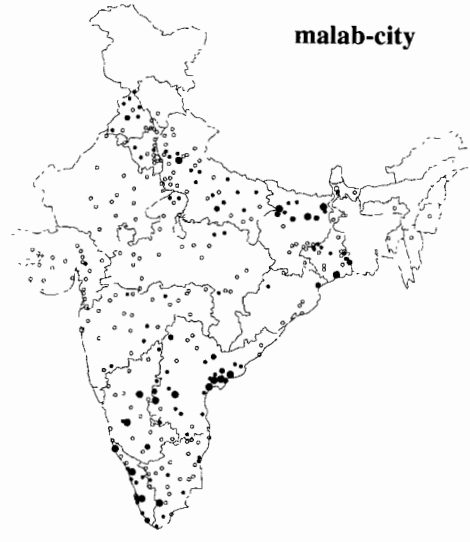

Figure 6.13: Variations in proportion of males in agriculture labour in cities

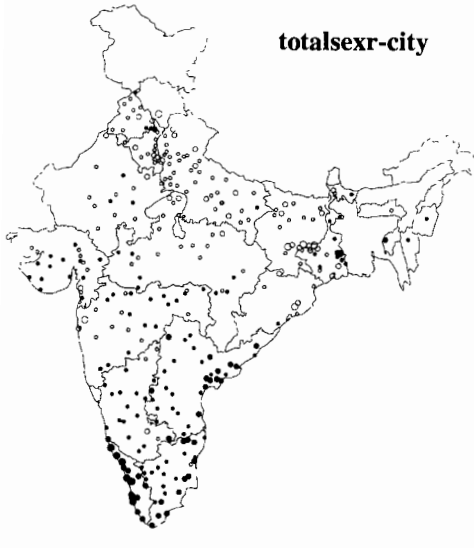

Figure 6.14: Variations in sex ratio of cities

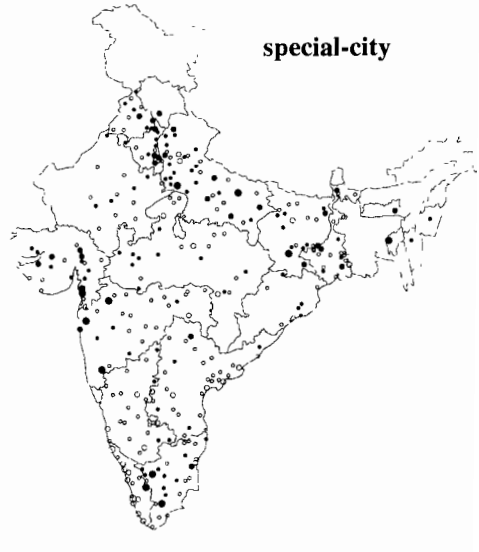

Figure 6.15: Variations in degree of employment specialization by city

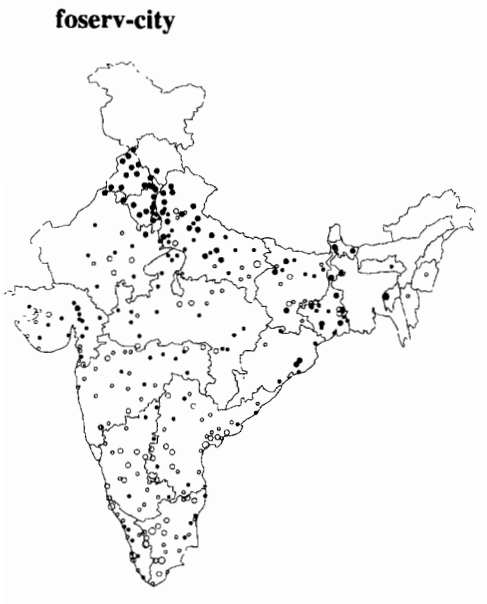

Figure 6.16: Variations in females in other services predicted values

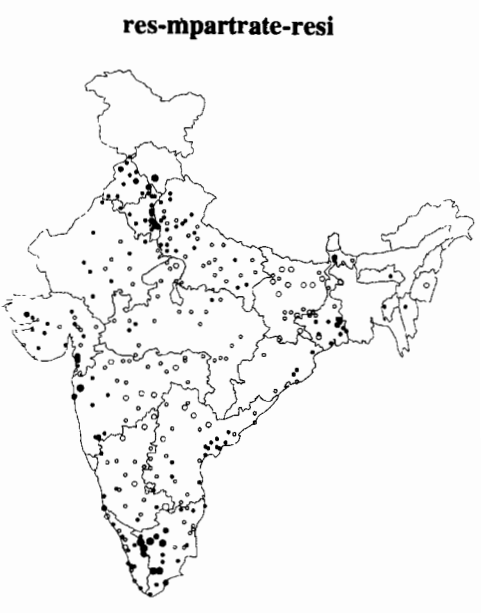

Figure 6.17: Residual variation of male participation rate in cities from local

Figure 6.18: Residual variation of female participation rate in cities from local predicted values

The local context analysis

Here we make an attempt to relate cities to their own regional context. Each city is linked to the district within which it is located. For these districts we have the average values of variables from the six nearest surrounding districts and the district itself. It is thus possible to calculate the local average value for any rural variable, in the proximity of any city. It is also possible to calculate the urban value from the surrounding six districts and the district itself, but in this case omitting the value of the Class I city included in the district (to avoid including this data on both sides of a correlation.) Table 6.6 shows the results for values above 0.3. The Table invites almost endless speculation, and we do not presume to be able to pronounce on all the associations revealed. Some of the results are simple and straight-forward and much as to be expected. For example, the Percent Scheduled Tribe in Class I cities both on average correlate with their respective regional trends, both urban and rural. It is for this reason that departures from the trend as revealed in Figure 6.7 are to be noted. Literacy rates in Class I cities correlate with their local regional trends in literacy, again both rural and urban. Male Class I Participation Rates correlate with local regional Male Participation Rates, and Female with local Female Participation Rates. But then there is a distinction between Males and Females. The Female Class I Participation Rate also correlates with regional Female Literacy Rates, but for the males this is not so. Presumably, this is a hint that the characteristics of the male population of large cities are less likely to reflect local trends, perhaps because males migrate further to large cities than females. However, the Sex Ratios of the Cities are correlates with the urban and rural local Sex Ratios. Class I Female construction workers are correlated with Rural Scheduled Tribes, and both Urban and Rural Female Participation Rates. This relationship depicts well the use of such labour in the arc of "new" industrial towns in south Bihar and West Bengal, in Jharkand (see above).

A last example of the possibilities of manipulating this data is a consideration of the extent to which particular values of variables for Class I cities differ from those that would be predicted by a local regional trend. In this case, we are specifically interested in Participation Rates in Rural areas. The logic of this is that where there are large differentials, then we might expect local rural-urban migration rates to be higher too. The analytical procedure is as follows. The average values for the rural Male and Female Participation Rates for the district containing the Class I city and its six nearest neighbours have already been calculated. The actual values of the participation rates in the Cities are then regressed against these local rural averages. The correlation between the average rural values and the individual city values is high —in the order of 0.5— so we are right in supposing that cities on average do show participation rates which reflect local circumstance. The last stage is to map the residuals between actual urban participation rates and the expected participation rate predicted by the regression. Two maps are shown here Figures 6.17 and 6.18 —for the Male and Female Participation Rate residuals— again scaled in standard

deviations of the residuals. The map of Male Residuals emphasizes the Delhi, Calcutta and Mumbai metropolitan areas to some extent, but not Chennai. In the south, the industrial cities of inland Tamil Nadu make a very distinct pattern on the map. Rural male participation rates in this area are not particularly low by national standards. In one of the lower ranked districts of Tamil Nadu —Coimbatore— they are about national average. But the Male Participation Rates in town are clearly much higher than expected from these values.

It would be exciting to say that this demonstrates a dynamic and growing urban area. However, the figures for urban growth do not show this area to be expanding fast, and indeed growth rates for the Class I cities remain the hardest to correlate with any other variables. We have yet to agree on the true significance of this pattern.

Conclusion

In a previous paper (Misra and Chapman, 1991) as a result of an analysis of data on the Class I cities of the 1981 Census, the authors concluded by showing a regionalization of India's major cities. The fact that they produced such a regionalization was indicative of the belief that urbanization in India has distinct regional characteristics, as well as also having some national trends. Prominent among the national trends was the ability to explain growth rates of Indian cities in terms of their size and their manufacturing base. One implication of the correlation was the unwelcome one that already very large cities could grow even larger.

In this paper, we have not found it possible to explain the growth rates of cities in the last decade in any simple way. Specifically, it is no longer true that the largest cities are more likely to grow fastest. On the other hand, we have shown that regional systems of cities are important, and that in some of these the growth is dispersed throughout the city region. These regions —as with Mumbai, Pune and parts of Thane district— are too big and too dispersed to be called simple conurbations, but the reality of their regional performance is clear. We have also been able to go one step further, and to show how many of the characteristics of cities are strongly correlated with their regional hinterlands, even if the absolute values of many variables do vary between urban and rural areas. Lastly, we have shown that sensitive manipulation of some of the ratio measures between sexes or between urban and rural areas can reveal significant aspects of the spatial process of development.

Table 6.6. Correlation between class I city variables and local district variables

Class I city variables	%Urba	Sex-Ratio	Urban Sex-Ratio	Rural Population<7 years	Urban Population<7 years	%Schedules Caste in Rural Population	%Schedules Caste in Urban Population	%Schedules Tribe in Urban Population	%Schedules Tribe in Rural Population	Rural Male Participation Rate	Rural Female Participation Rate	Urban Male Participation Rate	Urban Female Participation Rate	Rural Male Literacy	Rural Female Literacy	Urban Male Literacy	UrbanFemale Literacy
Total Sex-Ratio	-0.52	0.55	0.76	-0 62	-0.51		-0.33				0.41		0.6	0.43	0.53	0.45	0.48
% Population < 7 Years	0.71	-0 57	-0.53	0 74	0.67							-0.36	-0.47	-0.55	-0.64	-0.56	-0.59
%Scheduled Caste						0.39	0.5										
% Scheduled Tribe								0.41	0.31								
% M Literates	-0.52	0.59	0.45	-0.57	-0.51								0.47	0.65	0.64	0.73	0 66
% F Literates	-0.55	0.51	0.47	-0.61	-0.53								0 41	0.7	0.74	0.68	0 71
% Participation Male Workers	-0.34			-0.45	-0 33					0.47		0.66					
% Participation Female Workers	-0.43	0.54	0.56	-0.53	-0.42						0.46		0.67	0.4	0.45	0.45	0 43
% Female Agric.Labourers		0.32									0.41		0.35				
%Males in Livestock, Forestry, Fishing															0.31		
% Males in Industrial Manufacturing												0.32					
% Males in Construction													0.32				
% Females in Construction									0.32		0 49		0.31				
% Females in Trade			0 31							0.33	0 35		0.37				
% Males, Other Services	0 34	-0.33	-0.32	0.39	0.32										-0.32		
% Females, Other Services		-0.51	-0.44	0 33					-0.37		-0.54		-0.52				

7

Indian City, Hindu City? Factors and Processes of Spatial Segregation

Odette LOUISET-VAGUET

In the world list of achievements in the matter of urbanization, India occupies a prominent position, both in terms of number (240 million in 1995),[1] and regarding the existence of cities which are counted among the largest in the world. To this incontestable importance of the urban phenomenon is often contrasted a moderate rate of urbanization: almost two out of every three Indians still live in rural zones. Far from opposing each other, town and countryside form a continuum, not only because of improved means of communication, but also because of the spreading of urbanized zones. Diffuse and physical urbanization proceeds, but this weakens neither the capacity of the countryside to retain the country dwellers, nor the scarcely urbanizing tendencies of a caste society which seems to have a phobia about the unknown. Above all, these two spaces recognize the same values proper to Hinduism and, because of this, present analogies in their spatial organization.

The Indian *urbanitas* is disconcerting, exhibiting the invariants of the universally urban, as well as of Indian sociocultural specificity. This combination exhorts us to derive benefit from the parallels established with other urban territories and forms of evolution, whether in the developing or in the industrialized countries. The examination of urban forms and issues is in no way advanced by a *compartmentalized* analysis.

However, it is at the same time known that the results depend on the methods of approach. If at the outset the Indian city seems to sustain an inductive approach which accords primacy in particular to the large scale, the deductive method makes it possible to draw back and place the Indian city in the framework of the large urban types and processes: a slow

1. Visaria and Visaria (1995).

urbanization notwithstanding its extreme characteristics (Calcutta), many-sided towns struck by crisis, as in all countries of the world, but a specifically communal internal structuring. It therefore appears to us to be essential to follow a comparative method in order to distinguish the "universal tendencies of processes proper to local cultures" to "make good tools of knowledge and avoid hasty transfers of models of urban management from one region to another."[2] It is from this perspective that we propose to contribute by way of a few examples to the debate on the Indian city.

The Indian urban world contained in the universal urban

Indian urbanization on statistical trial

India would seem to be impervious to a statistical analysis of the urban phenomenon; while the relative figures place India in the bottom group, absolute values put it at the head of the list. At a rate of urbanization of 26 per cent, the urban population of the country is more numerous than the total population of the overwhelming majority of the world's countries. By the same token, the growth rate of the urban population establishes no records whatsoever among the developing countries: the cities with more than 100,000 inhabitants[3] experiencing the most sustained growth recorded an annual rate of 3.09 per cent during the 1980s. Rates twice as high are currently to be observed in tropical Africa; and, above all, Indian urban growth appears to have fallen off in comparison to the preceding decades. However, this was expressed in an intercensal growth (1981-1991) of the 300 cities in Class I of 44.2 million persons, which represents a greater population than that of the 107 cities in India with more than 100,000 inhabitants, in 1961. All classes taken together, the cities in the country counted at the last census, in 1991, 72 million city dwellers more than in 1981. Thus, in the Indian context, relatively moderate rates represent a genuine challenge in terms of housing, education, employment, etc. In India, and no doubt more than elsewhere, the quantitative alone smoothes over the realities.

The problem of adequate definitions/demarcations arises at every turn. The criteria retained by the Census of India are common,[4] but induce notions of threshold. What is more, the passage of an agglomeration from one class to another does not always obey the criteria cited. Thus, the admission of a city to the category of agglomerations with several million inhabitants leads to greater investments by the state. This explains in part

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2. Godard (1994).
3. The Census of India divides towns into 6 classes on the basis of the number of inhabitants. Class I includes "large towns", that is, those having 100,000 or more inhabitants.
4. At least 5,000 inhabitants, a minimum density of 400 inhabitants/sq. km., at least 75 per cent of working males engaged in non-agricultural activities, the existence of "specifically urban characteristics." See Bose (1980).

why the urban limits at times assiduously (and mysteriously) skirt around certain villages (which are, in fact, urbanized) to avoid the fateful threshold of a million inhabitants. Nevertheless, once the pseudo-count has been published, it is used by all without compunction.

A comparison of two Asian demographic giants confirms the inadequacy of the statistical approach. Indian and Chinese data, both relative and absolute, present similarities, whereas the situation of urban spread, the evolution of cities, their place in the economy and their relation to rural zones, differ profoundly. Detailed or thematic approaches must be made in order to discern more clearly the facets of Indian cities, which are both many-sided and deeply marked by their specifically Indian features.

Million-plus cities, "stars" of growth

The presence of numerous large cities constitutes a further element in the Indian paradox: approximately one third of the city dwellers lived in 30 cities of over a million inhabitants in 1995 (Visaria and Visaria, 1995). There were only 13 such cities in 1981 and the 1991 Census enumerated four metropolises exceeding 5 million inhabitants. The Indian cities with populations of millions assert themselves as the "stars" of growth. This phenomenon obeys the classic schema of developing countries, but also the world-wide tendency during the years 1950-1990: in the poor countries, secondary and tertiary activities were concentrated in a limited number of cities situated on the upper rungs of the urban hierarchy; on the global level, there is a veritable "inflation" in the size of cities, at the same time as a generalization of the phenomenon.[5]

The paradox of these great agglomerations stems from their essential role in urban growth, while the potential of the countryside to retain its population and the decline in the migratory flux to the cities are confirmed. Large cities, whose very contrasting image sustains the Indian subconscious traversed by Gandhian ideas: they are at the same time isles of light, key economic centres, and places where dangers loom, very often embodied by Calcutta and its tutelary goddess, Kali. With Calcutta, the theme of the dying city is privileged.

Million-plus cities "are capable" of the best, as of the worst. They constitute favourable places of exchange and innovation, but much greater demands are made of them than they can fulfil, particularly in terms of employment and housing. On the other hand, they have the highest literacy rates and the lowest child mortality rates. These favourable indicators are certainly influenced by the presence of a prosperous élite, but the most disadvantaged nevertheless benefit there from better conditions than in the villages, even if they share among themselves only the "crumbs."

Officially, the very large city does not have full approval and the Indian state encourages notably the growth of small and medium-sized towns, which, however, have many difficulties in gaining ground when they are in competition with the large centres. Urban macrocephaly is not absent from

5. Moriconi-Ebrard (1993), p. 91.

the Indian Union and the country suffers from an unsound equilibrium.[6] In effect, macrocephaly is experienced on the state level. Very often, the capital concentrates economic, political and cultural powers and reaps both the beneficial effects of growth, and the price to be paid for it.

Cities resembling other cities in the Third World

As in other countries of the Third World, the growth of cities accompanies a veritable crisis, which affects above all the most destitute, for whom the "right to the city" is a daily struggle. The shortage of housing is the most visible syndrome, expressed in particular by the existence of slums which shelter between one third and 40 per cent of the Indian city dwellers. Subsidized housing, only little developed because of the lack of means, is in any case hardly allocated to the most impoverished, who then opt for the illegal occupation of urban lands and construct their own dwellings. Nevertheless, the lack of housing does not affect alone the most destitute. Private companies primarily build lucrative upper-class residences for the most affluent. Access to urban land and land speculation constitute one of the most acute problems, and the laws voted in the mid-1970s to reduce inequalities were often circumvented, not to forget the perverse effects which further accentuated speculative tendencies. If the high cost of housing represents a dissuasive factor in terms of integration, confining the villagers to rural zones near large centres, it also constrains the poor to envisage "informal" strategies and contributes to the elaboration of an entire system (occupation, construction, settlement) on the margins of the laws and planning (O. Vaguet, 1986). Of course, the questions of housing and the unequal access of city dwellers to land are only the visible portion of the iceberg of under-development and socio-economic disparities. Unemployment, under-employment, illiteracy, precarious diet and health serve to complete the picture of a city termed in crisis. Lacking a sufficiently developed industrial sector, the tertiary sector is overcrowded and primarily composed of the informal sector, the relations of which to the formal sector are close, but which offers its workers only meagre wages and no security whatsoever.

From the legal to the illegal town—without strict borders—, there are a great many possible declensions. The Indian city presents a countenance characteristic of cities in the developing countries: incompleteness, unattractive, and ill-assorted buildings. Intra-urban contrasts are pronounced, between the central business district (CBD) exhibiting an American-style urbanism and the historical centres which are heavily populated and often slum-ridden. Traces of colonization remain and are inscribed in an often bi- or polynuclear morphology gradually complicated over the course of time (Bourcier *et al.*, 1996). Intra-urban vacant spaces become scarce and new urban peripheral forms emerge, illustrating individual strategies or policies. Indian cities are becoming dense and spreading. In the image of what is to be observed in Europe, the agglomeration strengthens on the small scale by

6. Regarding this point, we do not entirely share the point of view of F. Moriconi-Ebrard when he writes that India is exempt from urban macrocephaly.

extending its territory; on the large scale, the urban appears to be diluted in the rural environment which it transforms, and its limits become more blurred. Peri-urbanization is going on and causes profound changes, in the nearby rural zone as well as in the practice and management of space by city dwellers.

Until now, questions very similar to those encountered elsewhere stand out. However, the city does not constitute an autonomous space, but is an element of the society which it accommodates, and which accommodates it. The specificity of India is the role played by caste in the structuring and functioning of society (Dumont, 1966). The socio-religious hierarchy proper to Hinduism does not constitute a foundational element of *urbanitas* in India, but rather declines Indian *urbanitas*. Louis Dumont, whom one reproached for having ascribed too great an importance to caste in his works on India, responded that caste was neither more nor less central, nothing more (Deliège, 1993).

Indianness in the city (caste and urban territoriality)

Caste, foundation of spatial segregation?

Urbanization is generally presented as going together with "social disorganization", that is, with a weakening, or indeed disappearance, of the organizing principles of traditional societies. This conception inherited from the European 19th century tends to establish a correlation between massive urbanization and industrialization, these two processes inexorably entailing a change in social behaviour to culminate in the "stereotyped pattern of a uniform urban personality and that of a linear evolution" (Roncayolo, 1990). Thus, Bettelheim (1962) wrote that social distance was the most reduced in the large Indian cities, and one perceives the author's conviction that there is an obligatory passage from traditional caste society, which would first take place in these agglomerations as a consequence of the presence of the industrial sector and the new human relationships thereby engendered. This question appears to be central in studies bearing on the actual socio-spatial configuration of Indian cities. Does caste remain the segregating and organizing principle, or is it demolished by new principles of the social division of space? To respond to this question, we shall call to mind the organizing principles of the traditional city, and then give examples of urban quarters which reveal new tendencies: the housing developments of the middle and upper classes[7] on the one hand, and slums[8] on the other.

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7. The information concerning these two types of quarters were collected by us in the course of household surveys. The middle- and upper-class quarters are located in Coimbatore (Tamil Nadu). The notion of middle and upper-classes would merit a lengthy exposition. Very succinctly, one witnesses an inflation of intermediate categories between the poor and the affluent. The plural appears to us to be appropriate because, as much from the point of view of the standard of living, as from the position in professional life, this notion refers to very diverse situations. In our opinion, the middles classes are distinguished from the poor by their capacity to consume, going beyond (although to very different degrees) "subsistence economy" and, above all, by

The anarchic "aggregation" of populations in the Indian city is often contrasted with "the organization of the colonial city (Conté, 1996)." In reality, the configuration of the Indian city, and here more precisely of the Hindu city, obeys very strict principles, whether in the determination of a site, town-planning norms, or socio-spatial organization.

The *Vastu Vidya*, or "secret science of architecture", elaborated during the Vedic period, is anchored in brahmanic ideology. The latter is projected in space with its concern for order and preservation of the degree of purity of the "upper" communities. The *Vastu Vidya*, over a long period transmitted by the architects-priests from father to son, only became the subject of written treatises during the medieval period (AD 750-1200). Town, village, temple, all obey a single principle: their configuration is an image of the cosmos. The latter is symbolized by the mandala, a magic diagram composed of a circle encompassed by a square. Every structure must uphold the cosmic Order and "represent a renewed victory over the danger of dislocation" (Volwahsen, 1968). Simply stated, the town is the image of the cosmos, architecture and urbanism are closely linked to the sacred. Nevertheless, the town is not only that which contains, it is also "contained", and the principles of the Hindu religion concern the functioning of society by structuring it in hierarchical castes. In the matter of spatial organization, the caste system prescribes segregation due to Hinduism's taboos on contact. The *Vastu Vidya* also indicates the position of caste respective of the cardinal points, the orientation of openings, the form of the structure and the number of storeys authorized. The priests decide upon the place where each caste is settled, a location also determined in respect to the other communities (Doshi, 1994). To the highest caste falls the immediate proximity to the centre, which is defined by the temple in temple-towns or villages, and by the palace of the king or raja in political capitals. Thus, the Brahmins live in the agraharam, the quarter reserved for them very near the place of worship. From this point of view, the temple-towns in south India present the plan most nearly approaching the mandala. Their urban structure spreads out in concentric rings around the cella representing the Brahman (absolute being) around which the cosmos is organized. The sacred character of the place diminishes as the distance from the centre increases. The first Vedic towns are initially presented as mono-caste, then as reserved for a few groups occupying political, administrative, commercial or religious functions, who alone lived in the fort (some sort of intramural town). Every morning, the "little people" waited at the city gates to enter and work for the "important society."[9]

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their capacity to project themselves into the future, in this instance, to invest in the future of their children. In India, one currently speaks of the lower middle, middle and upper classes.

8. Slums: under-integrated, and by extension, poor quarters, shantytowns. Those mentioned here are slums in the capital of Andhra Pradesh, Hyderabad.

9. Sekhar (1985), pp. 80-100.

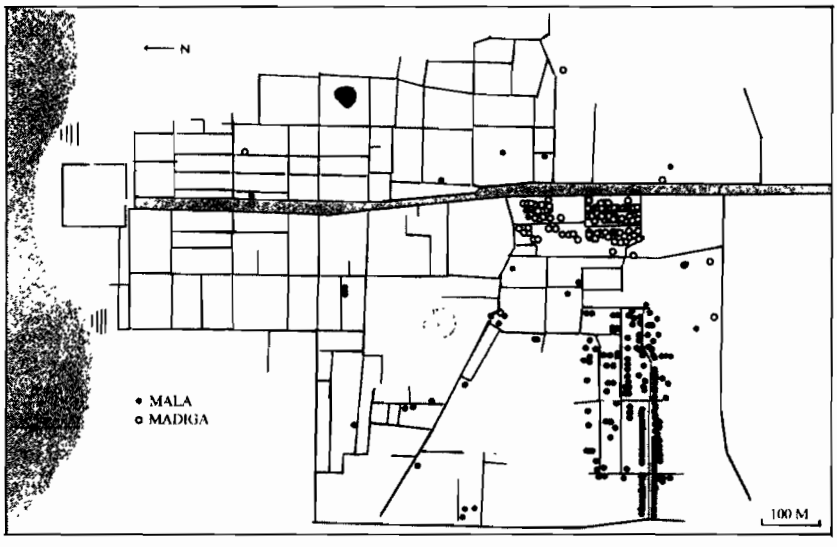

Figure 7.1: Localization of scheduled castes in Amaravathi (Andhra Pradesh)

This model of urban residential segregation was nevertheless influenced from outside. Non-Hindu sovereignties created or besieged towns. Then, beginning in the 13th century, the Muslims strengthened the administrative, political and military function of towns, where they established themselves and implemented a division of space based on an ethnic criterion: original Muslims (as opposed to Indian converts), and more particularly Arabs, occupied the top of the hierarchy. Despite everything, the traditional principles were still applied, as witnesses Jaipur, built in the 18th century according to the norms of Hindu urbanism, and more specifically the spatial distribution of castes in conformity with the model dictated by the *Vastu Vidya* (Doshi, 1994). Beginning in the 18th century, British presence modified not only the localization of towns by favouring coastal settlements, but it also instituted a new ethnic segregation by isolating the European town from the indigenous town; this differentiation is still perceptible today. The new quarters built during the colonial period respond to foreign social and town-planning norms. Thus, the urban model has been from the outset progressively modified.

Since that period, caste seems to have lost ground to the advantage of socio-economic determinants. The multi-caste composition of recent quarters seems to be the unanswerable argument of those who believe in a "normalization" of Indian society. However, does the apparent easing up of segregation prescriptions mean that caste has become inoperative in the distribution of socio-religious groups in space? The examples presented here bear witness to the complexity of the phenomenon, on the one hand as a result of official choices by Indian democracy, which abolished caste (1950

Constitution), and, on the other, inherited relations between traditional ritual status and socio-economic status.[10]

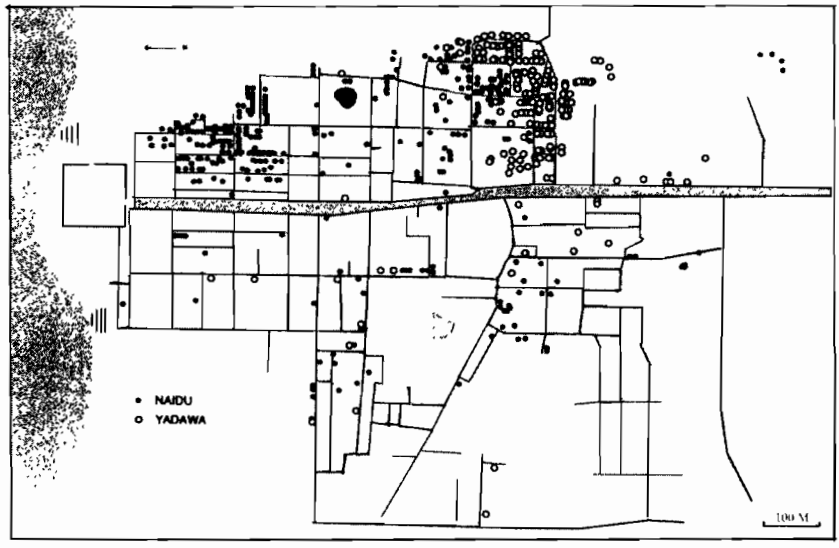

Figure 7.2: Localization of agricultural castes (Naidus and Yadawas) in Amaravathi

A recent study conducted in a small town of 10,000 inhabitants in Andhra Pradesh (Hamon, 1997) attempts to identify the socio-religious changes at work, in both professional and spatial domains. The appearance of new professions does not confine the members of a caste to the exercise of a traditional occupation. Thus, the Vadderas (stone breakers, unskilled road workers) in the town of Amaravathi are divided into two groups: those who continue their traditional occupations, and those who have cycle-rickshaws. It is here seen that, although the collective strategy of incursion into a new profession indeed constitutes a change, this cannot be construed as a transformation. The social promotion of Dalits assumes great importance in this context and the integration of some of them in public office indicates the distance covered, a noteworthy distance when the ritual status of untouchability is considered.

10. This correlation was noted, and reflects what Bettelheim (1962) designates as the historical advantage of the upper castes and the for a long time exclusive access of Brahmins to knowledge; the concept of dominant castes advanced by Srinivas puts however this correlation into perspective (Deliège, 1993). Some groups hold economic and political power without a similar position in the ritual hierarchy.

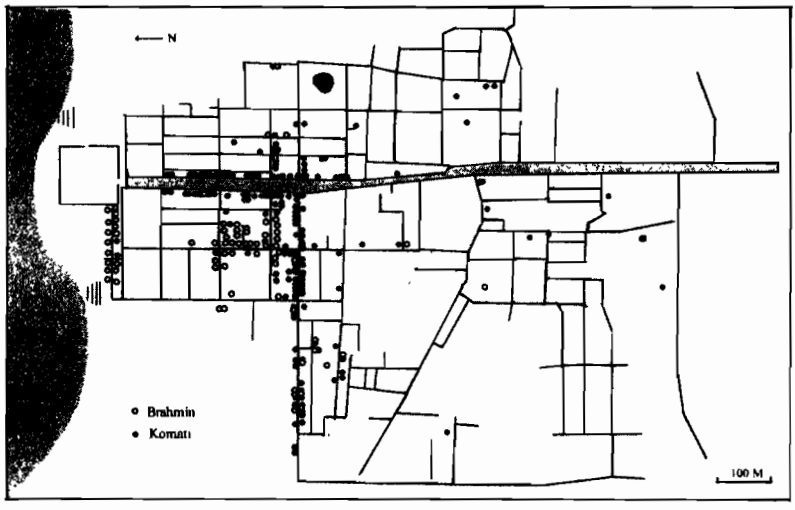

Figure 7.3: Localization of upper castes in Amaravathi

Nevertheless, few among the scheduled castes are those who benefit from such social advancement resulting of a government quota policy. Moreover, the new professions requiring the highest qualifications most often fall to the upper castes. Finally, some occupations resist urbanization, as they are not justified by "modern" economic logic. This is the case for activities closely associated in terms of taboos respected by Hindus, who leave to cobblers, washermen, barbers, etc., the "charge" of being in contact with "polluting materials." From the strictly spatial point of view (Figures 7.1-7.3), and more precisely from the perspective of segregation, taken as a whole the families always make up homogeneous blocks according to caste and, above all, the Dalits are separated from the rest of the town by a space left unoccupied, the "playground", a boundary which few Dalits succeed in crossing. Those who do have recently arrived in Amaravathi as transferred government employees. This signifies that occupational mobility can accompany or be accompanied by residential mobility.

Finally, two facts are prominent in understanding the great complexity of the situation. In 1987, a new caste quarter reserved for the Naidus was created. In effect, the municipal authorities decided to rehouse the community, although its members are far from counting among the poorest in the town. They represent one quarter of the electorate and are easily mobilized by the municipal power in the hands of another peasant caste. Invalidating the preceding event, in 1989, the "Lecturer Colony" housing estate was built, a quarter intended to accommodate teachers from the nearby university and which is, therefore, likely to be multi-caste. In reality, this neighbourhood has very few residents from either extreme of the hierarchy.

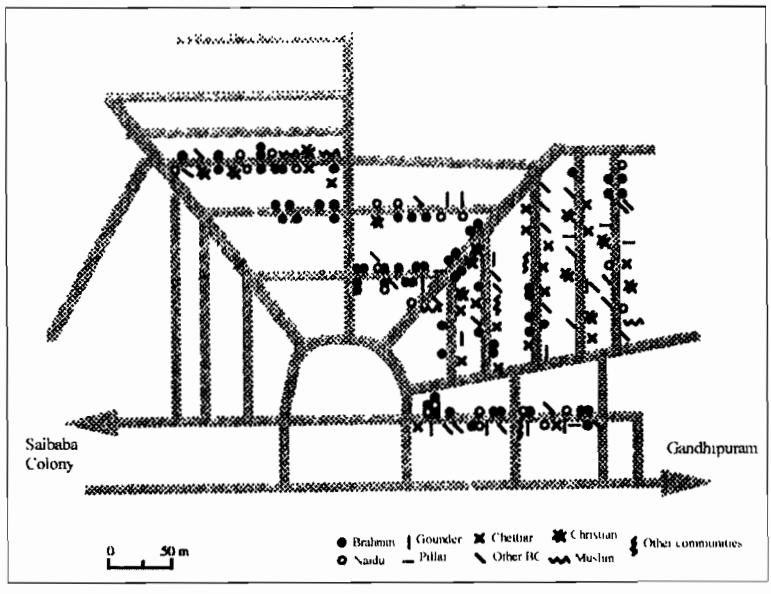

Figure 7.4: Spatial distribution of castes in the Tatabad quarter (Coimbatore, Tamil Nadu)

This study demonstrates the complex web of factors explaining the socio-spatial organization of urban space. Striking, however, is the infrequency of individual mobility. Most often, cases of collective mobility are witnessed, whether in the professional or residential spheres. This seems to confirm the impact of caste as well as its overlapping with socio-economic factors which, moreover, have certainly never been absent from Indian society. Change takes place, but often appears to be "contained" by fundamental principles of Hindu civilization.

The middle classes in the caste town

In the context of growing pressure on urban land and speculation, urbanized areas progress with the production of new constructed spaces. The middle and upper castes are the producers of part of these new spaces. In Coimbatore, a city with over a million inhabitants and ranked second behind Chennai in the urban hierarchy of Tamil Nadu, the peri-urban countryside is particularly shaped by these categories, the numerical importance of which is increasing, in a context of economic growth and, in particular, of industrial diversification (Vaguet and Vaguet, 1992).

For the middle categories and the most affluent, central spaces represent inconveniences. They prove to be inaccessible to the former because of the high cost, notably for whoever would want to own his accommodation. Households consider the acquisition of accommodation to be a priority, a

duty vis-à-vis the children to whom the inheritance will eventually fall. For the latter, the more well-to-do, centrality becomes synonymous with congestion and pollution, thus with inconvenience, while the new quarters are vaunted for the quality of life they would offer. Distance or, more exactly, settling in a peri-urban zone, does little to the isolate families who avail of a means of transport, whether scooter, motorcycle or automobile (private or "company car").

The peripheral housing developments are very diverse; they are distinguished by the size of the plots, the quality of the habitat and the attention given to the landscape (more or less wooded). The location is also of importance; land prices vary, of course, according to this criterion.

The great majority of quarters visited[11] are multi-caste and, in this, differ from differentiated in quarters of traditional petty bourgeoisie in the old parts of the city, which appear as juxtaposed mono-caste cores. Nevertheless, this "mix" of recent quarters must be nuanced, notably at a more detailed level of observation.[12] In effect, the families (a majority of whom are Hindus) counted more than one third Brahmins, one fourth peasant castes (Naidus and Gounders, dominant and rival communities in Coimbatore) and 10 per cent Kshatryas and Vaishyas. Taken as a whole, therefore, 45 per cent of the families are "twice-born"[13] and the remaining 55 per cent are divided among agricultural and service castes of "respectable" or medium level. Scheduled castes and tribes are nearly absent. A monographic study carried out in the same agglomeration (Eliot, 1993, see Figure 7.4) underscored the dominance of upper castes in a residential estate developed by the Tata firm in the 1970s: nearly 40 per cent of the Hindus are Brahmins, while the other castes rank in the middle of the hierarchy. In the old part of the city, in Sukkrawarpet, the findings are similar, but for the presence of two communities traditionally found in this area (jewellers and weavers), in addition to the Naidus and Brahmins. This over-representation of categories of high status can be seen as a indication of socio-spatial segregation.

A tendency was noted in all neighbourhoods to bring together castes in blocks or parts of a street such that the immediate neighbours belong to the same community. This formation of mono-caste cores reveals the combination of two systems of values, with the overlapping of the ritual hierarchy and that of income levels. The Brahmins remain particularly sensitive to the question of contact with other castes. The frequency of classified advertisements is newspapers of the type "flat to let to strict vegetarian" bears witness to the demarcation of a level of "purity", beneath which one is not prepared to accept living together, This goes beyond a mere overlap of caste and class likely to disappear at the end of an "economic recovery" staged by the lower castes.

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11. Family surveys conducted by us in Coimbatore, January 1992, in fifteen middle- and upper-class quarters.
12. The sociologist Grafmeyer (1994) underscores the crucial character of "the question of scale of observation which could appear to be of a purely technical order, (but) in fact involves that of the very meaning which one accords to the idea of segregation".
13. As opposed to 15 to 20 per cent of the Indian population (Pouchepadass, 1984).

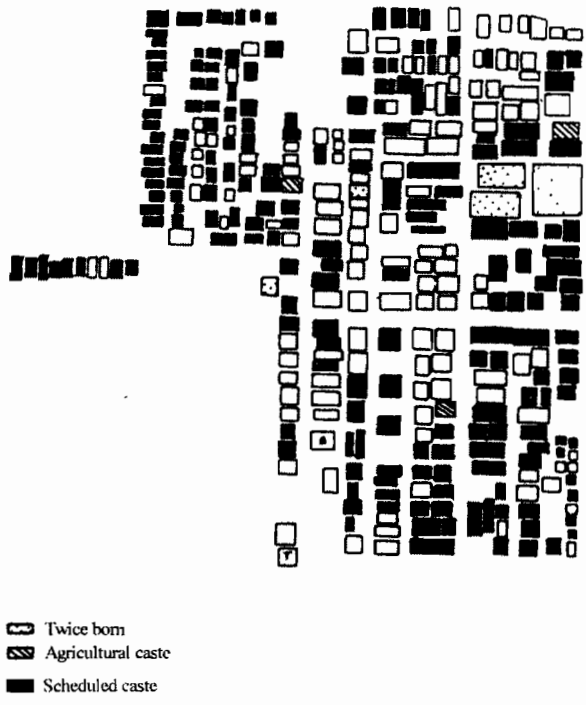

Figure 7.5: Distribution of households in the N'Kunta slum in Hyderabad (Andhra Pradesh)

The slum, territory of untouchability

The slum has the outer appearance of an impoverished hamlet, isolated from the main village. This isolation traditionally affects Dalits and tribals because of the already noted taboos. Based on household surveys conducted in different slums in Hyderabad, the socio-economic and socio-religious profile of these slums was drawn up. Other than the precariousness and poverty, which are of no surprise, the characteristic of these quarters is the clear over-representation of Dalits. In one of the slums, N. Kunta, nearly two thirds of the Hindus (who are here in a large majority) belong to the scheduled castes (see Figures 7.5 and 7.6). The other families consist of either scheduled tribes or service castes who have one point in common: their particularly low status in the Hindu hierarchy (launderers, barbers, cobblers, fisherfolk, etc.). Figure 7.7 illustrates relative grouping according to jati (sub-caste): barbers in the north-east, cobblers in the east, tailors in the north-west. To an area in the south dominated by Dalits (Malas and Madigas) is opposed in the north a more composite area.

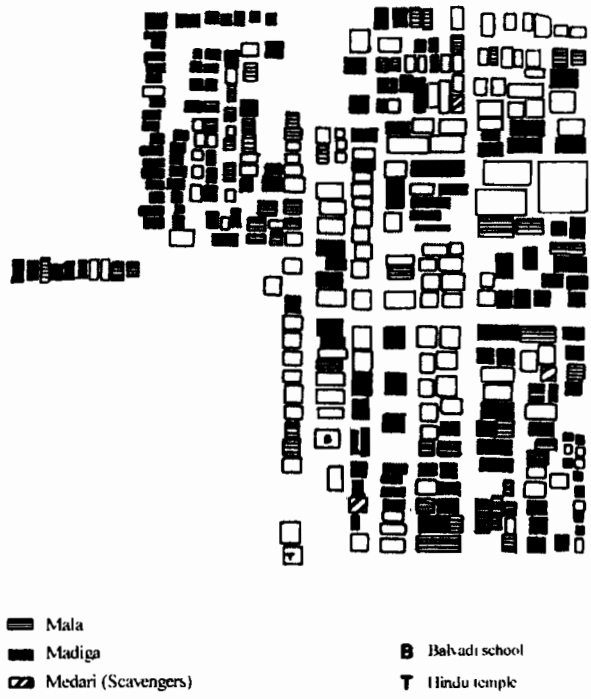

Figure 7.6: Distribution of scheduled caste households, N'Kunta, Hyderabad

The situation in the other slums visited is comparable. Municipal departments undertook a survey in the 1980s, and estimated that three quarters of the inhabitants of shantytowns in Hyderabad were Dalits, as opposed to 9.5 per cent of the city dwellers (Census of India, 1981).[14] Like the Dalits' hamlet in the village, the slum is not a crossing point but, on the contrary, a place to be avoided.

Outside the slum, as within, caste remains a spatial reality. Communities have a tendency to group together and to form juxtaposed homogeneous blocks. The multi-caste character of the shantytown exhibits but a weak evolution; the castes that tolerate the proximity of the scheduled castes themselves belong to lower-status groups. Their own impurity perhaps makes them less susceptible to the risk of pollution. An almost "horizontal" grouping of castes can be seen, wherein the originality and identity proper to the castes are preserved, but the common denominator is the low socio-religious status. In Coimbatore, the sociologist C. Sekhar (1985) notes the same tendency: the relegation of Dalits to 6 (out of 30) municipal wards in which 60 per cent of them are concentrated, while they comprise less than 8 per cent of the city's inhabitants.

14. Dalits account for 16 per cent of the total population.

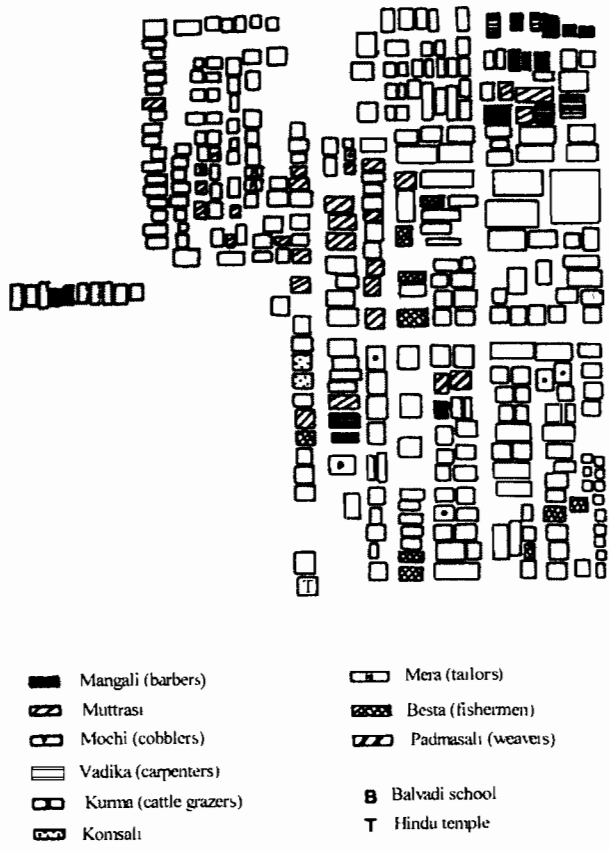

Figure 7.7: Distribution of service castes, N'kunta, Hyderabad

The innovation of the city would reside in the fact that it generates some amount of inter-caste proximity, if not promiscuousness, at a level not found in the village, as if urbanization would have entailed a mitigation of the segregation process, but within well-defined limits. For the majority of castes, the impurity syndrome is still very much alive. In effect, if launderers and scheduled castes are neighbours in a slum, members of upper castes who find themselves in the greatest destitution refrain from occupying a hut there. The Indian shantytown is not only a synonym of poverty, but is also synonymous with impurity, all the more so as the under-integrated quarters occupy urban zones abandoned by the conventional settlement, or peripheral spaces deprived of amenities. Thus, the residents of shantytowns accept to live in a malodorous or dangerous environment, which is, in the eyes of middle and upper castes, outside the norm.

The mechanisms involved in the integration/marginalization of shantytowns in the Indian metropolis are complex. The under-integrated quarter, here as elsewhere, does not elude a negative moral image in which

poverty and delinquency or deviance are associated. The slum is viewed as a core of social pathology, not without similarity to the working classes/dangerous classes of the European 19th century and, more recently, to the low-income housing colonies in French suburbs. Of great interest, but eminently complex from the perspective of the Western researcher, caste, which institutionalizes inequality in Indian society, seems to play a contradictory role. The slums occupy a place equivalent to that of the untouchables' hamlets, and find a place in the city, as the lower castes find their place in society; and, at the same time, the image of these quarters is made negative by their ritual status, adding to the conspicuous poverty the suspicion of social pathology.

Conclusion

It is because the confrontation of the universal and the particular does not appear to us to be a contradictory process, but is rather seen to enhance our considerations, that we focus on urban phenomena and processes observable throughout the world, as well as on the expression of the profound originality of the Indian world. These two aspects, far from existing separately, converge to produce the Indian city.

The major question concerns the role played today by caste. It is not exclusively anthropological in nature, for castes are also spatialized social formations. Caste appears to continue to intervene in the composition of neighbourhoods, although it only partially intersects the actual socio-economic order, and although the logic of Indian cities differs but little from that of other agglomerations in the world. The given examples are far from providing a categorical response, and it would be as wrong to think that caste is no longer actively at work in terms of spatial segregation, as it would be wrong to assert that it remains immune to all outside influence.

Multi-caste areas are often perceived as a sign of the system's weakening. However, the over-representation of upper and middle castes in the well-to-do housing estates and the over-representation of lower castes in the slums confirm the survival of segregation according to socio-religious criteria. The neighbourhoods and the process of drawing closer together observed in recently established quarters certainly confers on them a greater heterogeneity than that of the former cores, but this proximity is contained and appears between communities of comparable or compatible levels.

The relay of caste by "neo-castes", as suggested by G. Heuzé (1982, p.204), enables the continuance of Hinduism's fundamental taboos: the economically upgraded Dalits but rarely lives beside upper castes; by the same token, the poor person belonging to a ritually high status avoids at any price the proximity of "polluting" castes in disadvantaged quarters. These observations are confirmed by matrimonial behaviour, which is still in the majority of cases dictated by socio-religious prescriptions.

8

The "Rurbans" of Delhi

Véronique DUPONT

Introduction

The formation of a metropolitan area around a city of several million inhabitants, such as Delhi, is expressed through specific phenomena, in particular through a decongestion of the urban population, a process of peri-urbanization and "rurbanization",[1] with the formation of suburbs and new residential quarters in surrounding rural zones, the creation of satellite towns, as well as the development of commuting and other forms of circular mobility. These processes have in common the fact that they contribute to an interweaving of urbanized zones and countryside, as well as to a dilution of rural and urban population categories. This progressive fusion is more conspicuously observed at the fringes of the metropolis, but it is also at work in the urban agglomeration by way of the continuous settling of very numerous migrants whose life space extends beyond the urban/rural borders, exceeding the limits of the city to incorporate their native villages. The integration of urban and rural spaces extends beyond the geographic continuum through circular movements of individuals between the different places with which they have relations (Dupont and Dureau, 1994). In this case, the integration of urban and rural spaces is no longer physical, but functional in nature. Many inhabitants of metropolitan areas thus appear to be neither exclusively urban, nor exclusively rural, whether it be a matter of populations in the rural hinterland in the process of urbanization, of new country dwellers, namely city dwellers who have shifted their residences into the surrounding rural zones or, of migrants who maintain relations of a

1. By the term rurbanization, we understand here, according to the definition given by P. George: "the fixation in peri-urban countryside of residences of city dwellers, the interweaving of rural and urban spaces", that is, "one of the forms of peri-urbanization[...]", without "continuity between the town and the rurbanized countryside" (1993: 411).

diverse nature (economic, social, emotional, etc.) with their native villages. These are the various population categories which, by their inscription in spaces in the process of transformation, by their mobility or composite identity, attain to a certain symbiosis of rural and urban qualities, and whom we here group together under the neologism "rurbans."

The analysis of residential and economic practices of these "rurbans", considered both as witnesses to (at times under constraint) and as actors in the process of urbanization, offers a relevant perspective from which to better understand certain essential dimensions in the development of large metropolises. The example of the Indian capital enables of a particularly clear observation of the processes at work as a consequence of demographic growth and geographic expansion, as well as of the urban morphology and socio-spatial refashioning. Furthermore, in the context of a predominantly rural country (74 per cent of the population lived in the countryside in 1991), the study of "rurbans" in a megalopolis such as Delhi can also add to the understanding of the urbanization process from the perspective of a re-evaluation of the urban-rural dichotomy.[2]

Metropolization and dilution of urban/rural borders

Urban growth

The development of Delhi and its metropolitan area bears witness to a major tendency in the urbanization process in India: an increasing concentration of the urban population in megalopolises of millions of inhabitants, in the context of an urban population which remains very much a minority on the nation-wide scale, despite a remarkable absolute magnitude (218 million urban dwellers in a total population of 844 million, that is, 26 per cent, according to the 1991 Census).[3]

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2. This study is included in a broader research project on the spatial mobility of populations in Delhi (see Dupont, 1997), financed by the French Institute of Research for Development (IRD, formerly ORSTOM) with supplementary financing by the CNRS in the framework of the Concerted Action in Social Sciences ORSTOM-CNRS and of PIR-Villes. Our research in Delhi also belongs to a comparative programme entitled "Residential practices and impact on the dynamics and the segmentation of large metropolises. Study of the forms of spatial mobility of the populations of Bogota and Delhi", co-ordinated in collaboration with Françoise Dureau, who directs the research in Bogota (see Dupont and Dureau, 1997). In India, our programme was conducted in collaboration with and logistically supported by the Centre des Sciences Humaines in Delhi (French Ministry of Foreign Affairs) and the Institute of Economic Growth (Delhi).

3. On the definition of urban areas in India, see the papers by Landy and Racine in this volume.

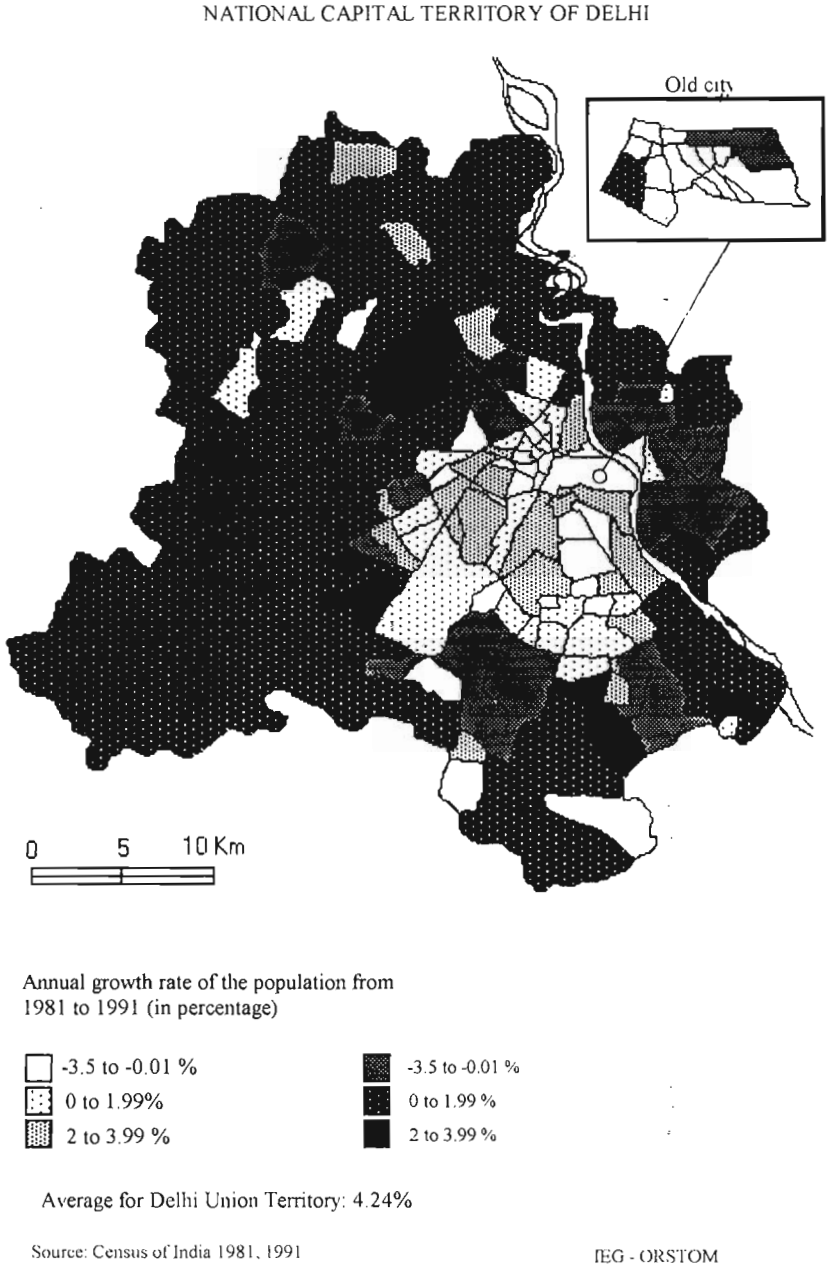

Figure 8.1: Annual growth rate of the population from 1981 to 1991 in different census charges of the National Capital Territory of Delhi

The demographic evolution of the city of Delhi is, first of all, marked by the country's turbulent history. Promoted to capital of British India in 1911, Delhi became the capital of independent India in 1947, at a time when the city was undergoing a massive transfer of populations after the partition of India and Pakistan. Thus, only shortly after 1947, Delhi, then counting 900,000 inhabitants, had to accommodate 470,000 refugees from west Punjab and from Sindh, while 320,000 Muslims left the city for Pakistan.

Since 1961, Delhi has been the third largest Indian metropolis, behind Mumbai and Calcutta. Furthermore, among the 12 cities counting more than one million inhabitants in 1981, Delhi has experienced the highest demographic growth of the last decades: 5.1 per cent annually from 1951 to 1961, 4.5 to 4.6 per cent from 1961 to 1981, and 3.9 per cent annually, from 1981 to 1991. Its population increased from 1.4 million in 1951 to 8.4 million in 1991, and today probably exceeds 10 million inhabitants.

The general demographic evolution of the urban agglomeration of Delhi, in fact, conceals a depopulation of the central quarters in the Old City, and a rapid growth in the peripheral quarters, as shown in Figure 8.1 for the intercensal period 1981-91 (Dupont and Mitra, 1995).[4] This centrifugal pattern of population dynamics, first revealed in the decade 1961-71 (Brush, 1986), continued and extended beyond the city limits. Thus population growth from 1981 to 1991 was more rapid in the rural zones of the territory of Delhi than in the urban agglomeration proper: 9.6 per cent, as opposed to 3.8 per cent respectively (in the urban/rural limits of the 1991 Census). These growth rates are to be compared with the natural growth rates during the same period, that is, 2.5 per cent annually in the rural zones and 2.1 per cent in the urban zones, which underscores the contribution of net in-migration. Of course, population densities remain significantly lower in the rural zones than in the urban agglomeration (12 inhabitants per hectare, as against 135 in 1991), and while the former covered 54 per cent of the total area of the territory of Delhi, it only accommodated 10 per cent of its total population. Those implicated in migration in the "countryside" of Delhi remain comparatively a minority, but these movements are nevertheless revelatory of a real attraction exerted by the rural hinterland of the capital on populations from other Indian states, or those who have left the urban agglomeration of Delhi in search of less congested and financially more affordable localities in which to settle. This process of peri-urbanization around the capital is also expressed in economic terms, insofar as the sector-based composition of the working population residing in the rural zones of the territory of Delhi appear to be closer to that of the urban population (with only 19 per cent of the working population employed in the primary sector, as compared with 83 per cent for the total rural population of India, and 15 per cent of the urban population at the national level). The rapid growth of the rural population of the territory of Delhi and its economic characteristics underscore the discrepancy between administrative demarcation of the urban agglomeration and the concrete modalities of the urbanization process.

4. It is interesting to recall here that the loss of population in the central quarters of some large urban agglomerations is a phenomenon that has been frequently observed in the industrialized countries (Ascher, 1996; Dogan and Kansar, 1988).

Contribution of migration

Migration has played a major role in the demographic evolution of the capital. The relative contribution of net migration to the total growth of the population of the territory of Delhi (urban agglomeration and rural hinterland) decreased from 62 per cent for the period 1961-71, to 60 per cent for the following period, 1971-81, to then fall off to 50 per cent during the last intercensal period, 1981-91. In 1971, migrants born outside the territory of the capital constituted 50 per cent of the population of the urban agglomeration of Delhi and 40 per cent in 1991. During the five years preceding the 1991 Census, roughly 780,000 migrants settled in the urban agglomeration. Over two thirds of all migrants living in Delhi, in 1991, were from neighbouring states in north India, Haryana, the Punjab, Rajasthan and Uttar Pradesh.

The Indian countryside remains the main source of migrants to the capital: 57 per cent of all migrants (coming from within the country) hail from rural areas. This result is not surprising in a predominantly rural country, but it is worth noting in order to assess the rural ties of the metropolitan population. In particular, persons of rural origin are largely in the majority as regards migrants from states neighbouring the capital (with the exception of the Punjab): 59 per cent for migrants from Haryana, 63 per cent for those from Rajasthan, and 64 per cent of the migrants from Uttar Pradesh. The rural mooring of very many migrants to Delhi will be shown in the case of a specific sub-population with revealing residential practices, but who have only been little studied: the houseless migrants in the Old City.

Spatial expansion and urbanization of the fringes

Delhi's growth also corresponds to a spatial expansion of the urban agglomeration through the annexation of rural zones. From the beginning of the century until 1991, 185 villages were incorporated in the urban limits of Delhi, 25 of which during the decade 1981-91. From 1911 to 1991, approximately 657 sq. km. of rural land were urbanized, representing nearly 95 per cent of the urban territory in 1991 (Diwakar and Qureshi, 1993). Delhi's geographic situation, in the Gangetic plain, and more precisely the absence of any real physical barrier to urban progression (the Aravalli Hills to the west and south do not constitute an effective obstacle), have favoured the multi-directional spreading of the city.

The urbanized villages are subject to very great pressure on land and important transformations of their economic functions, of their morphology and their population (Sundaram, 1978: 115; Lewis and Lewis, 1997: 26-27, 30-31). The habitat is transformed in response to the housing needs of numerous migrants with low incomes who find in the urban villages rent levels which are distinctly less than in the other quarters of the capital. The areas surrounding the fringe villages are also privileged places for the emergence of unauthorized colonies. This occurs outside any town-planning

regulations on agricultural lands where no building is permitted, purchased from the farmers by private promoters. Deprived of access to certain services as a result of their illegality, the price of land and rent levels there are low when compared to prevailing prices in authorized quarters that benefit from municipal services. In consequence, these residential colonies attract chiefly low or medium income groups of the population who do not avail of sufficient financial resources to acquire or rent accommodation in the authorized quarters of the capital (Sidhu, 1995). Some of the unauthorized housing estates, however, can include luxury buildings, in particular in the rural fringes of southern Delhi, where numerous luxurious villas surrounded by vast parks are located; built on agricultural lands they are permissible only within the limitations of the planning regulations meant for farm houses with a view of protecting green spaces and cultivated areas. De facto, these limitations are often overstepped by well-to-do city dwellers attracted by a rural living environment, at the gate of a capital that belongs to the most polluted cities in the world.

Public authorities (represented in Delhi by the Delhi Development Authority, the government agency responsible, since 1961, for the elaboration and application of the master plan) have also played a major role in the urbanization of the rural fringes of the capital. In its planning intentions, the government set aside large land reserves—unique in a developing country—, primarily through the purchase of agricultural lands, in order to introduce various housing development programmes: direct construction of collective blocks of flats consisting of flats for different income categories and sold to private households; development of sites sold to co-operative societies on the basis of long-term leases (99 years) for the construction of group housing; land servicing and allotment of plots for resettlement of inhabitants from the centrally located slums and squatter settlements.[5]

The direct control by the Delhi administration of lands which can be urbanized induced some large private property developers to implement residential housing schemes outside the administrative limits of the territory of Delhi, well beyond the urban perimeter of the capital in the bordering states of Haryana and Uttar Pradesh. Property development companies can acquire there large tracts of building land in accordance with the development plans of the metropolitan region which endeavours to favour the decentralization of the population (N.C.R.P.B., 1988). Some property developers make use of the very outlying character of these new residential quarters to include environmentalist considerations among their selling points to attract city dwellers in search of a better living environment. This process of rurbanization and the residential practices of new country dwellers will be illustrated with the example of DLF Qutab Enclave, a

5. This policy, which resorted to coercive measures, underwent a particular increase in scale during the state of emergency (1975-77), during which approximately 700,000 persons were forcibly displaced, evicted from slums and squatter settlements at the city centre and sent to 44 "resettlement colonies", which, at that time, were located in very peripheral zones.

recently developed residential complex in the rural fringe to the south of the territory of Delhi.

Development of satellite cities and creation of new towns

The slowing of the rate of growth in the urban agglomeration of Delhi (as specified above), in the absence of a fall in the natural growth rate,[6] corresponds to a redeployment to the advantage of the development of peripheral towns. This population dynamics extends the trend of population decongestion and spatial expansion of the capital beyond the bounds of administrative jurisdiction, and engenders a heightened circulation of population in the metropolitan area. Thus, the population of the first urban ring around the territory of the capital (consisting of six agglomerations identified as the Delhi Metropolitan Area towns—(see Figure 8.2) increased at a much higher rate than the urban agglomeration of Delhi. The difference appears very noticeably in the intercensal period 1961-71, becomes more pronounced in the period 1971-81 (127 per cent, as opposed to 57 per cent in decennial growth), and is still notable in the period 1981-91 (86 per cent, compared with 47 per cent). The development of peripheral towns, including the formation of new industrial towns such as Noida, also lies within the scope of the wilful planning policy of the metropolitan region, initiated in the 1960s and motivated by the wish to control the growth of the capital and to slow down the streams of in-migration by redirecting them to the towns in the region.[7] However, the initial stress laid on the development of towns in the first ring reinforced the attraction exerted by the capital and intensified commuting. In 1987, it was estimated that approximately 150,000 commuters travelled daily to Delhi from towns in the metropolitan area (N.C.A.P.B., 1988: 9). By the very reason of their proximity to Delhi, these peripheral towns have not succeeded in developing into self-sufficient centres of growth and most of them can be considered as mere satellite towns, alleviating housing problems in the capital, but exerting a heightened pressure on its amenities.

The example of the town of Noida, located on Delhi's east periphery and a direct product of the town and country planning policy, will enable us to analyze a case of the creation of a new town by annexation of agricultural lands, and to demonstrate the effects on the original populations of encircled villages. Before taking up the third, and final, stage of this demonstrative itinerary across the Delhi Metropolitan Area, we shall return to the point of departure, the historical centre of the capital and its pavements occupied by a population of houseless migrant.

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6. The natural growth rate remained steady in the territory of Delhi as a whole: 2.1 per cent per year from 1971 to 1981 and from 1981 to 1991.
7. It must, however, be mentioned that a first generation of new towns developed in the 1950s, such as the new industrial town of Faridabad (on the southern periphery of the capital) which was initially planned for the rehabilitation of refugee populations from West Pakistan after the partition of the country.

The pavement and the village: live space of the houseless in the old city[8]

The houseless population represents a very specific segment of the urban population, the relative weight of which remains very slight (estimated at 1 per cent of Delhi's total population). Its demographic impact in absolute terms is, however, far from negligible, being approximately 100,000 persons, and its presence is particularly conspicuous in the Old City. The most pertinent characteristic for our purpose is that the houseless population in the Old City is primarily composed of migrants, the great majority of whom are of rural origin (three quarters of the sample surveyed), which illustrates a borderline case of urban integration and a fusion of city and village identities realized at the individual level, resultant of circular migration. Shelterless migrants are certainly not the only ones to practise this form of mobility between native village and city of migration; such type of circular mobility is to be observed also among migrants settled in slums or among those belonging to the higher socio-economic strata (for Delhi, see: Basu, Basu and Ray, 1987; Banerjee, 1986: chap. V). On the other hand, perhaps better than for any other category of city dwellers, the residential practices of the houseless population support a vision of the city reshaped by the migrants' space, "that of movement which suggests viewing the city, not as a place of sedentariness, but as a cross-roads of mobility" (Tarrius, 1993: 51).

The historical centre of the capital, Old Delhi, where we have concentrated our study of the houseless (see Figure 8.2), is characterized by extremely high population densities (on the average of 616 persons per hectare, in 1991), combined with a very high concentration of shops and small industrial enterprises. While a process of depopulation is at work in the old and deteriorating housing stock, economic undertakings are, on the contrary, increasing. This proliferation of commercial activities, manufacturing workshop, services, providers of numerous informal jobs, has attracted a floating population of male migrant workers, frequently unqualified, who come without their families and whose residential integration remains extremely precarious; many of them are to be found at night sleeping at the workplace, beneath verandas at the bazaar, in the night shelters opened by the municipality for the houseless, or simply on the pavements, in parks and other outside public spaces.

The analysis of the conditions of integration in the city of these city dwellers without abode, of their economic strategies, of the relations they maintain with their native place and their projects, enables one to reconstitute their life space and identify its structuring poles.

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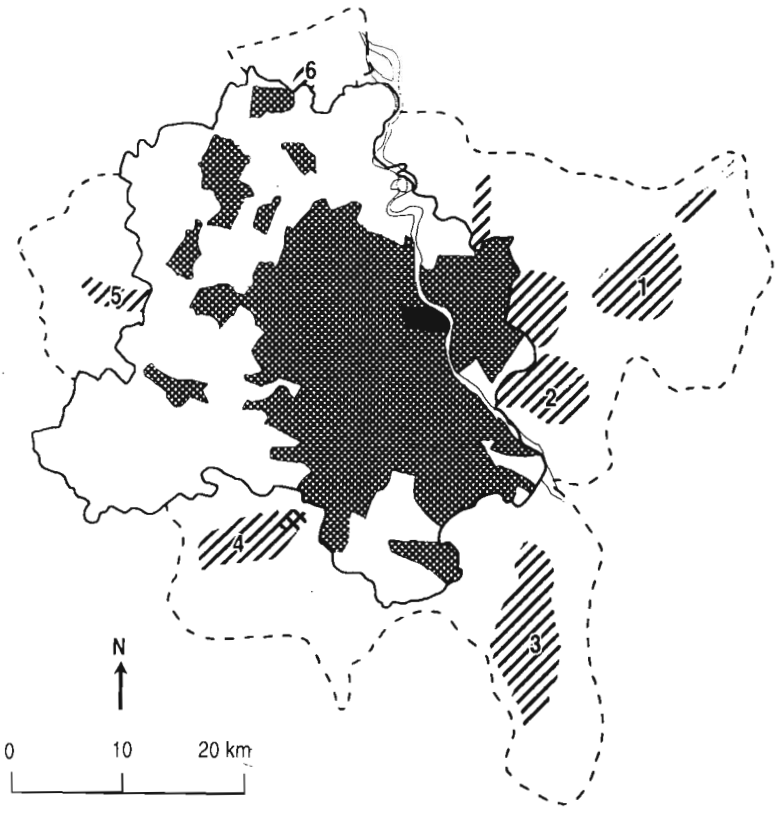
8. The information and data used in this section result of socio-economic surveys that were conducted in January-March 1996 among a sample of houseless persons in Old Delhi. Two types of observation were conducted: a statistical survey covered a sample of 248 persons selected by area sampling in the main outside concentrations of the houseless and in 6 night shelters managed by the Municipality in Old Delhi; and in-depth interviews conducted simultaneously (with the collaboration of Dhananjay Tingal) among a sub-sample of 36 individuals chosen in a random manner (see Dupont and Tingal, 1996).



Towns in the Delhi Metropolitan area

1 - Ghaziabad + Loni (Uttar Pradesh)
2 - Noida (Uttar Pradesh)
3 - Faridabad-Ballabgarh (Haryana)
4 - Gurgaon (Haryana)
5 - Bahadurgarh (Haryana)
6 - Kundli (Haryana)

Source: Composed on the basis of the following maps:
- "Map of Delhi" in *Census of India 1991, District Delhi, District Census Handbook*, Directorate of Census Operation, Delhi.
- "Land use 1986-87" in: *Regional Plan 2001. National Capital Region*, National Capital Region Planning Board, December 1988.
- "Delhi Metropolitan Area" in: *Master Plan for Delhi, Perspective 2001*, Delhi Development Authority, August, 1990.
- *Eicher City Map, Delhi*, Eicher Goodearth Ltd, New Delhi, 1996.

(Map drawn by R.M.S.I., New Delhi)

Figure 8.2: The Delhi metropolitan area: the central urban agglomeration and its peripheral towns

Conditions of integration in the city

The initial information regarding the living conditions and employment opportunities in Delhi, as well as the assistance received upon arrival in the city, reveals the role of the network of relatives and persons originating from the same village, or the same region, in the circulation of information and integration into the city of houseless migrants—as is currently to be observed in the case of migrants whose residential integration is not so precarious (see, for example: Banerjee, 1986).

Other than the attraction proper to a large metropolis and its multiple employment perspectives, the choice of Delhi is often influenced by the presence of family members, relatives by marriage or fellow villagers, who are already working in the capital and transmitting information pertaining to employment possibilities. Among those who acknowledge having been assisted in their initial integration into the city (representing two thirds of the persons interviewed), in finding work or a place to sleep, the network of relatives and fellow villagers is mentioned in the majority of cases, indicating that the actual condition of the houseless does not necessarily mean that these migrants operate in a familial and social vacuum. During their stay in the city, the workplace and the community of workers in the same type of occupation come to provide the main network of socialization; another significant network which gathers momentum among houseless people is based on village or regional affiliation.

From this perspective, an interesting type of migration among the houseless is to be noted: the migratory channels rooted in familial or village tradition. It is here a matter of, for example, cycle-rickshaw drivers, hand-cart pullers, or also construction workers, working in Delhi on a seasonal basis, thus perpetuating a practice initiated by their fathers or by other villagers. These migrant workers follow a well-established channel, going to the same labour market, to the same garages renting rickshaws, and sleeping at the same places outside. Such groups of villagers are found in the *Khari Baoli* wholesale market, or under the verandas along *Asaf Ali Road*. By way of example, a group of 25 or 30 persons from the same village in Uttar Pradesh could be identified in the aforementioned street, all sleeping side by side, even though belonging to different castes, sometimes cooking together. They also return as a group to the village for the main festivals, and every month one of them returns to take the savings of all to distribute among the respective families. Thus, a community life has been reconstituted on the pavements of the capital, based on the belonging to the same place of origin, and this link transcends caste differences, at least during the temporary stay in Delhi, where earning money is the predominant preoccupation.

Residential logic and saving strategies

Financial constraints and uncertain incomes—primary concerns among these generally casual workers—without doubt represent a major obstacle to obtaining lodgings. Nevertheless, this factor must be considered in relation to the other intervening explanatory factors, forming a system in which elements of choice are often present. Thus, some of the houseless, who avail

of a sufficient saving capacity to rent accommodations (together or shared with others), give priority to sending money to their families, or to long-term saving for future investment projects in the locality of origin. In other words, preference is given to the living conditions of the family in the place of origin, over the migrant's living conditions in Delhi, and to the future, over the present.

The distance between the places of sleep and work proves to be another fundamental element in the economic and residential strategies of the houseless. Most of those without lodgings who sleep in Old Delhi work in the old city itself (78 per cent of the houseless workers surveyed), or in adjacent quarters, within walking distance, often within ten minutes' walk from the place where they sleep.[9] A location near the workplace or the source of employment opportunities enables the worker to reduce—or entirely eliminate—transport expenses. It also makes it possible to avoid the weariness of daily commuting and to ensure adequate rest, another vital factor for manual workers in activities requiring intense physical effort. Moreover, for day-labourers who have to go every morning to a labour market to get recruited, such proximity increases the probability of obtaining work.

The residential practices of the majority of houseless would, therefore, indicate elements of economic rationality intended to maximize savings and remittances to the family at the locality of origin through the minimization of expenses for housing and transport. When the logic of the situation of the houseless in Delhi is an integral part of family strategies rooted in the native place, priority being given to the economic condition of the family in the village at the cost of the living conditions of the migrant in the city, his shelterless situation is likely to last throughout his stay in the capital.

Relations maintained with the native milieu

In fact, most of the persons without shelter who were surveyed in the Old City have family members in their locality of origin and the majority of them go there more or less regularly to visit—at least once in the last two years—, or, in the case of newly arrived migrants, intend to do so. Furthermore, roughly half of those who have families in their villages (or native town) provide them with financial support, to which is often added the purchasing of clothes or household items when visits are made.

The attachment to family and native place is once again shown by the projected future return to the "village" (in the next years, or much later), a wish shared by the majority of the houseless interviewed. Future investment projects are frequent, in particular many plan to open up a grocer's store or another type of shop in the village, to purchase more agricultural land and, more generally, to invest in agriculture. To carry out their investment projects, the migrants interviewed intend to raise funds from their own

9. Hence, 80 per cent of the houseless workers of the sample surveyed walk to their place of work, the average time of commuting being only 16 minutes each way, with 57 per cent of them taking 10 minutes or less.

savings, supplemented if necessary by family contributions. Some of these investment projects will perhaps never materialize; others appear to be viable, given the saving potential of the concerned migrant workers. This indicates an appreciable degree of economic dynamism among certain shelterless migrants; one can also see therein an economic calculation entailing temporary sacrifice in terms of housing conditions in the city so as to improve the economic situation in the place of origin.

Typology of houseless migrants according to the degree of attachment to their place of origin

At the end of this initial investigation, a typology of shelterless migrants living alone in the Old City can be drawn up, according to the extent to which they are rooted in their native places. In particular, two distinct and diametrically opposed situations can be identified, with the entire range of intermediary situations.

Corresponding to the highest degree of familial integration and attachment to the village, are the seasonal migrants who come every year to work in Delhi for a few months, habitually during the agricultural off season, and who directly support their families in their place of origin. Near this group are the married migrants whose wives and children (if there are any) remain in the "village" with the rest of the extended family, and who regularly send remittances, as well as married migrants who contribute to the family income; these two groups regularly visit their families. These remitter-migrants exemplify a principle of familial solidarity transcending residential unity; this is a current characteristic of the migration process, especially rural-urban migration, both in India and in other developing countries. The point which deserves to be underscored here is that the condition of houselessness of the migrant in the city does not prevent the exercise of this solidarity; in fact, it is precisely this condition which makes it possible for the migrant to financially support his family.

Having the lowest degree of attachment to the community of origin are houseless persons—particularly children—, involved in a process of individualization and anomie, who have fled their homes as a consequence of acute family tension,[10] often accompanied by violence, and who subsequently have severed all ties with their family and native place. Given the circumstances of departure from home, these migrants, or "refugees", cannot rely upon family and village networks for their integration into a new city.

The rupture with the traditional basic institution, the family, however, only applies to a limited section of the houseless. Although living alone in Delhi, the majority of the houseless maintain diverse relations with their families in their native locality, the latter remaining their basic reference. In

10. 24 per cent of the total sample of houseless cited family tension of this type as their primary reason for migrating to Delhi. Furthermore, about one third of the 36 respondents selected for in-depth interviews mentioned similar tensions as significant in their migration trajectory.

fact, the reference to the native village, a structuring pole of the life space, could more particularly be significant for migrants without shelter (excepting, of course, those who have severed ties with their families), compared to migrants whose residential integration is less precarious. In fact, this reference, which also comprises a mythical component, no doubt enables the pavement dwellers to better accept their present living conditions in Delhi and to justify the hardship and degrading aspects of their situation. "City dwellers by compulsion, yet villagers by heart", could thus summarize the double identity of the majority of migrants without abode.

Moving away from the historical centre of the capital and its houseless migrants, whose roots are in the village, the fringes of the urban agglomeration offer the example of another type of integration involving urban and rural spaces.

The city and the countryside, or residential strategies of the new country dwellers[11]

Requested to offer a solution to the urban problem, French humorist Alphonse Allais once suggested "to put the towns in the countryside." The implementation of his recommendation appears to have been attempted in the region surrounding Delhi. *DLF Qutab Enclave*, presented by its promoters as "the most environment friendly township" of "modern times", "far from the madding crowd" of Delhi, will serve as illustration in the analysis of the process of rurbanization around the capital and of the residential practices of the new country dwellers.

Delhi's spatial expansion, manifested in an anarchic urbanization of the fringes, along with illegal land transactions and unauthorized building, has given rise to the intervention of planners in the border states of the territory of the capital. In 1981, the Haryana government placed vast tracts of agricultural lands around Gurgaon, one of the six towns in the metropolitan area, under the control of a master plan. It is within the framework of this regional development plan that the DLF Qutab Enclave residential complex, and other neighbouring housing estates of the same type, were constructed by private property developers in the Gurgaon vicinity (see Figure 8.2).

Located 23 kilometres from the centre of the capital and covering an area of 1,000 hectares, DLF Qutab Enclave is one of the largest residential estates developed by a single property company on the periphery of Delhi. The ambition of its developers was to build a prestigious 'integrated mini-city' provided with all the modern urban infrastructures and services, while at the

11. The information and analysis contained in this section are based on: interviews with developers of the Delhi Land and Finance (DLF) corporation and a study report by this company (DLF, 1993); direct field observations and a collection of basic information on infrastructure and environmental characteristics of the new housing estate by M. Sidhu (Sidhu, 1995, Chap. 6); a statistical survey covering a sample of 164 households (or 598 persons) carried out in April 1995 in the residential estate of DLF Qutab Enclave; and, in-depth interviews conducted in 1997 by M. Sidhu among a sub-sample of 21 residents (Sidhu, 1997).

same time proposing an ecological alternative. Potential residents can acquire there serviced plots of diverse sizes to construct their own houses—often veritable villas—, or to purchase flats ready for immediate occupation in a block of flats. Several commercial centres were built, as well as a recreational centre. Sites for the construction of clinics and schools have also been reserved in the development plan of the township, and some establishments are already functioning; the presently existing facilities, however, are not yet sufficient to respond to the needs of the residents. The maximum accommodation foreseen is 60,000 dwelling units, of which 46,000 are in individual houses, representing together housing for more than 250,000 inhabitants. Land development began in 1982, but at the beginning of 1995, most of the plots were still unoccupied or under construction, and only 3,500 families had effectively settled there. It would therefore seem that this very ambitious project for the development of an upper and middle class township outside the capital has not had the success anticipated by its promoters, notwithstanding a strategic location at the juncture of three major trunk roads.

The sales argument privileged in the advertizing campaign of the developers emphasizes a better quality of life and, in particular, a select environment offering large open spaces, far from the noise, the crowd and the pollution of the capital. Some slogans and hoardings are intended to give a pastoral image of the new township, such as a cock crowing with the caption, "morning raga at DLF." Real chickens and their farms are, however, kept well apart from the new country dwellers and their "country" residences. Villages pre-existing the development of the area remain enclaves, which are not integrated in the development plan. The land use plan reserves approximately 10 per cent of the total area for parks and green spaces. However, to date, the environmental alternative extolled on hoardings is expressed on site by large tracts of arid land, parks which are relatively rare, especially in the most recently developed sectors, and a tree cover which on the whole remains rather sparse on account of the recent nature of plantations and their unequal growth. In response to one of the initial slogans of the developers, "The great escape. Get away to a whole new experience", a bitter critic could well have parodied, "For a return to nature... with one's back to the villages, and without verdure."

As shown by the reasons cited by the inhabitants of DLF Qutab Enclave to explain their choice of residence, environmental considerations are certainly not absent. Thus, the search for a better living environment and more space were reasons advanced by 24 per cent of the residents surveyed (most of the time in combination with other reasons), particularly among those who formerly lived in Delhi itself (who represent 65 per cent of the residents). For those who were already owners of houses or flats in the capital, these comparative advantages constitute the main reason for their new acquisition. Some families residing in Delhi even use their villas in the new quarter only (at least until present) as a secondary holiday residence for the weekends. In the case of those having newly acquired property, the choice of DLF Qutab Enclave also responds to financial considerations, as the cost of land and flats are there much more affordable than in the capital

itself. For some, the purchase of a plot or flat in this new estate is thus merely a speculative property investment.

The indispensable condition for having access to real estate outside the capital, without exorbitant cost, and to a better environment, is the possession of a personal vehicle to make possible the daily journeys to distant workplaces and to continue to maintain one's social network through visiting. About half of the economically active inhabitants surveyed in DLF Qutab Enclave work in Delhi proper; at the same time, bus services, either public or chartered by the developers, are not very frequent. From a more general perspective, in the absence of a network of mass public transport efficiently serving the capital and its metropolitan area, the spectacular augmentation of individual transport has made the establishment of medium and high status residential quarters possible in the rural fringes for those who can financially support daily commuting over long distances in cars or on scooters, or who compensate high transport costs by a lower cost of housing.

Similar phenomena of distant and discontinuous urban extension, connected with the diffusion of the use of automobiles, have been observed in the large metropolises of the industrial countries (Ascher, 1995; Bieber and Orfeuil, 1993; Haumont, 1993). In the context of the Indian capital, such developments are of a more recent nature. Transformations on the urban periphery and rural fringes are also more rapid there and can quickly invalidate the term of rurbanization as applied to the process of urbanization consequent to the building of such housing estates as described above. At the inception of their development, the discontinuity of built-up area between the city and these residential quarters in the rural fringes was certainly much more pronounced than today, and the countryside more present. The extension and increasing density of construction alters the panorama, contracts the rural space while encircling the village cores, and in the years to come these housing estates will be progressively transformed into a continuous suburb. The example illustrates, in fact, the difficulty in "demarcating urban and rural spaces" and in "distinguishing what is continuous suburb and discontinuous peri-urban" in a context of rapid urban growth common to numerous metropolises in the developing countries (Steinberg, 1993: 10-11).

New town and encircled villages, or the forced urbanization of farmers[12]

The final example to be examined, that of a new urban satellite town, Noida, reveals a process of integration of rural and urban populations resultant of the planned interweaving of spaces—original villages and new town—, with spectacular effects for the urbanized villages.

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12. The information and analysis contained in this section are based on: direct field observations; interviews with town planners and administrators of Noida; a study report by the Noida administration (Noida, 1994); a series of some fifteen in-depth interviews carried out in October and November 1996 (in collaboration with Jay Prakash) in the urbanized village of Harola; and field reports by Sidhu (1995, Chap. 5) and Montezuma (1996, pp. 45-53).

Noida (or New Okhla Industrial Development Authority) was created in the late 1970s in the eastern periphery of Delhi some 15 kilometres from the centre of the capital (see Figure 8.2). The objective of the planners was to develop an autonomous urban and industrial centre. In fact, Noida today encompasses a very important industrial estate, accommodating more than 4000 establishments, and has attracted populations from all income levels in search of employment or less costly housing than in the capital. The demographic growth of this peripheral town was extremely rapid during the 1980s; its population increased at a rate of 13.3 per cent yearly from 1981 to 1991, to reach 146,514 inhabitants in 1991. Its present population is estimated at 250,000 (at the very least). Administratively, Noida belongs to the state of Uttar Pradesh, considered a "backward state" from the social and economic point of view. However, because of its proximity and its good road links with the capital, the town of Noida has become an integral part of Delhi's metropolitan area.

The territory of the new town was administratively demarcated in 1976 by the annexation of land from a total of 53 villages covering a rural zone of 15,000 hectares; the first master plan up to the year 2001 planned the development of 7,800 hectares, corresponding to the agglomeration of the land of 23 villages. While the development of residential quarters and the industrial estate, as well as various urban services, conforms to rigorous zoning and the roads follow a regular and hierarchical grid layout, the original villages still appear today, more than 20 years subsequent to Noida's creation, as distinct islands. Whether these villages have retained their rural character, or whether their morphology would have been radically transformed under the impact of urbanization, in all cases they developed in an unplanned manner and their spatial organization offers no continuity with the urban fabric of the planned zones of the new town.

The integration of villages in the urban zone has brought an undeniable modernization in terms of basic infrastructure: electrification, connections to the water and sewage systems and to the telephone network (in the more centrally located villages), the building of service roads—even if the development of some infrastructure facilities is unequal from village to village, and their maintenance is neglected by the town services. For the "urbanized" villagers, however, the creation of a new town obliging them to become city dwellers entailed, first of all, more radical and even dramatic changes in their way of life than the conveniences resulting of the arrival of electricity and water at their houses. The example of Harola, located today in the heart of the industrial zone and the first to be effectively incorporated in the urbanization plan, can serve to illustrate the transformations that have ensued and the actual effects brought about.

The government of Uttar Pradesh acquired all the agricultural land of Harola village in 1976. The state of emergency was in force, and it was upon seeing bulldozers opening the line of roads across their fields and destroying the harvest in progress that the farmers learned that their lands had been expropriated for the erection of the future city. Without any prior information, thus without having been able to prepare themselves for the changes which would affect them, the villagers brutally lost their traditional

means of existence. The farmers therefore had to forsake their cultivation and convert to other activities with the help of compensatory indemnities granted by the government—however, at rates below the real market value of the lands involved. Some of them developed, most often on a small scale, the breeding of cow-buffaloes and milk cows and the sale of milk and dairy produce. Others opened shops, repair shops, workshops to manufacture garments on a subcontracting basis, transport enterprises, etc. However, the majority of commercial activities, manufacturing or services, could not prosper until the industrial zone and new town were themselves developed, offering new outlets. By the same token, when the farmers were suddenly rendered idle, no factory had as yet been set up to hire them. Only a small number of villagers, better integrated than the others in the politico-administrative networks, obtained employment in the Noida administration, either for themselves or for their sons. As for the women who formerly worked in the fields of the family farm, the urbanization of the agricultural land meant falling back to domestic activities, as social convention does not allow them to exercise an economic activity outside the family. This forced evolution was often experienced as confinement.

Nevertheless, the most spectacular economic conversion to occur in Harola, which also entailed the transformation of the village morphology, was the construction of tenements to let. Strangely, the planners of the new industrial town, whose ambition it was to integrate in one and the same project of a model town both a centre of employment and a living place, "forgot" the question of housing the labour force of the factories. The Noida administration indeed implemented an active housing policy, as witnessed by the construction of numerous blocks of flats and individual houses for different income categories, and their allocation to employees in departments of the town administration, to company heads, executives, managers and technicians, as well as to a certain category of workers (those having permanent employment or who have been regularly employed for more than 5 years at the same establishment, or those whose monthly salary is above a fixed threshold). However, the eligible workers represent a small minority (roughly 10 per cent) of the total industrial labour force in Noida; furthermore, the proposed housing schemes are for sale and remain beyond the reach of the majority of workers' purses, even with credit facilities. Public authorities did not invest in the rental sector, and nothing was foreseen concerning the most disadvantaged, the mass of casual workers and day-labourers that have come to work in the industries in Noida. The latter, therefore, squatted unoccupied land in the industrial zone to raise their temporary dwellings, or sought rooms to let in nearby villages. The erstwhile farmers thus found a source of easy income in the need for housing which had been left unsatisfied by the town authorities. Harola is situated in the heart of the industrial area, and requests for rooms to let came spontaneously; house owners in the village began by converting unoccupied rooms in their own houses. As the stream of migrants becomes stronger with the development of industries, the demand for rented accommodations has also increased—and with it the rent level—, and the construction of new buildings has appeared as a profitable investment. Rooms in a row on the ground floor and, above all, tenement buildings of one to three storeys have

also been built—and are still being built today—on unoccupied plots in the village, on the smallest pieces of free land, or on land freed by the demolition of old buildings. These blocks of rented accommodations offer very small rooms (7 to 12 sq. m.) occupied by 3 or 4 adults, or by a couple with children, and generally have but rudimentary sanitary facilities for collective use. The multiplication of such buildings has brought about a radical transformation of the morphology of the village and a very high residential density. This has also entailed a change in the socio-demographic composition of the population with an influx of migrants from other regions, including a high proportion of single men, while the original villagers have been reduced to a minority.

Constrained and forced witnesses of the urbanization encompassing them, the inhabitants of Harola have become agents in this process at the level of their own village: initially victims of authoritarian urban planning, they subsequently contributed to the extreme and accelerated urbanization of their immediate environment. If the spatial expansion of Delhi by absorption of the surrounding villages has engendered several examples of morphological and socio-economic changes in the original village cores (Lewis and Lewis, 1997), in the case of Noida, and notably in Harola, the particularly abrupt transition for the native farmers and the rapidity of consecutive transformations make this example of rural and urban interweaving especially noteworthy.

Conclusion

The rapid development of Delhi and its metropolitan area offers various telling examples of the integration of urban and rural zones. The continuous geographical expansion of the urban agglomeration of Delhi entails, first, a physical integration of urban and rural spaces through the incorporation of villages in the urbanized zone. As shown by the example of the new town of Noida, the process of annexation of agricultural lands can provoke radical and spectacular transformations of the encircled villages. The latter, however, continue to distinguish themselves from planned urban zones by their dynamics of population and their morphology. The process of peri-urbanization and rurbanization around Delhi is also expressed by a functional integration of the metropolis and new quarters established in the rural fringes, without the necessary continuity of built-up space. The daily commuting of the new country dwellers between their "country" housing estates and the centres of employment in the capital manifests the link of economic dependency between the different spaces. Delhi is, moreover, connected to a myriad of villages by the intermediary of its in-migrant population of rural origin. In the life space of each migrant, metropolis and native village are inscribed in a single territory whose degree of economic, social and symbolic integration is dependent upon the nature of the relations maintained by the migrant between these two poles.

This physical and/or functional integration of spaces also engenders a crossing of urban and rural characters of populations and the emergence of composite, nay torn, identities due to the rapidity of transformations at work

and the discrepancy of modes and standards of living between, on the one hand, the capital as a place of accumulation of wealth and power, a place of innovation and "modernity", and, on the other hand, the numerous places in the countryside which have remained apart from the economic development and/or withdrawn into rigid social structures. From this perspective, the process of Delhi's metropolitization must be viewed as a system of reciprocal influences, while the urbanization of peripheral spaces and of rural populations (original residents or migrants) goes hand in hand with a certain ruralization of the metropolis and of its inhabitants.

PART IV

HEALTH AND EPIDEMICS IN CITIES

9

Diffusion of HIV in Mumbai

Emmanuel ELIOT

Asia is thought to have been the last continent to be touched by the pandemic of the Human Immunodeficiency Virus (HIV) and yet, today, some of its countries are reporting incidence rates of the virus that are amongst the highest in the world, sometimes even exceeding those of sub-Saharan Africa.

According to UNAIDS at the end of 1998, two countries of this region seem to be particularly contaminated: Thailand (26,0000 declared cases of AIDS and 780,000 HIV positive people) and India (estimations of 350,000 AIDS cases and 1,750,000 seropositive cases). Yet, epidemiological reports far too often veil the complex nature of the epidemic. At the same time they mask problems of under-registration that are very common in the developing countries.

This article takes a critical look at the available figures and attempts to analyse the diffusion of HIV at different scales in India (national, regional, urban and intra-urban), and in particular in Mumbai (formerly Bombay). In this city, not all areas have been equally affected by the virus and not all the groups have been infected in the same way. The spread of HIV does not seem to be ubiquitous. In Mumbai, for example, areas known as "pathogenic areas" for decades seem to have been particularly favourable localities for its spread.

Three major types of figures have been utilized:

-Annual reports of the Indian Ministry of Health. The one used is dated February 1998. The first tests were carried out in August 1986 in Chennai (Madras) and Mumbai.

-Figures from the Directorate of Health Services of Maharashtra state. They are available for each testing centre from 1991 to 1996.

-A personal survey[1] carried out in collaboration with Dr S. Bharat[2] in Mumbai. This took the form of a sampling of 15 of the 20 most important public and private HIV testing centres in this city.

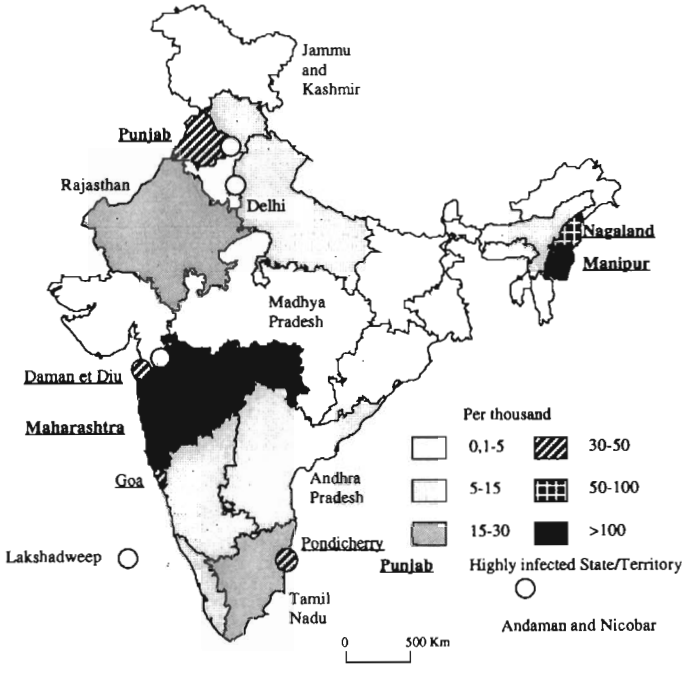


Figure 9.1: Prevalence of HIV in India (1986/1998), by state and territory

Figures and methodology

Official sources (National AIDS Control Programme).

These are the results of numerous serological samplings carried out on representative samples of the population at large. Sero-epidemiology is certainly helpful above all for studying modes of transmission, but it also

1. Carried out in winter 1995 and the summers 1995 and 1996. Statistical sources used in this paper also include: UNAIDS, 1998. *Epidemiological Fact Sheet on HIV/AIDS*, Geneva; Bombay Municipal Corporation, 1986 and 1994 (unpublished), "Annual Reports of the Executive Health Officer."; NACO, 1993. Government of India, *National AIDS Control Programme India: Country Scenario: an Update*; Ministry of Health and Family Welfare, 28/02/1998, Government of India, *Monthly Update on HIV Infection in India*; Directorate of Health Services, Government of Maharashtra, *ZBTCwise, Yearwise Blood Sample Screening and Positivity.*
2. Researcher at the Tata Institute of Social Sciences, Mumbai.

makes it possible to present a valid picture of the diffusion of HIV at any particular moment.

However, this type of figures raises two problems. On the one hand, not all the cases enumerated have been confirmed by a Western Blot test—guarantee of the reliability of the data. In fact, since the beginning of 1995, only two Elisa tests have been carried out with two different sets of equipment in the public testing centres. The cost of the Western Blot—almost Rs. 1500—had become too high for the Indian government. Nevertheless, the new generation of Elisa gives rise to less risk of mistaken identification than the previous one.

On the other hand, apart from temporal errors of record, the main problem remains under-registration. The figures from testing centres are sent neither regularly nor correctly to the central Ministry of Health in New Delhi.

Nevertheless, this information constitutes the only available sources regarding the prevalence of HIV in the 24 states and 7 territories of the Indian Union.

State sources: the example of the Directorate of Health Services, Maharashtra.

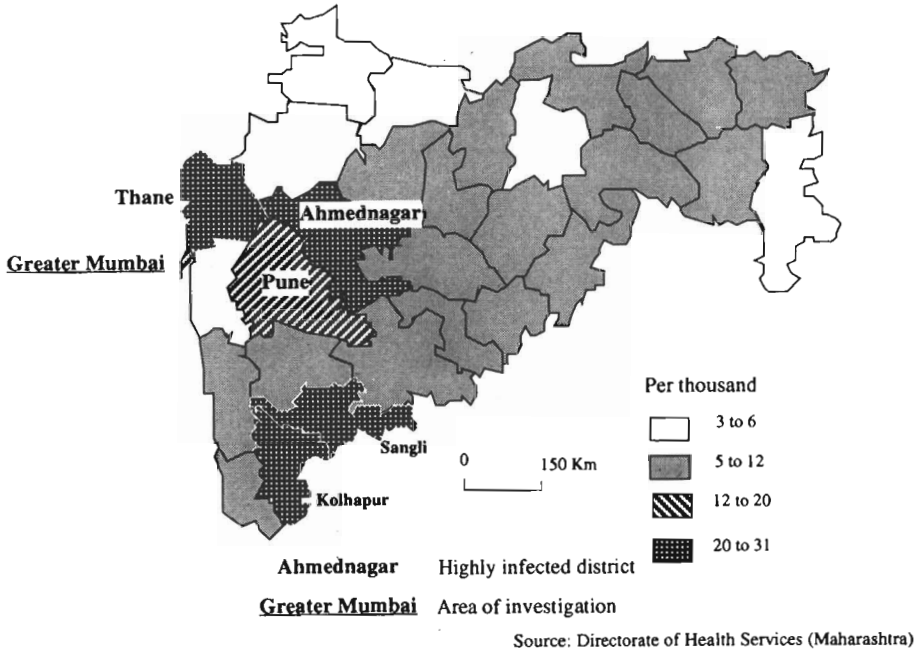
In this state, 28,463 cases were HIV positive from the 274,417 individuals tested between August 1986 and June 1996, a number five times greater than the 6,494 recorded by the central government for the same period. Discussions with health official reveal that the problem of under-registration persists, although it is less "chronic" than at the all-India level.

A personal survey called for

To mitigate the risk of incorrect reporting of figures, it appeared to be of primary importance to gather information in the places where HIV is being tested. This enquiry was carried out in the form of a sampling in Mumbai, the economic capital of the country. It was done for the period 1988-1994, because from 1986 to 1988 the testing system was not fully effective (tests wrongly carried out, records improperly kept). Only the largest establishments in the city, and those agreeing to the survey, were included in the enquiry. In each centre, the sex, age, place of the residence, type of transmission and occupation of the individuals found to be HIV-positive were collected. Moreover, only cases confirmed by a Western Blot test or two Elisa tests have been taken into consideration. This second option made it possible to reduce the risk of incorrect reporting. In fact, some blood samples found positive by Elisa were not always forwarded to the centres performing the Western Blot confirmation test.

From the 15 establishments investigated, 10,209 cases have been recorded, and 88,7 per cent of these were resident in Mumbai. This information certainly refers only to detected cases, but at present, it constitutes the only basic available data to study diffusion of HIV in the capital of Maharashtra. It is obvious that these figures constitute "the tip of the iceberg" (P. Gould) of the epidemic. Nevertheless, it proved extremely

difficult, if not impossible, to find out how many tests had been carried out. Records were in fact too often badly kept, and some centres recorded only cases that were found positive.



Source: Directorate of Health Services (Maharashtra)

Figure 9.2: Prevalence of HIV in Maharashtra (1991/1995), by district

Diffusion of HIV in Mumbai

Three sets of areas in India seem particularly severely affected by the virus (Figure 9.1).

The north-eastern states (Manipur and Nagaland) have the highest rates of prevalence in the entire country, almost 100 cases per 1000. They are situated on the margins of the famous drug-trading "Golden-Triangle." The greater part of the infections there is linked with intravenous consumption of heroin. Regions of conflict—Assam and the Punjab—form the second set. It seems as if times of war or inter-communal tension may be favourable to the spread of the epidemic (Vaguet, 1990). In this case, perhaps Kashmir should be added to this group? In the Punjab, tensions persist but are not as violent as during the 1980s. Moreover the small size of the sample tested—780—should be noted, as it may cast some doubt on the high rate of prevalence.

Lastly, the western part of the country, and particularly the states of Goa and Maharashtra, seem to be very much affected by HIV. In the latter state, analysis of the prevalence of the virus between 1991 and 1995 reveals a very heterogeneous and complex pattern of contamination (Figure 9.2). The urban

districts of the two major economic centres of the north-west of the sub-continent, Pune and Mumbai, are highly infected. But their industrial fringes (Thane and Ahmednagar) register the highest levels of HIV incidence. The southern borderline districts of Kholapur and Sangli-major road and rail junctions to south India have comparable rates. National Highway 4, from Mumbai to Bangalore, the "Silicon Valley" of India, is much used by lorry drivers, and connections between these two major economic centres of the country are particularly close. Prostitutes from nearby towns and villages move towards communication axes to exercise their profession, because of the size of the clientele. And it seems that these groups are playing a role in the diffusion of HIV throughout the country (Eliot, 1997).

Mumbai is the capital of Maharashtra and the first largest city in India, with almost 13 million inhabitants. It constitutes one of the major economic centres, and a "window" for the country. According to Indian officials, it is also the city that has been most affected by HIV.

Perhaps, it is also one of the most thoroughly tested. In fact, one of the first recorded cases of the country was reported in this city in 1986. This was an Indian businessman who had received a transfusion of contaminated blood when undergoing an open-heart surgery in the United States. A system of testing was quickly set up throughout Maharashtra, and the number of tests carried out in this region is one of the highest in the whole country. In fact, the Maharashtrian capital appears to be a highly infected district.[3] It is therefore a very suitable location for analyzing the diffusion of the virus.

HIV in Mumbai: long-standing "pathogenic areas"

The various stages in the industrialization of the city should be seen alongside the settlement of populations (Figure 9.3). The wealthier classes have settled in the west of the town, to avoid pollution from the textile spinning mills of the 19th and early 20th centuries, and today's petrochemical industries. The centre and east have received the very poor, the working classes and the middle classes. There is a striking contrast in structures between the villas of the rich on Malabar hill, the worker's flats (*chawls*) in the centre, an inheritance from the British era, and the middle-classes apartment blocks. In the south, the business quarter between Nariman Point and Fountain is located near to the historic core of the town, the Fort.

3. In the case of Mumbai, municipal and district boundaries coincide.

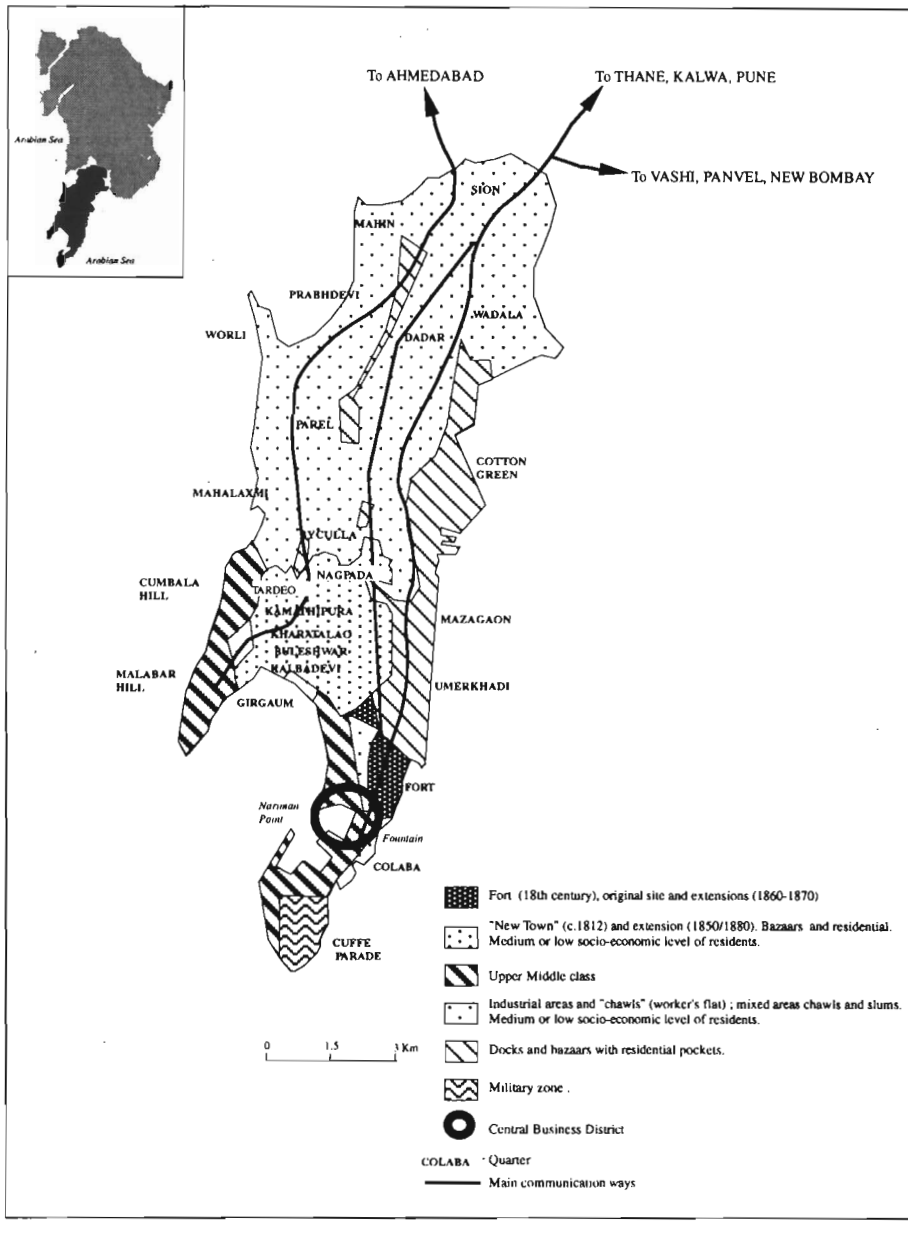


Figure 9.3: Urban morphology and population: Central and South Mumbai

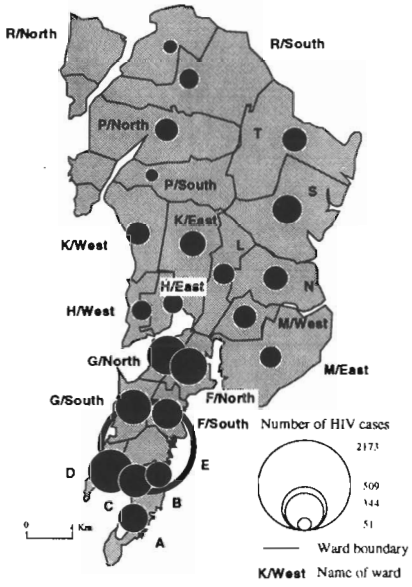


Figure 9.4: Number of HIV positive detected in Mumbai by Wards (1988/1994)

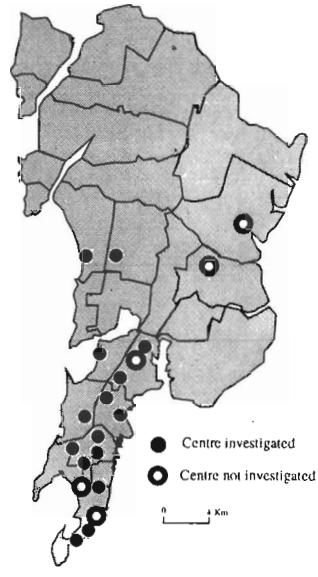


Figure 9.5: Main HIV testing centres, cases in Mumbai (1994)

According to the figures collected in the 15 testing centres, the central wards[4] (C, E, F/North, F/South, D, G/South) concentrate the highest number of HIV positive cases (Figure 9.4). The north of the city seems less affected. Is this linked to the fact that the great majority of the establishments where the testing is done are located in the heart of Mumbai? In fact, the major health services are concentrated in this part of the town, and people therefore have to travel there to get a blood test done (Figure 9.5). Thus, while the number of recorded cases of HIV is perhaps incomplete in the northern wards of the city due to the absence of major testing centre, the one of the centre and south would seem to be indicative of the spread of the virus. In fact, almost all the biggest centres where the test is carried out have been investigated in this part of the town.

4. In Mumbai, the hierarchy of administrative units, in decreasing order of size, is as follows: Wards, sections, circles, blocks.

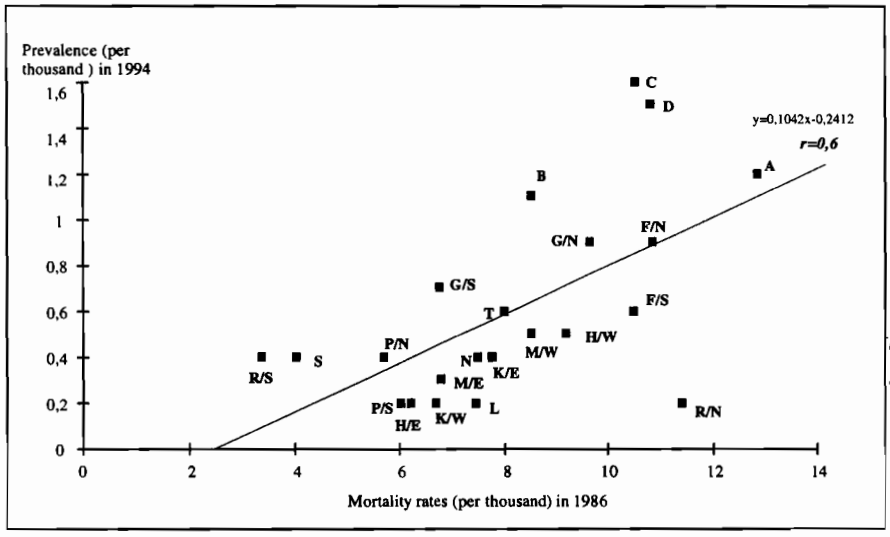


Figure 9.6: Diffusion of HIV in "pathogenic" wards

Apart from the analysis of the concentration of HIV cases in the metropolis, a major element seems to be the link between the prevalence of HIV in 1994 and the mortality rates in 1986 at the ward scale. The question is whether HIV is propagated in locations that are special from the health point of view. The year 1986 was chosen because it is the date of the first tests carried out in India. The analysis of the correlation coefficient (r) between these two sets of data seems to be the most interesting tool (Figure 9.6). According to the quality of the figures, the coefficient is quite high (r = 0.6). Thus, the wards that had a high mortality rate in 1986—in the order of 10.5 to 11.5 per thousand—were the ones that in 1994 were most highly affected by HIV. Although the ward E has not been included in the analysis, it belongs to this group with a prevalence of 4.6 per thousand in 1994 and a mortality rate close to 11 per thousand in 1986. This correlation however is not perfect. Some wards with high mortality rates do not show a significant HIV prevalence. Nevertheless, the retrovirus seems to have spread first in "pathogenic areas." But this low level of salubrity in the central parts of Mumbai is not a recent thing.

Already at the end of the 19th century, British health officers were describing the situation of ward E for example as "intolerable."[5] In 1892, the mortality rates in some parts of this ward were almost 50 per thousand, whereas those in the south or further north in the city were in the order of 9 to 16 per thousand. The bad condition of ward E has persisted through the various stage of the industrialization of Mumbai. This part of the town has

5. Health Officer's report 1892. See Ramasubban and Crook (1996).

always been an area for the very poor, refugees and the homeless. Today, conditions have improved a little. This ward still contains a very high majority of people at a low or medium socio-economic level. It also seems to be one of the most congested areas of the city. The housing is very old and sometimes borders the insalubrity. Moreover, the communal strife between Hindus and Muslims in 1992-93 after the Ayodhya events was particularly violent in this part of Mumbai.

Therefore, it seems that HIV appeared first in wards where health conditions have been substandard for decades. Although mortality rates have not increased everywhere since 1986, it appears that the part of deaths due to tuberculosis is increasing in an alarming way. The tuberculosis/HIV nexus constitutes a dangerous combination. The WHO estimated in 1990 that more than 75 per cent of carriers of the bacteria were living in developing countries. In 1991, moreover, the number of HIV carriers suffering from tuberculosis was estimated at 4.6 million. The tuberculosis/HIV nexus is already having dramatic consequences in developing countries where, according to some sources, 95 per cent of HIV positive individuals are suffering from tuberculosis.

In Mumbai, only to wards K/East and B show a decrease or a relative stagnation in their rate of annual increase of deaths due to tuberculosis, with -2.0 and -7.8 per cent respectively, between 1986 and 1994. Whatever the reason, in the wards most affected by HIV the rates are among the highest in the city. For example, in ward E the number of deaths due to tuberculosis doubled between 1986 and 1994.

However, in this part of Mumbai, which has the highest number of HIV positive cases (2,173), not all localities have been affected equally. The most affected sections are in the north and the south, Byculla and Kamathipura. Moreover the latter houses more than 37 per cent (803 cases detected) of all the HIV positive cases in the ward.

It is also notorious in the town, as one of the main prostitution centres, and the best-known one, because of its central location. Prostitutes seem to be one of the major vectors of the diffusion of HIV in India (Eliot, 1997). Therefore, it would seem particularly worthwhile to analyse the spread of the virus in Kamathipura. This investigation is made easier by the fact that this quarter is marked by a strong spatial segregation between the locations reserved for the sex trade and those devoted to commercial and residential purposes.

Diffusion of HIV in Kamathipura

Almost half of the best known centres for prostitution are situated in central Mumbai. Kamathipura is perhaps the most famous of them (Figure 9.7). Because of its central location in the city, it receives a very numerous clientele. It is located near Mumbai Central railway and bus terminals, and close to major communication nodes serving the north, south, east and west of the Maharashtrian capital. These axes are all concentrated in the northern part of the area.

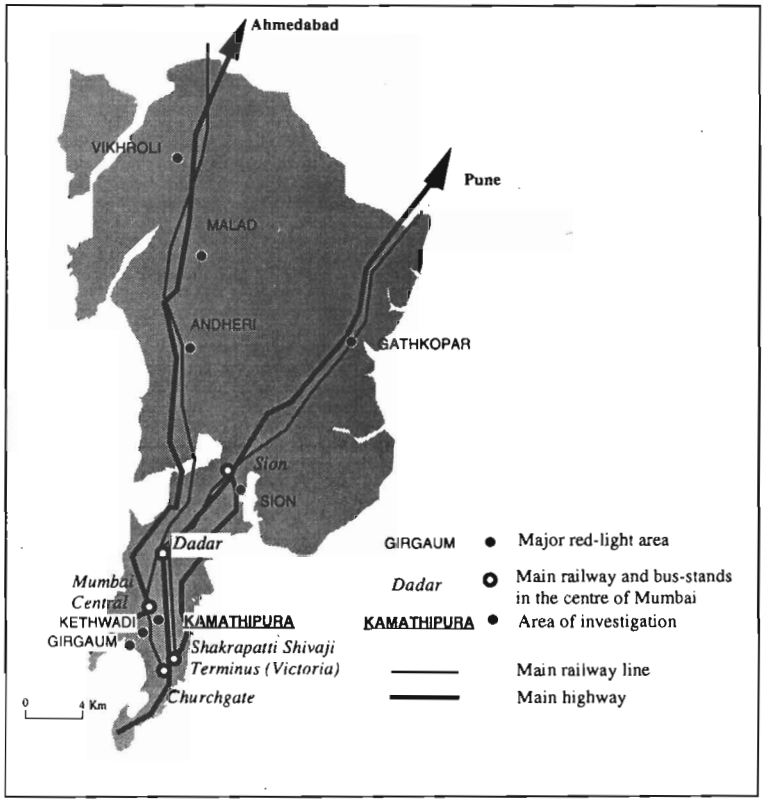


Figure 9.7: Kamathipura: a red-light area in the heart of Mumbai

HIV seems to have affected red-light lanes first and more strongly than the others. In 1994, these streets contained most of the recorded cases: 497 as against 147 in the commercial and residential parts of Kamathipura. However, the entire red-light area does not seem to have been infected in a homogenous way. The north and the south of it were particularly affected. In fact, this spatial difference in the diffusion of HIV points to a rather distinct inter-communal segregation. Indians (mostly Hindu or Muslim) are concentrated in the northern lanes. Groups of Nepali origin, as well as the "Zenana" (transvestites) and "Hijra" (eunuchs) communities, have settled more in the centre and the south. Moreover in this part of the area the number of HIV positive cases detected seems to be lower (Figure 9.8).

Prostitution is a business activity of the service type. It is therefore related to access. The streets nearest the communication nodes (station, bus-stands...) seem more contaminated by HIV. Meetings with the directors of various non-governmental organizations working with the prostitutes of this quarter confirm this: the most accessible streets, the ones in the north, are more frequently visited by the male clients. Nevertheless, the proximity of

important communication nodes can not be the only reason for the relatively high number of HIV positive cases in the lanes occupied by the Hijra and Zenana communities. Here it seems necessary to call in a cultural factor. In fact this community is visited by Indians and even more so by Arabs from Gulf countries. There are even specialized travel agencies organizing "sex trips" between the Emirates and India.

Nowadays the prostitutes of Kamathipura have the reputation of being highly infected by HIV. Many alarmist newspaper articles mention that 85 to 90 per cent of the prostitutes in certain lanes of this area are HIV positive. Although these percentages should be regarded with caution, clients are turning to other communities, the Hijras and Zenanas, as well as the Nepali girls, whose skin is fairer. Thus, in addition to an increased demand for young virgins related to the fear of contamination, fairness is presently becoming a mark of freedom from HIV infection. A fair complexion has always been a criterion of beauty in India. Today it is becoming in addition a "hypothetical assurance" of non-contamination by HIV.

Therefore, a migratory move has been set in train within the boundaries of Kamathipura. Indian prostitutes with lighter skins, or with resemblance to the Tibeto-Nepali type, have moved to work in the central streets. This means that very soon this part of the district too will be as contaminated as the areas north and south of it.

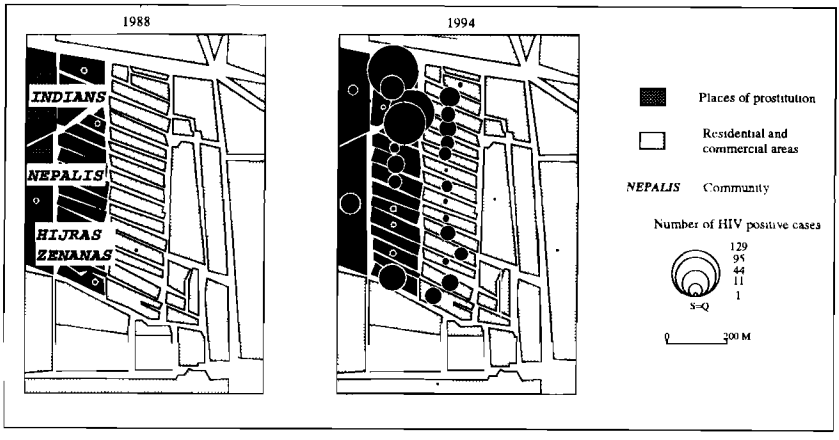


Figure 9.8: HIV diffusion in Kamathipura (by lane)

In the commercial and residential areas, the highest number of cases are located near to those streets devoted to the sex-trade that are most affected by HIV. However, it should be noted that the clients and people living in the eastern part of Kamathipura have perhaps not been tested as thoroughly as the prostitutes have. In fact, the first tests and epidemiological samplings were carried out among this group.

Finally, analysis of HIV diffusion in Kamathipura, in addition to a high level of contamination among prostitutes, shows a lack of homogeneity in

propagation of the virus, linked to a communal rationale of a kind of sexual tourism (Figure 9.9).

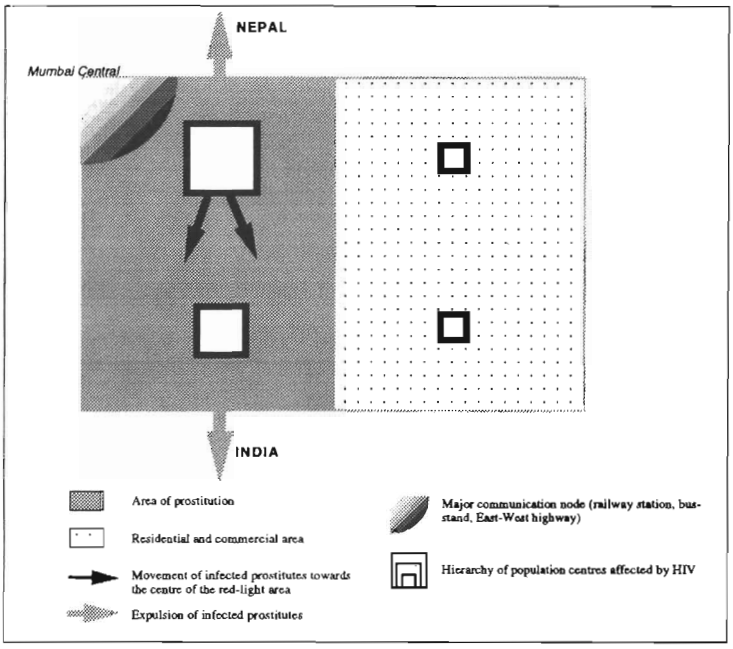


Figure 9.9: The spatial dynamic linked with HIV in Kamathipura

Governmental action against HIV.

Most of the actions have concerned ward E. Prevention campaigns have been set up in the chawls, especially in Byculla, and red-light areas. Most public actions have focused on prostitutes. At the instigation of certain institutions, the extremist Hindu alliance between BJP (Bharathiya Janata Party) and Shiv Sena that used to form the government tried to legalize prostitution. The main objective of this was to be able to test prostitutes and assess the extent of the epidemic. Lamps were placed at the entrance to brothels. These were supposed to be a guarantee for clients that the prostitutes there were under regular medical supervision, not HIV positive and using condoms during intercourse. However, it was very easy for brothel-owners to obtain false licences and it became impossible to identify those which were visited by medical practitioners and those which were not.

Another course of action was set in motion by the government to "clean up" this area, which was becoming highly infected by HIV. Immigrant prostitutes found to be HIV positive were sent back to their native regions, but some Maharashtrian women carrying the virus were not always expelled

from Kamathipura. These actions can be seen in conjunction with the government's policy of "Marathi nationalism", giving preferential employment to native Maharashtrian Hindus.

Thus, these policies focused primarily upon the prostitutes, who are accused of being the sole vectors for the diffusion of the virus. In spite of the increasing number of HIV positive cases, and the alarming rates of infection in Mumbai and all over India, the vast majority of official interventions have been limited to discriminatory practices. Being found HIV positive in Mumbai means, according to many state health officials, that you are a prostitute, poor, and/or a client of prostitutes. The reality, however, is very different. Although indeed prostitutes and their customers seem to have been the first to be affected by HIV, today the virus is spreading throughout the entire population, and is not confined to so-called "high risk" groups.

Finally, because of Mumbai's importance as a major economic centre, its population is composed of people of very heterogeneous origin. Migrants from the entire sub-continent, especially from the central and southern parts of the country, arrive in large numbers. When they return home, these workers may very well be carrying not only money but also the virus. Mumbai is interfacing not only with Maharashtra but also with the rest of the country and with the world, especially the countries of the Persian Gulf. The segregationist actions of the Maharashtrian and Indian Governments may give rise to very great tensions between the different communities living in the city, especially with the Muslims, who have often been accused of spreading diseases. Investigations in Mumbai and Hyderabad have shown that some Hindus consider Muslims to blame for propagating the virus in some parts of the sub-continent, by their sexual practices and "impure" way of life.

10

Emergence of New Health Care Networks in India. Hyderabad, a Centre of Innovation

Florence RIHOUEY

In matters of health, India in general seems to be in a very bad situation. The infant mortality rate is still very high (92 per thousand compared with 29 and 27 per thousand in China and Thailand respectively), and significant nutritional deficiencies persist.[1] Tuberculosis, tetanus and intestinal problems remain endemic (and sometimes epidemic), while other infectious diseases suddenly appear or reappear on a large scale.

In this context, the health services seem to be inadequate. Based mainly on a curative system, they are under-equipped: materials, staff and investment are often lacking. Problems of supplies, overloading and hygiene reinforce the poor image of these health care centres—a "morgue" image, which is sometimes very real, especially in the case of government hospitals.

But India is and remains a land of contrasts. Over the last few years, a new type of facility has been making its appearance. Alongside the health care networks maintained by governmental agencies, charities, nursing homes or practitioners of siddha, ayurveda, unani and homeopathy, a network of hospitals is presently growing up that offers "all specialities under one roof." Accommodating the best specialists in cardiovascular or ocular surgery, these centres have a direct or implicit connection with the Gulf countries, Europe or the United States, and are comparable to hospitals in the rich countries. With glass, marble, indoor fountains and air-conditioning, their surroundings, services and fees make them real "five-star hospitals."

These new facilities reflect the growing importance of the middle classes, whose demand for health care is increasing, the economic significance of a few Indian entrepreneurs who are investing in this sector, and a political context which affects the whole system, since health is a governmental concern (1946, Bhore Committee Report).

The trend towards a luxury private sector has accelerated since 1991. In order to redress the balance of payments (when the country was more than

1. See also Véron in this volume.

75,000 million dollars in debt) the then Prime Minister, Narasimha Rao, got help from the International Monetary Fund and the World Bank, and initiated a liberalization of foreign trade. In this context of structural adjustment, there has been an increasing attempt to attract private investment from abroad (5000 million dollars in 1994, an estimated 40,000 million up to the year 2000), at a time when public spending continues to decrease.

As an area for the governmental intervention and the application of political choice, health has not remained untouched by these new measures. Gradually the Welfare State is giving way to multinational corporations.

Growth of the private sector

Hyderabad, the sixth largest Indian city with almost 5 million inhabitants, will serve us as an illustration of this emergence of a new type of service.[2] Capital of the state of Andhra Pradesh, and formerly centre of a Muslim princely state, Hyderabad lies on both banks of the river Musi. In the south is the historic centre, now known as "old city", where most of the inhabitants are Muslim; to the north are the Hindu areas that form the present dynamic centre of the city.

This representation of numbers of beds by circles of proportionate size gives a good idea of the scale of the buildings (Figures 10.1 and 10.2). The government hospitals were set up between 1846 to 1980, but most of them date from before the 1960s. They form a significant element in the urban structure, which has not changed (no new hospital or additional beds since 1980). This lack of growth reflects a deterioration of premises and equipment, reduced budgets and a loss of doctors. The private hospitals in existence before 1986 were created by Catholic and Muslim organizations. One of Hyderabad's special features is that it is home to a large Muslim minority (almost 40 per cent of its population), living almost exclusively in the southern part of the city. The three private health centres located in the south were indeed set up by Muslim trusts in a Muslim area.

In a period of less than 10 years (the first such hospital dates from 1987), 14 special hospitals were inaugurated in Hyderabad. They offer specific types of health care, which in this area were previously available only in the public sector (such as oncology, nephrology, cardiology, ophthalmology, etc.), but under-utilized due to the lack of adequate equipment and qualified staff. The new centres are equipped with the latest medical technology like MRI, CT scanner or Colour Doppler system,[3] and most of the doctors have done a part of their training abroad. Here general medicine goes side by side with plastic surgery, psychiatry, neurosurgery and nuclear medicine.

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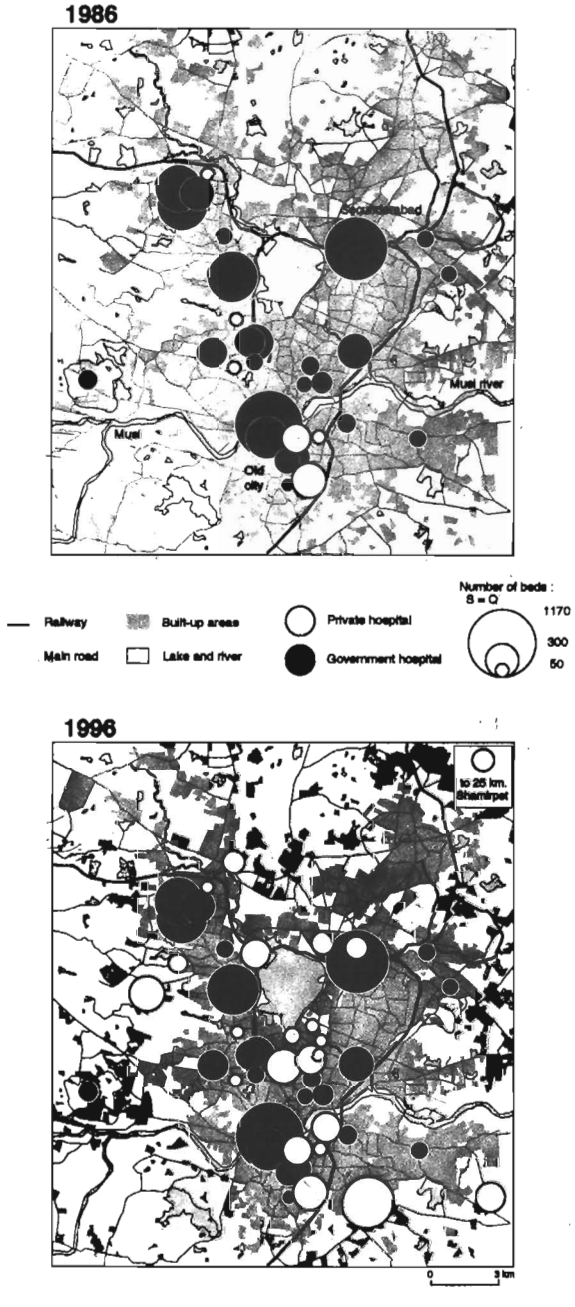
2. In order to map this specific phenomenon (particularly striking in the urban and hospital landscape) only hospitals with a capacity of more than 50 beds have been taken into account. Nursing homes, clinics and individual practitioners are therefore not shown in Figures 10.1 and 10.2.

3. Apparatuses of European or American origin, used in the domains of imagery, diagnosis and surgery. In cardiology, for example, operation theatres are geared to perform angiography, coronary by-pass, valvuloplasty or pacemaker implantation.



Figures 10.1 and 10.2: The hospital landscape, 1986 and 1996

These corporate hospitals, which are real business ventures, financed to a large extent by shares, offer their own health insurance schemes and accord as much importance to marketing as to medical services.

Although this conspicuous presence of up-market private sector health care is of recent date, it is nevertheless the result of a process that started at the end of the 1960s. The growth of the private sector became significant first in states and districts that benefited from the Green Revolution. The nexus of hybrid varieties + irrigation + chemical fertilizers enabled some farmers to invest their agricultural surpluses in commerce or agribusiness (hotels, cinemas, the film industry, poultry-farming, fish-farming... and nursing homes). New educational strategies accompanied these transfers of capital into the secondary and tertiary sectors. During the 1970s, alarmed by promises of agrarian reforms, farmers encouraged their children to follow higher studies. In order to diversify their economic activities, they directed their sons into business, agriculture and the professions (doctors or lawyers). To take up the example of Hyderabad again, one family of landowners, who already owned four food businesses and a cigarette factory, set up in 1973 a 40-bedded nursing home (two of the four people involved in this enterprise were newly-qualified doctors).

On the other hand, since agriculture is sometimes very closely connected with political power (in Andhra Pradesh the dominant Reddys and Kammas are both agricultural castes), health care became a political tool for local leaders, who invested in welfare services in order to consolidate their position.

Therefore, the private sector developed first because of this economic growth. However, it also benefited from health policies initiated by the central government. From the Second Plan onwards (1956-1961) public spending on health decreases and the committees responsible for elaborating national policies referred to the parallel increase in the number of private practitioners (Mudaliar Committee Report 1961, then the Jungalwalla Committee Report 1967, and the Haathi Committee Report of 1975).

From the Table above (Table 10.1.) it is possible to trace this gradually budgetary withdrawal on the part of the central government (amounts allotted to national health care programmes), and one of the states, Andhra Pradesh.

While earlier plans and committees had considered health policy as the sole responsibility of the government, the Sixth Plan (1980-85) for the first time officially encouraged development of the private sector.

Low public budgets, combined with the high cost of an essentially curative allopathic system, had in fact led to a breakdown situation. The state was unable to mobilize fresh resources, and this recognition of the private sector looks very like a delegation of human and financial responsibilities.

Unfortunately, this decision only legitimized a sector that was already proliferating, and no thought was given to its role and character. Very few states or municipalities attempted to compensate for this absence of

regulation in order to fix minimal norms for functioning (hygiene, cost, equipment, qualifications, etc.)[4]

Tableau 10.1: Evolution of the expenses for public health (in Rs. Crores)

Plan period	Total plan outlay		Health outlay		Health as per cent of total	
	India	Andhra Pradesh	India	Andhra Pradesh	India	Andhra Pradesh
First Plan 1951-1956	1960	NA	65.2	NA	3.3	NA
Second Plan 1956-1961	4672	185.01	140.8	8.37	3	4.5
Third Plan 1961-1966	8576.5	352.41	225.9	23.31	2.6	6.6
Annual Plan 1966-1969	6625.4	234.06	140.2	5.82	2.1	2.5
Fourth Plan 1969-1974	15778.8	448.87	335.5	4.65	2.1	1
Fifth Plan 1974-1979	39426.2	1444.7	760.8	17.4	1.9	1.2
Annual Plan 1979-1980	12176.5	459.11	223.1	7.8	1.8	1.7
Sixth Plan 1980-1985	97500	3403.79	1821.1	61.53	1.86	1.8
Seventh Plan 1985-1990	NA	7500	NA	164.2	NA	2.2

NA: non available.
Source: Mukund (1990)

In Hyderabad today there are more than 2500 individual medical practitioners, and almost 500 nursing homes (5 doctors and 1 nursing home per 10,000 inhabitants; estimates based on personal investigations, 1995). There are no checks or regulations on this private practice.

Therefore, health policies have contributed considerably to the spread of private health care services (a mainly urban phenomenon) which at first took the form of individual practices, clinics, and nursing homes. However, the Sixth Plan also permitted the establishment of larger scale health care facilities. At the national level, a reduction or even total exemption from import duties was (and is still) granted for the importation of high-tech equipment. Health care as a whole is recognized as an "industry" and people wishing to set up a hospital may take advantage of loans from public financing companies (such as the Industrial Development Bank of India, for

4. Only Mumbai and Delhi passed laws for the registration of nursing homes. The Delhi Nursing Home Registration Act of 1953 was extended in 1992 by an amendment instituting precise criteria for location (only in commercial areas like other business concerns), minimum size of buildings, rooms. However, nothing is said about the quality of services and care. Moreover, this exclusive criterion of location has led to registrations being given up. Private practitioners, who see themselves as providing a welfare service, wish to be located in residential areas. Therefore, out of an estimated number of 5,000 doctors in Delhi, only 200 are registered at present.

example). At the local level, the Municipality of Hyderabad went so far as to grant large plots of land (up to 30 acres) to encourage the establishment of such hospitals, if they would agree to provide free treatment to a certain proportion of "white card" holders (monthly income below Rs. 500)[5]— which of course they agreed to, but do not fulfil.

These various measure fostered the mobilization of capital from regional business groups and Non-Resident Indians (NRIs). In this context, the recent structural adjustment policy has simply permitted reproduction of a model of development that was already established in the pharmaceutical sector:[6] the entry of multinationals into the Indian market.

From Point to Network: Spatial Organization of Private Hospitals

In the same way as other services, the distribution of health care centres reflects various different social, economic and political plans. To illustrate our case, we shall again refer here mainly to the example of Hyderabad. In order to sum up the strategies involved, we have grouped private hospitals according to their origins (endogenous/exogenous) and their level of spreading.

- The first category refers to endogenous hospitals, with a single outlet (type 1). These function as simple units, without medical partners or outside financing. The centres concerned are all recently established (1991, 1993 and 1996) and offer a total of 460 beds. Mainly located on the outskirts of Hyderabad, and with no immediate plans for extension, these have been set up by groups including business persons, doctors and managers, who are natives of the city.

- Next come local centres that have set up a first inter-city branch (type 2) (6 centres, 1800 beds, 700 of them in a single hospital). In most of these cases, the branches do not offer the same services as the original centre; but this complementary relationship remains hierarchical.

Two of these were formed by Muslim groups and are connected with the political party that is dominant in the state. The founder of the Majlis Ittehadul Muslimeen (the main Muslim party in Andhra) was also the director of one of these hospitals.

- Then the branches have become more numerous and their distribution becomes centrifugal. The hospitals of this kind form networks radiating outwards from Hyderabad (type 3). This is the case, for example, with CDR Health Care Ltd. This company was founded in 1986 by a doctor from a land-owning family and the first CDR Hospital was built in 1989 (250 beds).

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5. These cards granted by the government (Public Distribution System) guarantee rations of rice, oil or sugar at fixed prices to the most underprivileged groups. The type of card and the rations vary according to income: white cards and pink ones for incomes below Rs. 500 and Rs. 1,500 respectively.
6. The Indian market has been open to foreign pharmaceutical companies since 1948 (Industrial Policy Document, Delhi). Despite the establishment of governmental production units during the 1950s and 60s (Hindustan Antibiotics Ltd., Indian Drugs and Pharmaceuticals Ltd...), Indian companies have not been able to compete with the marketing techniques of the multinationals.

Benefiting from strong family political support, the founder then diversified his activities and extended his presence in the domain of health. He has set up a medical equipment manufacture, a multimedia medical school, diagnostic centres and dedicated hospitals in the field of cancer, women and children. Three further extensions are being planned, including a hospital specially designed for businesspersons: private secretary, computer, fax and Internet connections will be provided to patients.

This polar network is spreading within Andhra Pradesh (4 hospitals), based on nodes which are still urban, and various health care centres now exist also in Bangalore, Pune, Mumbai, Jaipur and Calcutta.

If we consider these three types of spatial organization no longer separately, but as elements in an overall process of expansion, they could be seen as the various phases leading to the establishment of an infrastructural network. This hypothesis seems to be confirmed when we trace the development of the existing centres. The polar network corresponding to type 3 is in fact the outcome of a spatio-temporal progression that has successively integrated types 1 and 2. Similarly, type 2 centres started out as the first type.

Naturally, the rhythm of growth has been different for each structure. Looking at centres founded around the same date, we find that some are still in phase 1 while others are already organized into networks.

The succeeding categories include hospitals whose origin could be described as exogenous or foreign, even when the members of the founder-groups administering the facilities originate from Andhra Pradesh. These are Non-Resident Indians entering the health care market. Indian doctors or administrators living in the United States, they are exporting to their native place an American model of private health-centres. The objective is clear: "to transfer the American work-culture" to India.

- The first of these exogenous models presents a simple structure (type 4). Only a few nodes are interconnected. In contrast to the preceding diagrams, here the centres involved are on the same level. The services offered are the same, and if they belong to the same health care chain, these hospitals are autonomously administered. Also of recent origin (1990, 1993, 1994, 1996—1150 beds), these centres have benefited considerably from the economic liberalization of 1991. Now, Hyderabad-Delhi represents the outstanding axis of a "network" which is likely to expand.

- The last type of spatial organization involving our sample-town is exemplified by the Apollo Group chain of hospitals (type 5). Starting from Chennai in 1983, this reached Hyderabad in 1989 and Delhi in 1996. Founded by an NRI who was a native of Andhra Pradesh, this network of facilities is just the hospital branch of a group that is well-established in domain of health (development of computer software for hospital administration, medical equipment, training centres...). The company Apollo Hospitals Ltd. is present at every level: apart from the cities already mentioned, centres for treatment and diagnosis are found in Andhra Pradesh, Nepal and Bangladesh. However, the main organizational nodes remain located in Indian cities of national or even international level.

Its close connections (mainly financial) with the American Hospital Corporation, one of the biggest health multinationals in the United States, enables it to plan for unparalleled expansion in India: 1 hospital in each state capital by the year 2000.

According to whether these health-centres are of endogenous or exogenous origin, we find two distinct patterns of organization and spatial diffusion. The first, based on vertical relationships between focal hospitals and dependent centres, leads to the development of a polar reticulated structure. Hyderabad remains at the centre of this nation-wide organization. The second is based mainly on horizontal relationships between poles on the same level. The hospital, via the private sector, reinforces national polarization and shares in their integration in the "world system." Capital cities are indeed the first to be affected by the development of international relationships.

The presence of these groups is certainly not confined to the Hyderabad area. Many people have invested in health through Trusts or companies: Tatas, Nandas (Escorts), Hindujas... However, none of these has developed a network comparable to the ones which have started or passed through Hyderabad. Economic wealth, the great mobility of a rising business class, and caste connections should be looked into more closely: 6 of the 10 biggest hospitals in Hyderabad have been founded by Reddys (the dominant agricultural caste in Andhra).

Tableau 10.2: Cardiology packages

Type of room	Coronary Artery Bypass surgery	Open heart surgery	Angio plasty	Valvulo plasty	Angio graphy	Cardiac cathete rization
General ward	98 800	90 000	45 000	34 000	11 850	11 500
Semi-private	119 000	100 000	51 000	36 000	13 500	13 000
Single	141 000	115 000	59 000	45 000	15 500	14 500
Deluxe	159 000	128 000	77 000	50 000	18 500	17 500
Special deluxe	203 000	176 000	85 000	59 000	20 500	20 000
Super deluxe	234 000	191 000	93 000	65 000	24 000	23 000
Length of stay.	12 days		5 days	3 days	2 days	

Charges in rupees (1996).

Use of Private Hospital Services

The development of the health care system towards higher standards of technical and medical performance naturally has an effect on health-expenditure.

The creation of these hospitals in itself represents considerable amounts, from 1 to 150 crores. The cost of treatment is in proportion to the initial investment. To cite an example, Table 10.2 shows the charges current in The Heart Institute (Apollo Hospital, Hyderabad).[7] These packages include

7. For a comparison between the hospital fees given and local living standards, upper class incomes average around Rs. 6,500 per month and lower class ones around 600 per month (Hyderabad 1995).

treatment, room, medicines and meals. Some other billing department (MediCiti hospitals) notice that numerous items are charged extra: imported medicines, sutures, valves (Rs. 27,000 to 45,000), pacemakers, balloons (Rs. 30,000 to 45,000). In Medwin hospital, the patient also has to supply the blood required for transfusion and has to deposit the entire cost of package *before* any surgery is undertaken.

In spite of the amounts involved, within three years Apollo has carried out more than 2,000 open heart operations. In 1995, it admitted 9,491 in-patients (all specialities) and 32,165 out-patients (minimum fee: Rs. 130). Since a similar number of admissions were made to the other corporate hospitals, we can estimate the number of patients treated in 1995 by all these private structures together at 420,000 (out-patients) and 120,000 (in-patients).

Proportionally, this is still far from the figures given by the two big government hospitals in the city (1,500,000 consultations—78,800 in-patients) which together total more than 70 per cent of the consultations and 50 per cent of the in-patient admissions observed in the public sector (study covering ten government hospitals). Still the number of patients is large, considering the fees charged, and the increasing number of these private centres is evidence of the success they have met with the citizens.[8]

On the other hand, since these types of treatment are available only in certain places and sometimes only in the state capital, the area served by these hospitals extends far beyond the city of Hyderabad itself. Taking the example of Apollo again, as representative of all the private hospitals in Hyderabad, figures 10.3 and 10.4 emphasize the extent of its influence upon the spatial and medical behaviour of the population.

The largest number of patients naturally centres on Hyderabad (8,907; represented by an empty circle on the first figure). In Andhra Pradesh, Apollo's area of influence is greater in the northern districts. People in the south (economically underprivileged areas) either use this type of service less, or turn towards Nellore and Chennai. The fact that the other centres in this group are more recently established probably explains why they have less influence at the regional and national level. At the all-India level, patients come mainly from neighbouring states, except for Tamil Nadu, where the Apollo hospital in Chennai, which is older than the Hyderabad one, has developed its own area of attraction.

8. Our analysis focuses on big private hospitals. But it should be noted that regardless of income, more than 70 per cent of all patients prefer to use the private sector (individual practitioners and nursing homes). Only the need for hospitalization, if perceived as necessary, will drive the poorer ones to the public sector. In this connection compare the investigations in Mumbai slums (Yesudian, 1990), in Jalgaon district in Maharashtra (Duggal and Amin, 1989) and in Delhi (Baru, 1998).

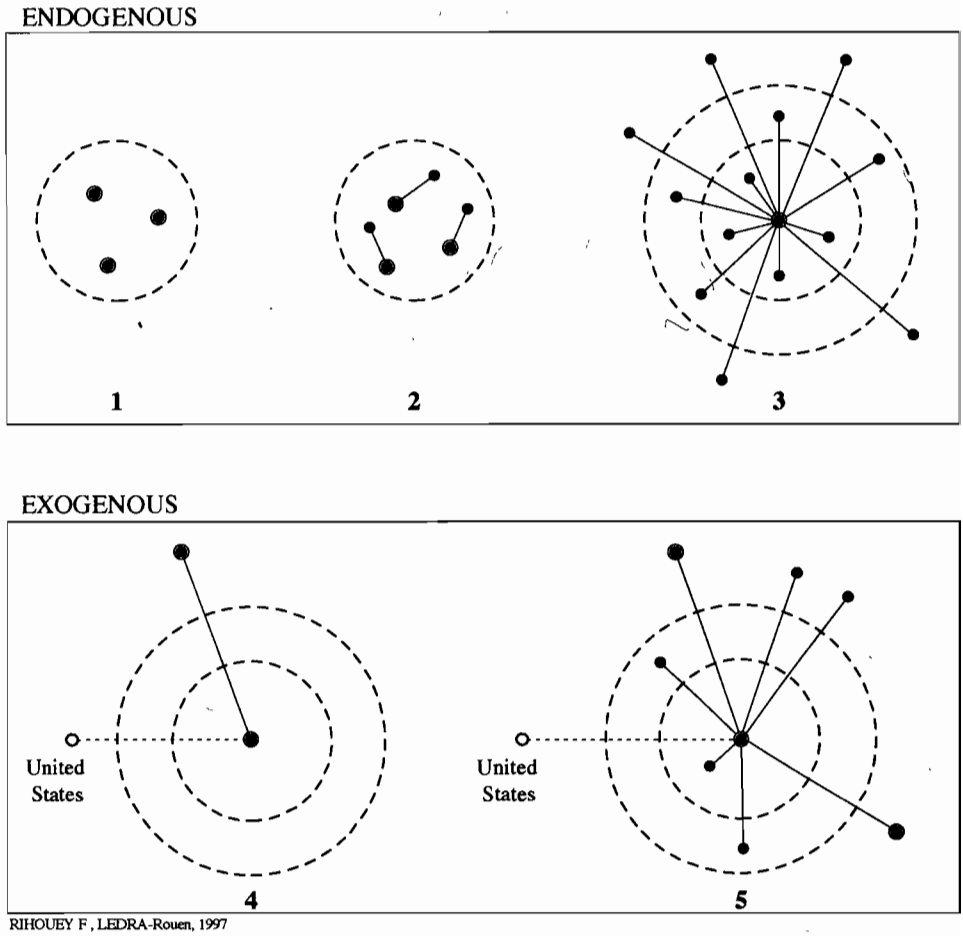

Figure 10.3: Different types of spatial organization of the private health care sector

The present state of hospital data unfortunately does not allow us to quantify the use of this type of service on the international scale. This phenomenon is however very much in the course of development. Some Muslims from the United Arab Emirates or Saudi Arabia, as well as some NRIs from the United States, nowadays come for treatment to the private hospitals of Hyderabad. These members of the Indian Diaspora have adapted their health strategies to the new health care facilities available in India. Living in countries where social welfare is not available for everyone, they can now find in Hyderabad a very high quality service at a low cost. For such people distance is not a limiting factor, since the expenses involved (travel and treatment) are still far lower than the fees charged in the Gulf countries or the United States.

Above all, it must be emphasized that these services do not affect only the wealthiest class of the population. Employees under the Central Government Health Scheme, or the Employee state Insurance programme are sometimes referred to these hospitals, when the government centres cannot fulfil the patients' specific needs. These are the only governmental systems of medical insurance in existence in India. They cover employees of the central government and of some firms against a monthly contribution deducted from their wages. Expenditures are of course restricted and each case scrutinized, but again, the state is partially financing the private sector.

Apart from the upper class, these facilities are most commonly used by middle class people, who, whatever their income, must very often take loans in order to access to this kind of health care. Let us take as an example a family of government employees with a higher than average income (Rs. 10,000 per month). For treatment related to the removal of a kidney, the head of the family spent Rs. 120,000. To raise this amount he took loans of Rs. 35,000 from his employer and Rs. 40,000 from private sources, as well as using the scholarship of his eldest son (Rs. 30,000). But all this amounted to only Rs. 105,000, and after payment of the monthly interest, he was left with only Rs. 2,000 per month to cover the needs of his four children as well as treatment for his wife who has asthma. What about the people with monthly incomes of less than Rs. 3,000 who still use these hospitals? These are very often cases who have been refused admission to government hospitals (because assessed as too serious or not susceptible to treatment with the equipment available), involving key individuals in the family structure such as the head of the household or the only son. The loans taken represent extremely heavy burdens for families who have already sold all their valuable possessions (land if they had any, television, etc.). According to the National Statistical Health Survey, medical care represents the second most common reason for family borrowing, after dowries. Nevertheless, subscription to a private health insurance policy remains exceptional. "Why spend Rs. 1,500 per year, if we get no refund when we do not use medical services?"

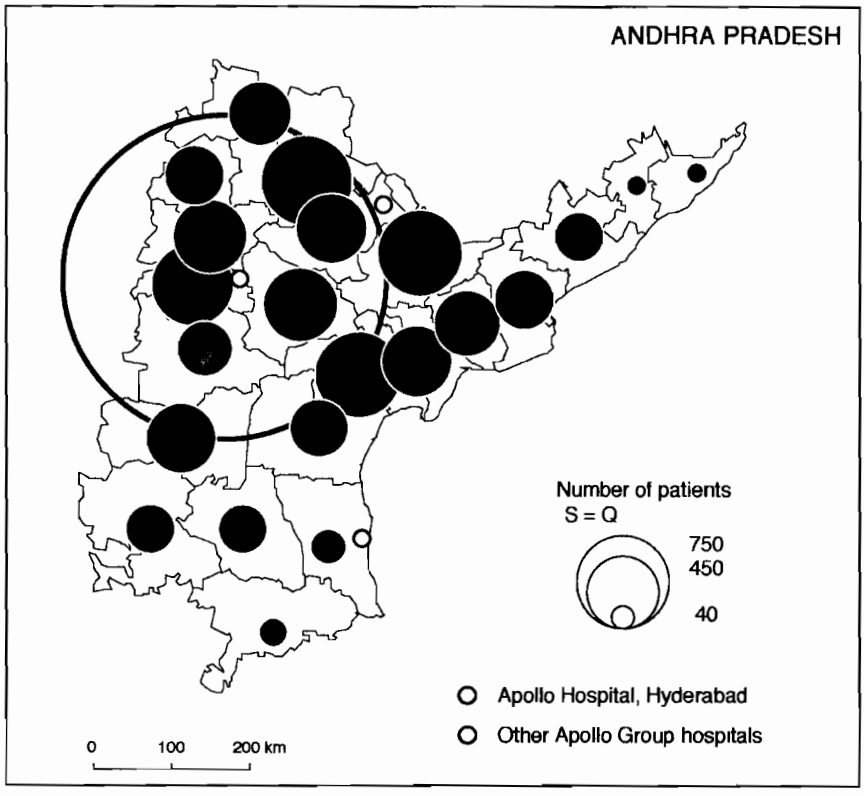

Figure 10.4: Attraction area of a hospital in Hyderabad: Andhra Pradesh

As for poorer people, they have no access to these facilities, and the economic gap is such that it is additionally perceived as social and cultural. In Andhra Pradesh, the Legislative Assembly has ordered an enquiry into the private health centres, for non-fulfilment of the initial contract. In fact, these hospitals were supposed to reserve 10 per cent of their beds and 40 per cent of consultations for the treatment of people earning less than Rs. 500 per month.[9] Nevertheless, the medical lobby has always been very active and the present economic and political influence of these hospitals will probably lead to the matter being dropped.

9. The concessions on location and functioning granted by the government were given on this condition, but nothing was done to inform the people eligible: "Corporate hospitals not working for poor", Indian Express, April 7 1995.

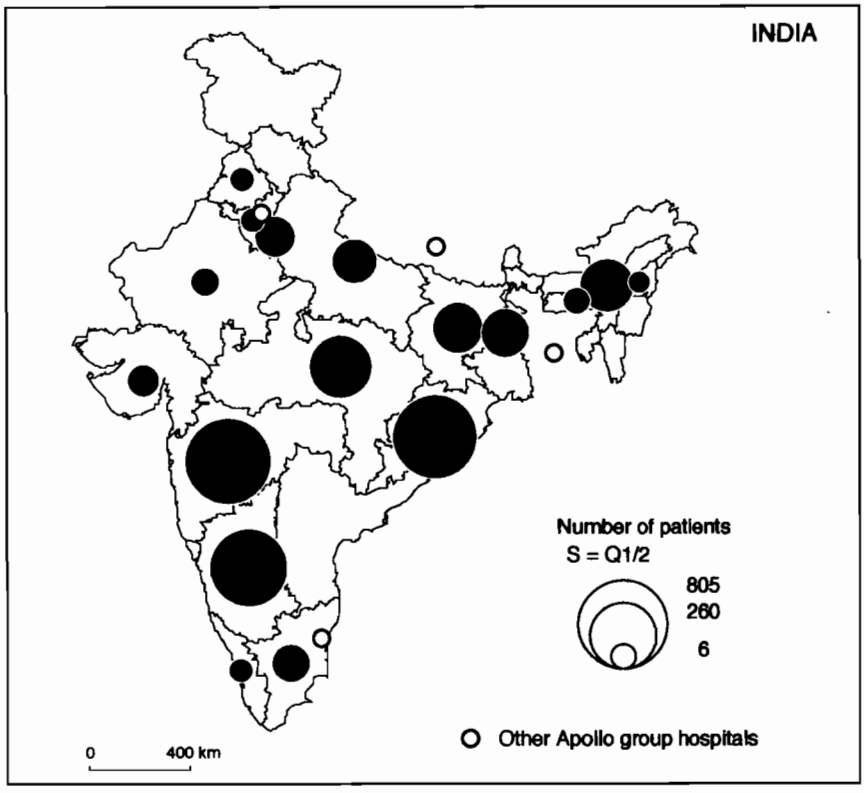

Figure 10.5: Attraction area of a hospital in Hyderabad: India

The very presence of these hospitals seems to have led to a change in the demand for care. Of course, the phenomenon of epidemiological transition also explains this development. Nowadays infectious diseases are being matched by chronic and degenerative ones. Widening of the pathological field therefore has some effect on the new patterns of use that are being observed. However, orientation of the health care system towards a predominance of technology has modified some health practices. The richest classes nowadays get regular medical check-ups, and turning to high-quality private centres constitutes one of their first reactions to an illness, as much as home remedies.

Conclusion

The development of the private health care sector, and the recent opening up of the Indian market to foreign companies has considerably altered the

supply and type of medical care available. In addition, this development is very clearly identifiable in the urban landscape.

Health is not the only sphere to be affected, and the well-publicized entry of the Coca-Cola company also emphasizes this policy of liberalization. This example is not without significance. The visual impact created by this company (with its bill-boards, street stalls...), like the hospitals with their monumental architecture, has become a very strong spatial marker. The American Dream is within reach. The groups that have established themselves in the medical field are fully aware of the spatial and cultural significance of their presence in India. Everything possible is done to stress this American image, including the naming of the hospitals. Earlier we identified two patterns of expansion, according to the local or non-local origin of the centres. The hospital chain, which demonstrates the ultimate form of the endogenous type, bears the name of its founder (C. Dayakar Reddy). The "horizontal" network illustrative of the exogenous model bears the evocative name "Apollo."

Therefore, it seems as if Hyderabad today is a medically privileged area. For part of its population, this is certainly true. The upper classes, who formerly had to go to Mumbai or to Vellore (Christian Medical College), now have very high quality care facilities at their disposal. However, the middle classes, whose demand for medical care is increasing, often need to borrow in order to take advantage of them. And most of the population has only two possibilities, apart from traditional or informal facilities: individual practitioners and nursing homes where the quality of treatment varies widely, or the public sector. Because there is a total absence of any "culture of public service", this sector is currently suffering from a loss of medical staff. The government health centres in towns are not growing, and doctors refuse to work in rural areas: nowadays this is affecting even fresh graduates. Moreover, doctors in service are turning towards the private sector. Despite governmental ban of this kind of multiple practice (Non Private Practise Allowance), many of them do set up their own nursing homes or act as consultants in the private hospitals. Consultations in the government centres are perfunctory, and patients are invited to follow the doctor to his private centre where the equipment is better.

The state is no longer able to administer the health system, or to exercise any control over the private sector. It is even considering introducing fees for treatment in its own government services. The government's financial problems are to be transferred to the patients. This measure cannot but increase the indirect costs already paid by those who use the public sector (loss of time...)

The state is increasingly delegating its powers, and by including medicine under the Consumer Protection Act (1995), it seems to be passing the responsibility on to the consumer groups. Patients now have legal methods of recourse, to sue health centres for compensation in cases of negligence or medical error. The inevitable consequences have followed: doctors are increasing the number of tests and diagnostic procedures, so as not, to miss any possibility. This type of "defensive" medicine only raises the patients' bills.

In this context, we may well wonder what will become of the "Health for all in the year 2000" project. India is still far from this goal—is it going to continue only along the same lines?

PART V

WOMEN AND MINORITIES

11

A Geography of the Sex Ratio in India

P.J. ATKINS, J.G. TOWNSEND, S. RAJU and N. KUMAR

I. Introduction[1]

The 1991 Census of India found 407 million girls and women but 439 million boys and men in India.[2] For every 1000 males there were only 927 females, a figure which is called the "sex ratio."[3] India has one of the lowest proportions of girls and women in its population in the world, although China and some of the countries in North Africa and the Middle East are not far behind. The figure for industrialized countries is 1050, for sub-Saharan Africa 1020 and for South East Asia 1010. In order to achieve the world average shown in Table 11.1 India would need 32.9 million more females.

The sex ratio has been falling in India for most of the 20th century, becoming more and more unlike most other countries and reaching its lowest ever value in 1991. The only improvements recorded this century were in 1941-51 and 1971-81 (Table 11.1). Since the proportion of women and girls in the population is a measure of their survival rate and therefore well being. This improvement was regarded as a break-through, but the 1991 figures indicated a disappointing resumption of the dominant trend.[4]

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1. The issues in this paper are explored in greater depth in Raju *et al.* (1999).
2. Including estimates for the state of Jammu and Kashmir where no census was held.
3. The Census of India calculates the sex ratio as the number of females per thousand males, but internationally it is more usually expressed as the number of males per thousand females.
4. The checks made after each census do not support any suggestion that the counting of girls and women in 1991 was less complete than in 1981. Nor do sex-selective migration or the ageing of the population explain the pattern (Drèze and Sen, 1995).

Medical care and neglect

There is strong medical evidence that, given access to similar food, care and medical attention, fewer girls and women die at all ages that boys and men because they are biologically stronger (Waldron 1976). Yet, in India more die than males through childhood and their reproductive years, until the age of thirty. Until very recently, life expectancy at birth for girls in India was lower than that for boys, which is very unusual.

Table 11.1: Selected sex ratios: females per 1000 males

The world (excluding China and India)	1002
United Arab Emirates	448
Qatar	489
Saudi Arabia	788
Pakistan	905
India	*927*
Bangladesh	943
China	943
United Kingdom	1045
United States of America	1051
France	1060

Source: United Nations (1995) *Demographic year- book* New York: United Nations.

Table 11.2: The Indian sex ratio, 1901-91

1901	972	1951	946
1911	964	1961	941
1921	955	1971	930
1931	950	1981	934
1941	945	1991	927

Source: Census of India

It seems clear that there is a relative neglect of the health and well-being of girls as well as women. The killing of girl babies has a long history in north west India but remains common only in certain limited communities (Premi and Raju 1996). Most of the extra deaths of little girls occur after the age of one, so infanticide is not as widespread as is sometimes claimed. There is, however, a great deal of evidence of girls being given less food and care than boys, especially in north India. Breastfeeding of girls is shorter, girls are taken for fewer medical consultations and later or not at all to hospital (Drèze and Sen 1995).

"Natural" balances between males and females in human populations are difficult to discern because of the intrusion of cultural habits and technological improvements, but it seems that more males than females are always conceived, then males are at higher risk of morbidity and mortality in the first few decades of life in most societies. In recent hospital records in India, however, 89 girls were born for every 100 boys from 1981 to 1991 as against 94 from 1949 to 1958 (Premi and Raju 1996).[5] Similar changes have appeared in western China and Korea. Since male foetuses are relatively more prone to miscarriage, some increase in the births of baby boys may be because of improved ante-natal care, as in the West. But technologies such as amniocentesis and ante-natal scans now enable parents to have female foetuses identified and aborted.[6] In

5. Interestingly, the Sample Registrations System shows no such trend.

6. To know the sex of an unborn child, it used to be necessary to wait for eighteen weeks from conception and have an amniocentesis, a minor operation with some small danger to the child. More recently, it has become possible to know by a scan of the womb at a much earlier stage. A scan is very much cheaper and safer, and is widely advertized and available in India. The Prenatal Sex Determination Technique (Regulation and

China, the number of girls born per hundred boys fell from 95 to 93 in 1987 and 91 in 1991, which was thought to be caused by sex-selective abortion of female foetuses identified by ultrasound, illegal but widely used by the mid 1980s (Zeng 1993).

Everyone gains when more babies survive. The more who live, the fewer are born, so that the survival of more babies slows the rate of population growth, a phenomenon observed around the world. Having fewer babies, more of whom survive, is better for the babies, better for the country and better for the mother, who can then be healthier, give more care to their children and realise some of their own aspirations. For instance, in South Asia, 80 per cent of pregnant women suffer from anaemia, the highest rate in the world, so that repeated pregnancy is not healthy for them. Both numbers of babies and deaths of mothers in childbirth are especially high in a belt from Rajasthan through Madhya Pradesh and Uttar Pradesh to Bihar.

India has done well in reducing the deaths of babies. In 1991, fewer babies died in their first year in India than in 32 other countries, some better off than India. Only 29 countries, all rich, did better than the state of Kerala, but still there is inequality. In 1991, the average death rate for children under five was 26 for boys but 29 for girls, and it is clear that the care of girls and boys varies between states and between the districts of a given state. For example, the life expectancy at birth of a girl in Uttar Pradesh is some 20 years lower than that of a girl in Kerala. In Kerala, where the fewest children in the country die, even fewer girls die than boys, whereas in Uttar Pradesh, not only are there far more deaths of children, but one fifth more girls die than boys.

Clearly, there is little difference between the rates of deaths of girls and boys before age one.[7] Indeed, in more than half the districts of India (227 out of 429), more baby boys died than girls, as we would expect from other countries. Districts where more baby boys died were scattered from Kerala in the south to Gujarat in the west and Madhya Pradesh in the centre. There were even several districts in the northern plain where more baby boys died than girls, although the region is well known for treating boys better. As long as death is due mainly to biological factors, this is to be expected. By the ages of three (Figure 11.1) and five (Figure 3.2), the well-known regional distribution of disadvantage for baby girls is well established. In 1981, only 175 of the 429 districts with information showed more boys dying. By age five, in the states of the northern plain, it is only in hill districts of Garhwal, Uttar Kashi and Dehradun in Uttar Pradesh that more boys still die. Surprisingly, looking at death rates for girls under five, Uttar Pradesh has both a district with one of the lowest sex specific death rates (Uttarkashi, in the hills) and the five districts of India with the highest (Agra

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Prevention of Misuse) Act was passed by the Indian Parliament in 1994. It banned the sex determination test of unborn babies except under specific conditions. As with dowry, changing the law will not change the practice until there is charge in public opinion and mindsets and there are celebrations for the birth of a girl.

7. It is important to remember that the information for death rates before the age of one is probably not reliable, and that large numbers of deaths can as likely mean better recording as worse health conditions, just as few deaths may mean bad reporting.

is the very highest, followed by Etah, Mathura, Firozabad, Mainpuri and Bharatpur). The hills and the plains are in very different cultural realms (Sopher 1980).

By age five, it was only in Andhra Pradesh, Himachal Pradesh, Kerala and Tamil Nadu that more boys had died than girls, as would be usual in other countries. Broadly, there is a north-south contrast in the treatment of little girls. In the Punjab, Uttar Pradesh and Bihar in the Indo-Gangetic plain, many more little girls die. The Narmada Valley marks the broad division between the north, where relatively more little boys survive and the south, where the difference is less marked or where more little girls survive.

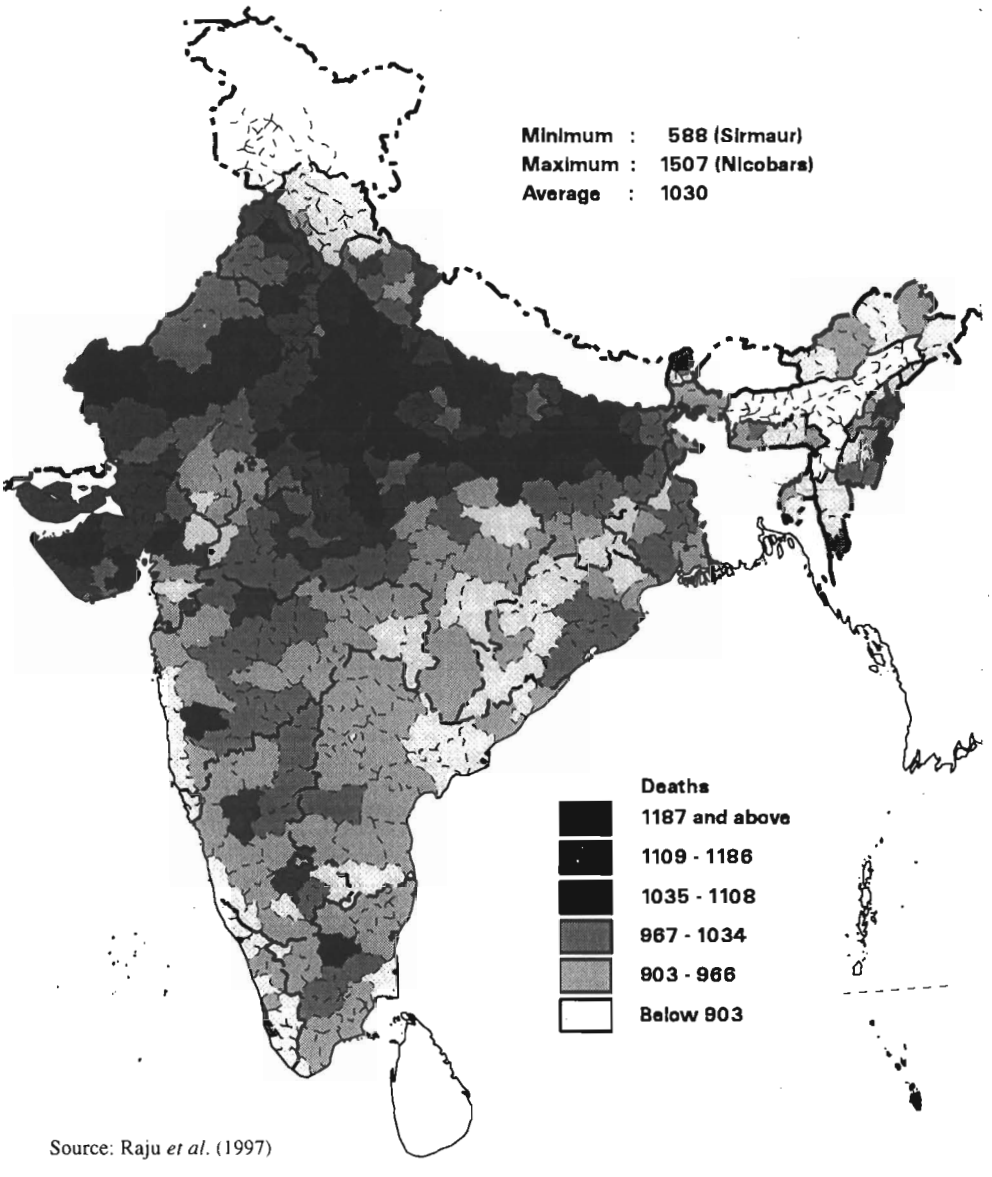
Impressive differences appear between the non-tribal northern area and the tribal area of the Chattisgargh region and the Chota Nagpur Plateau in Madhya Pradesh. In almost the entire tribal belt, even including the areas north of the Narmada (southern Rajasthan, western Madhya Pradesh, eastern Gujarat) as well as the north east of India, many small children die, but not many more girls than boys.

There is some limited data on malnutrition, although it is rarely available for girls and boys separately. Again, it seems that there is no clear relationship between the income of an area and the underfeeding of children. For example, Madhya Pradesh and Maharashtra have the same rates of malnourished children, although Maharashtra's income per person is half as much again as that of Madhya Pradesh. In the Punjab, it is in the richer households that girls are more likely to be fed less than boys (Drèze and Sen 1995).

The number of girls relative to boys under seven are particularly low in parts of Gujarat, Haryana, north western Madhya Pradesh, Punjab, Rajasthan and, with the exception of the hill districts, in western Uttar Pradesh. They are scarcest in Punjab an Haryana where not a single district has more than 900 girls to 1000 boys. These states have 28 districts out of 55 in India with this dubious distinction. The situation is most severe in Salem in Tamil Nadu. Behind in Madhya Pradesh and Jaisalmer in Rajasthan with 859, 850 and 851 girls to 1000 boys. In Tamil Nadu, Madurai and Dharmapuri also have exceptionally few girls (and women), the last two having been in the news for the alleged murder of baby girls.

In some villages, the proportion of girls in the child population is even smaller. Premi and Raju (1996) used the 1991 Census to locate those villages in Rajasthan and Madhya Pradesh with very few girls. Tanumanji village in Barmer, Rajasthan, for instance, recorded 245 girls per 1000 boys. On the other hand, East Kameng in Arunachal Pradesh, at the other extreme, has 1036 girls to 1000 boys.

All 15 districts with more than 1000 girls for 1000 boys are located either in the tribal north-east, or in tribal Madhya Pradesh and Orissa.



Source: Raju *et al.* (1997)

Figure 11.1: The sex ratio of deaths at age 3, 1981, females per thousand males

Regional variations in the sex ratio

Superficially, there are significant regional differences in the proportion of girls and women in the population (Figure 11.3 and Table 11.3). The state of Haryana, with 865 per 1000, has the smallest proportion of women and

girls in the world with the exception of a few places with large numbers of men migrant workers, such as the Falkland Islands or countries in the Gulf.[8] In the same region of India, parts of Gujarat, north western Madhya Pradesh, the border districts of Rajasthan and western Uttar Pradesh (with the exception of the hill districts) also have low sex ratios.

The root causes for the neglect of girls and women and its variation over space are far from obvious. Several of the explanations advanced have regional manifestations that help us to understand the patterns. First, there is the suggestion that females are differentially valued according to their economic functionality. The difference between rice (east and south) and wheat growing areas (north west) and their different work needs for women and girls is a case in point because rice transplanting and weeding is defined as women's work but most of the tasks in the wheat calendar are male dominated (Miller 1981; Rosenzweig and Schultz 1982).[9] General figures support this, but detailed local figures do not (Harriss and Watson 1987; Raju and Bagchi 1993).

Second, there is the Sanskritic/Dravidian sociocultural divide between north and south. Dyson and Moore (1983) argue that this is at its most significant in the differences of marriage patterns and the practice of dowry (Dyson and Moore 1983). Rural tradition in the Indo-Gangetic plain forbids marriage within the village or between close relatives, but such marriage is allowed further to the north, south and east. this exogamous tradition of marriage is reinforced by a strong bond between patrilineally related male kin, whose power and sense of honour is partly derived from the control of their women's lifestyles. Female mobility is therefore regulated by purdah, and mixing with natal kin is discouraged. Even husband-wife relationships are not allowed to undermine the primacy of the male network. Before Independence, the custom of giving a dowry with a daughter in marriage was widespread among the 'higher' castes. Although independent India outlawed dowry, the custom has not only survived but also spread to new areas of India, to other castes and to poorer people, when these have gained in prosperity, as with the Green Revolution. The prospect of paying a dowry to marry a daughter understandably dismays parents. Before marriage, she may never earn an income and her unpaid household and agricultural work for the family will be invisible. She will go to live with her husband's family, perhaps in a neighbouring village or even further away, and is therefore an economic loss to her parents. A daughter may expected to marry "up", into a higher caste or richer family, which will demand an even bigger dowry. All of these problems are traditionally most severe in north India.

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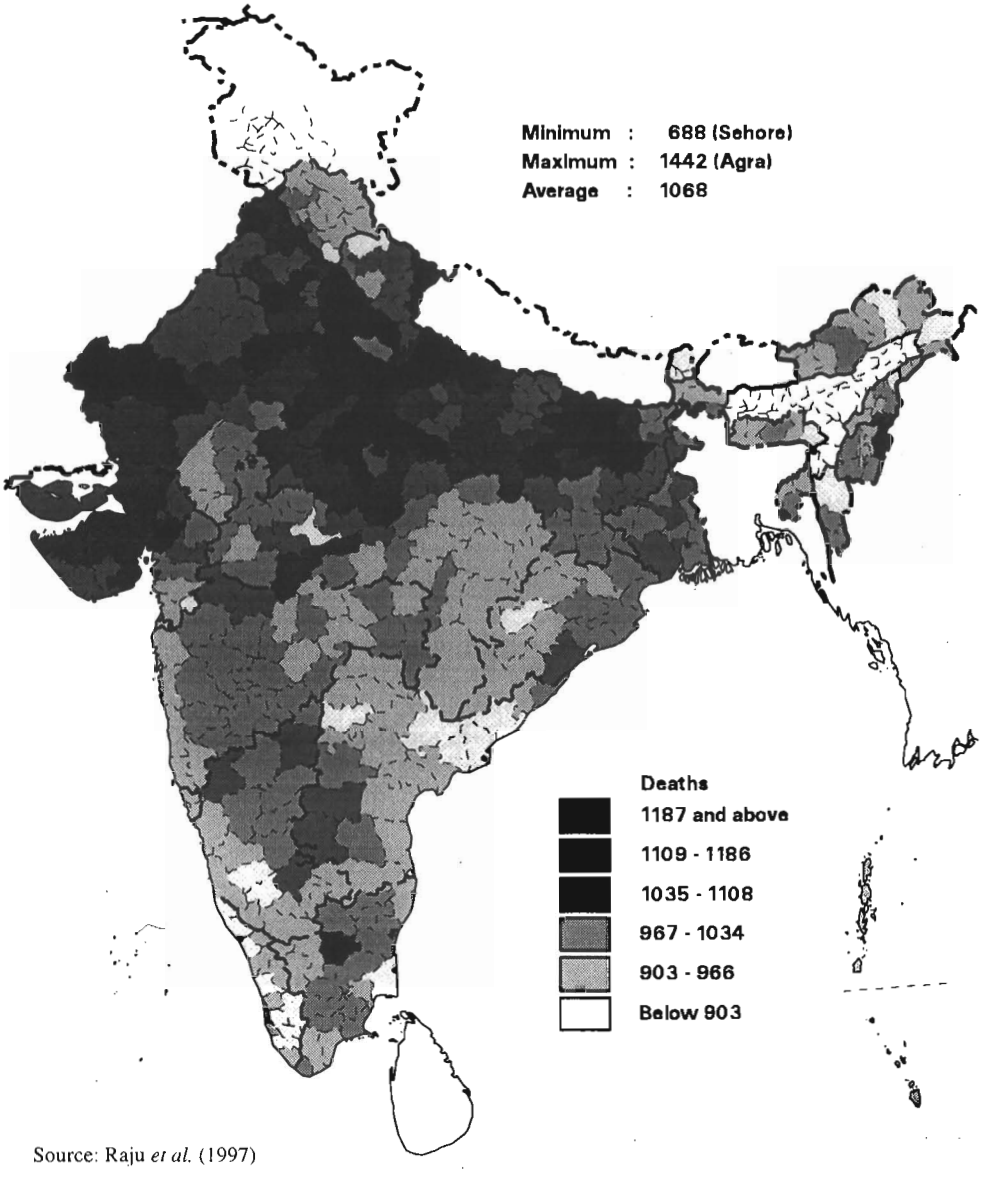
8. Haryana has also experienced immigration. The other states and territories with lower sex ratios have small populations, many of which have been unbalanced by inward or outward migration streams.
9. This argument ignores women's household tasks and their important role in home processing for market.



Source: Raju *et al.* (1997)

Figure 11.2: The sex ratio of deaths at age 5, 1981, females per thousand males

Murthi *et al.* (1995) measure the "cultural worth" of Indian girls and women in terms of their labour force participation (Rosenzweig and Schultz 1982; Kishor 1993, 1995). This is significantly higher in the south in most economic sectors and, interestingly, is strongly and negatively correlated with child mortality. This may be because there is a demonstrably greater

return on investment in girls through a higher probability of them earning a wage a reduced cost of rearing them because dowries are lower. Alternatively, one might suggest that paid work helps to raise female status generally and particularly their bargaining power within the family. Certainly, women earners have a lesser need to prefer sons who would look after them in their old age. Third, there are argued to be important regional differences in the autonomy of women and girls (Dyson and Moore 1983: Jeffery and Jeffery 1994). By autonomy is meant control over one's own sexuality, fertility, freedom of movement, and choice of friendships and marriage partner; inheritance, ownership and disposal of property access to information, knowledge, and the expression of opinions in public and through the ballot box; and access to rights and decision-making power within the domestic setting. Purdah is strongest in north west India, for instance, while in the south more girls are educated and more women vote. In Kerala, females traditionally had rights to land, although this has changed considerably since the land reforms under successive left wing government.

Female education is a key to some aspects of this complex web of factors. Murthi *et al.* (1995) find for the 1981 Census that there is a negative and statistically significant relationship between female literacy and child mortality, with a larger impact on the deaths of girls. Better educated mothers are likely to be less consciously discriminatory and they make fuller use of locally available medical facilities, thus maximizing the life chances of their offspring of both sexes.

Dyson and Moore (1983) identify two basic demographic régimes in India: north versus south and east. In the south and east are found long-standing patterns of relatively low fertility, later age of marriage, and lower infant and child mortality. In addition it seems that female disadvantage is greatest amongst children of high birth parity (Dyson and Moore 1983, Murthi *et al.* 1995), because of the decreasing marginal return on additional girl babies in a large family with a low income.

Two myths should be dismissed about the sex ratio. First, regional contrasts in the survival of girls are far more striking than any contrasts relating to religious identity. Kerala, with the highest proportion of girls and women, has many Muslims, while the Punjab and Haryana, with the lowest, have only a modest Muslim presence (Table 11.3). Girls in Pakistan and north India have very similar chances of survival (Drèze and Sen 1995).

Second income levels do not explain sex ratio patterns. In Rajasthan the landed, high status Rajputs have very few girls and women (Premi and Raju 1996). The Punjab and Haryana, where there is least poverty, have only 880 and 874 women and girls to 1000 men and boys. Economic growth and the education of poverty may initially put women and girls at a greater disadvantage. Where more girls and women survive, there tend also to be: many girls and women who can read and write, and many girls and women in paid work. However, there is some evidence that poorer families are less discriminatory and this is worrying if the process of development leads to greater sex imbalance.

Table 11.3: Sex ratios by state and union territory, 1991

State	All groups	Hindus	Muslims	Urban	Rural	Scheduled Castes	Scheduled Tribes
Andhra Pradesh	972	973	958	959	977	969	960
Arunachal Pradesh	859	708	531	728	880	627	998
Assam	923	915	938	838	934	919	967
Bihar	911	904	938	844	921	914	971
Goa	967	923	866	930	993	967	889
Gujarat	934	932	947	907	949	925	967
Haryana	865	862	872	868	864	860	-
Himachal Pradesh	976	980	840	831	990	967	981
Karnataka	960	960	952	930	973	962	961
Kerala	1036	1041	1048	1034	1037	1029	996
Madhya Pradesh	931	931	924	893	943	915	985
Maharashtra	934	935	903	875	972	944	968
Manipur	958	961	958	975	951	973	959
Meghalaya	955	800	869	910	966	821	997
Mizoram	921	374	100	932	912	157	982
Nagaland	886	552	605	749	917	-	946
Orissa	971	970	938	866	988	975	1002
Punjab	882	867	824	868	888	873	-
Rajasthan	910	908	921	879	919	899	930
Sikkim	878	874	407	750	892	939	914
Tamil Nadu	974	971	999	960	981	978	960
Tripura	945	944	949	958	942	949	965
Uttar Pradesh	879	875	897	860	884	877	914
West Bengal	917	914	923	858	940	931	964
Union territory							
Andamans and Nicobar Is.	818	797	843	769	837	-	947
Chandigarh	790	769	670	810	632	810	-
Dadra and Nagar Haveli	952	957	831	817	965	925	1022
Daman and Diu	969	963	1022	1024	922	1067	931
Delhi	827	823	798	830	807	834	-
Lakshadweep	943	435	988	930	959	-	994
Pondicherry	979	963	1092	985	970	983	-
India	*927*	*925*	*930*	*894*	*939*	*922*	*972*

Source: Census of India

The balance of the sexes in countryside, towns and cities

In rural India, there are 939 girls and women to every 1000 boys and men (Table 11.3). The even smaller numbers (894) of women and girls in towns has been explained in terms of men leaving the countryside to work in the

towns and leaving their families behind, as they often do in the north, along with the relatively high proportion of employment opportunities in agriculture for the remaining women. But if this was the main cause of imbalance, the nearby rural areas should have extra female representation. This is found in the hill districts of Uttar Pradesh and Himachal Pradesh or Durg in Madhya Pradesh and in parts of Maharashtra, where there are many girls and women in the countryside and few in towns. In the rest of India, the proportion of girls and women in *towns* is like that in nearby rural areas, but lower. Sopher (1980) explains this pattern in terms of overwhelming social and cultural factors which affect the treatment of women and girls and are regional rather than rural or urban. Kerala is a case in point. The proportion of women and girls is extremely high for India, but a little lower in towns: the rural figure is 1037 and the urban 1034. Here, the numbers of men who migrate to work in the Gulf reduces the proportion of men (Gulati 1993). Urban districts of Andhra Pradesh and Tamil Nadu in south India have relatively more girls and women than Orissa, West Bengal and Bihar. This can be understood in terms of family migration being more common in the south.

Women and girls are even fewer in cities[10] Drèze and Sen (1995) show that this is especially true where high levels or urbanization are coupled with low levels of poverty. There is change here, however. At 880, Indian cities now have more girls and women than in 1961 (800) (Raju and Bagchi 1993). This is an improvement for women and girls even though their proportion of the national population is still shrinking. Overall social and cultural constraints can be overcome in cities, and work opportunities (particularly in trade and non-household industries), together with the ability to read and write, do help women and girls in the cities. Here, for non-scheduled caste girls and women, white-collar jobs and work in services are important. Premi (1990) observes that employment and education are becoming increasingly important reasons for better-off women and girls to move to urban centres.

Again, these relationships are only suggestive and do not tell us what the actual processes are: do girls and women survive in the cities and countryside because they can read, write and work, or are they taught to read, allowed to work and enabled to survive because they are highly valued?

Caste

The list of castes which are scheduled changes from time to time and from one state to another, so that comparisons are difficult.[11] But the available evidence indicates that, although before Independence there were more women and girls in the castes now scheduled than among other Indians, this is no longer the case. Indeed, the decline in the number of girls

10. A city in the Indian Census has over 100,000 people.
11. The terms "scheduled caste" and "scheduled tribe" refer to historically underprivileged groups who receive special treatment under the Contribution.

and women in the population seems to have been particularly pronounced among the scheduled castes. The scheduled castes have taken the "dominant" castes as their model as they gained in economic terms, with the lifestyle of women playing a central role as a symbol of social status (Drèze and Sen 1995). For example, in 1901, among the 'untouchables', the Chamar caste in Uttar Pradesh had 986 girls and women for every 1000 boys and men. In 1981, the figure for this now scheduled caste was 880, very close to the state average. Much of the decline took place after 1961. The landed, martial castes in the same state, the Kshatriyas, Rajputs and Thakurs, were already at 887 in 1901. They had a long tradition of fierce patriarchy, with practices of girl murder, child marriage, seclusion, dowry, sati (suicide of widows) and polygamy among others. Their proportion of women and girls is thought to have changed little since 1901; rather, other Indian populations have become more like them, and this is one explanation of declining sex ratio (Drèze and Sen 1995).

The place or *region* is now more important in determining a women's or girl's survival than her caste or religion, for even across religion and caste, cultures in the same place in India influence each other strongly (Raju and Bagchi 1993; Drèze and Sen 1995).

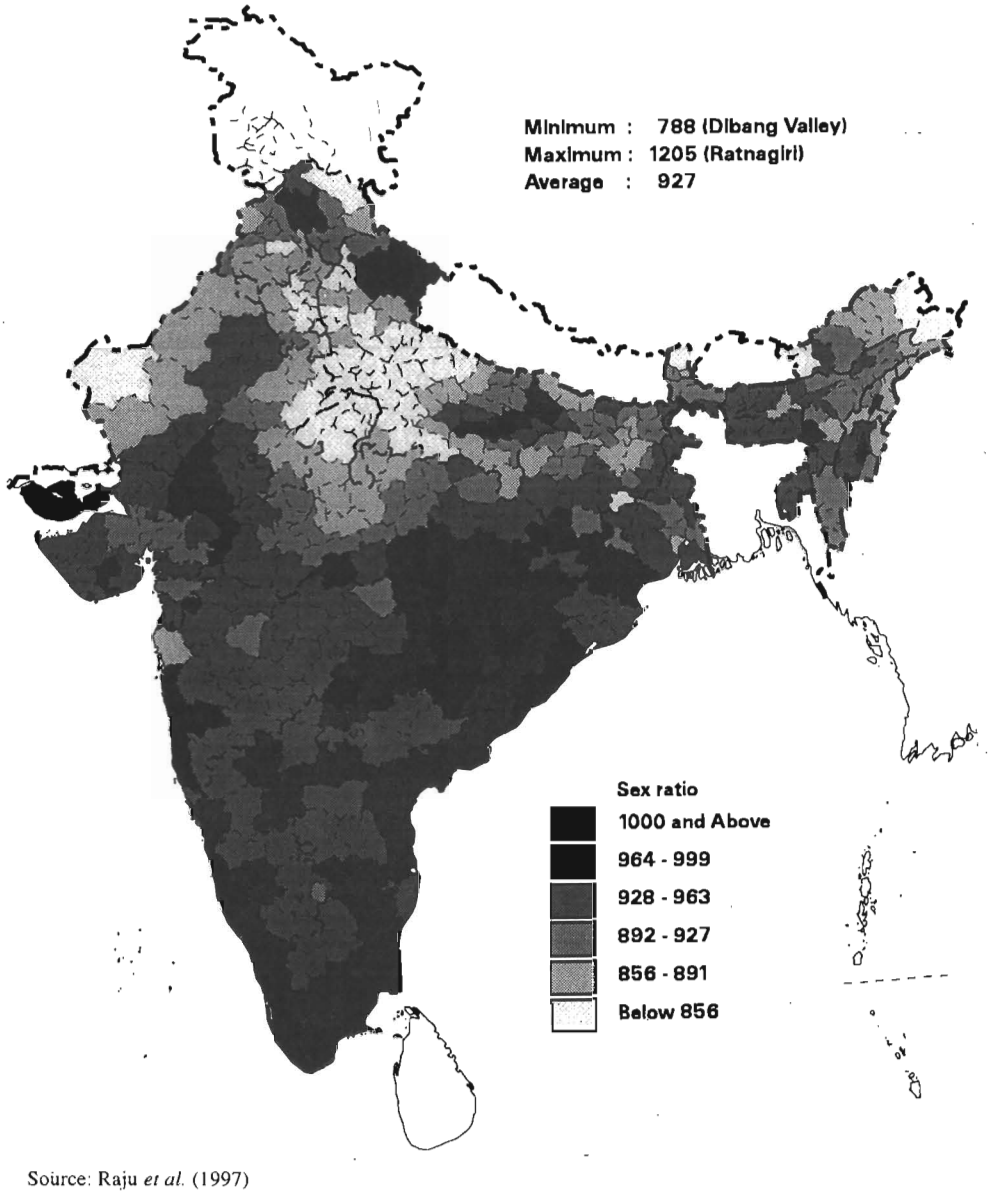
Scheduled Tribes

Other than in Kerala, the areas of high to very high levels of girls and women in the population are essentially tribal in character. The survival rates of males and females are clearly more equal than in most other Indian communities, as are their numbers. The larger the numbers of tribal people in a district, the more balanced the population, which confirms the popular belief that gender inequalities are less marked in 'tribal' than in 'non-tribal' India.[12] There seems to be no gender bias in access to basic needs of food and care and, although many children die, the difference in death rates between boys and girls is low. It may be not only that more girls and women survive, but that there is less under-reporting and undercounting.

Significantly, balanced populations are found across the tribal heartlands of east central India and the north east, despite important differences between tribal communities in these geographical areas, especially, where scheduled tribals are in a majority or near majority of local population (as in Orissa), or where the locally dominant non-tribal group has itself a balanced population (as in Kerala). In districts subject to rapid "detribalization" in the 20th century (such as Hazaribagh in Bihar) the tribal sex ratio is often lower, which is a source of concern. This also happens where there are relatively few tribal families, as in parts of western Uttar Pradesh, which suggests that small tribal communities have adopted behaviour typical of the non-tribal communities of the region. Detribalization has proceeded rapidly in this part of India, even though some groups continue to be recorded as scheduled

12. But Kishor (1993) finds that the positive tribal effect disappears when patrilocal exogamy is included in an explanatory regression equation.

tribes for the purposes of the census and of regional planning. More tribal girls and women survive where their share of agricultural work is high.



Source: Raju *et al.* (1997)

Figure 11.3: The sex ratio at all ages, 1991, females per thousand males

Scheduled castes in the past and scheduled tribes today tend to have more girls and women than the population as a whole, and are often regarded as having more egalitarian relations between men and women. But even among scheduled tribes, not only is the proportion of the population who are women or girls declining, but the decline is the fastest amongst all groups; from 983, in 1981 to 972 in 1991. It seems that the patriarchal norms of the higher castes, and sanskritization and detribalization are similarly assimilating tribal peoples into a national culture of discrimination against girls and women (Drèze and Sen 1995).

Conclusion

Although in 1991 the presence of girls and women in the Indian population was the smallest ever, there is hope. In the 1990s, a higher proportion of girl children is surviving, to the extent that their mortality record is beginning to catch up with the boys (Government of India 1995). Since 1994, the sex of a foetus may only legally be identified under special circumstances and in special places. But hope will depend on social change and the acceptance of the law. National and state plans have set out to give Indian girls the same rights as boys by the year 2000 and many grassroots and non-government organizations have had real success.

Further progress will depend upon the issue staying before the public and the maintenance of a sustained campaign to gain the autonomy for women which seems to have such a positive effect. Academic research will play an important role because there is a dearth of empirical work at the micro-scale of the region, village and household to test the regularities which we have advanced here in the most general form.

12

Geopolitics of Refugee Flows in India

Gilles BOQUÉRAT

Population movements in the Indian subcontinent have always existed and have even left an indelible mark on the history of the region. In the first fifty years of its existence, independent India has on several occasions received on its soil displaced populations, whether it be a matter of people of Indian origin who have become undesirable in the host country, or indeed foreign communities who have been victims of repressive discriminatory treatment or who have fled a situation endangering the lives of their members.[1] The influx of refugees has seldom discontinued and has even taken the form of mass exodus when millions of individuals poured in India during the months following independence, or at the time of the Bangladesh war of liberation. There are over 200,000 refugees in India in mid-1999.[2]

1. The right to seek asylum is governed by the United Nations convention relating to the status of refugees of July 1951 and by the 1967 Protocol which extended in time and space the area of application of that convention. Any person who is outside the country of his/her nationality as a result of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion or, owing to such fear, is unwilling to avail himself of the protection of that country, can lay claim to the status of refugee. The notion of refugee can also be extended to persons who are compelled to leave their country of origin because their lives or security would be endangered for reasons such as armed conflicts or civil strife.

2. Knowing the exact number of refugees is a difficult task since not all of them are officially registered. The Government of India has usually been reluctant to allow interference from international organizations regarding asylum seekers. Yet, the United Nations High Commissioner for Refugees (UNHCR) runs an office in New Delhi, but has not access to some of the refugees on Indian territory. As of 30 June 1999, there were more than 100,000 Tibetan refugees and 64,000 Sri Lankan refugees in India. Besides, the UNHCR is exercising its mandate over 16,513 refugees, mainly in the New Delhi area. It breaks down into 15,349 Afghan, 641 Burmese, 186 Iranian, 176 Somali, 95 Sudanese, and 66 others (*Source*: UNHCR, New Delhi). Thousands of Burmese who took shelter during the last ten years in north-east India are not officially accounted for. To these figures must be added a few thousand Bhutanese of Nepalese origin who, fleeing the sectarian policy directed against them by the Bhutan monarchist régime,

These displacements of population were facilitated by the existence of long and relatively porous borders with several countries, of sociocultural similarities facilitating the adaptation to a new environment, and more generally India's tradition of extending hospitality and refuge to those fleeing persecutory elements in their countries of origin. Yet, since India, as well as other South Asian countries, is not a party to the 1951 UN convention relating to the status of refugees and its 1967 protocol, the attribution of refugee status is discretionary and can consequently fluctuate with evolving political priorities. In the absence of any specific constitutional or legislative measures with respect to individual asylum determination, the refugees are prone to be treated like any other foreigner and are subjected to the respective laws and regulations governing the entry, stay and departure of foreigners.[3] To define a proper legal framework, informal consultations on refugee and migratory movements in South Asia were established in 1994, associating eminent persons from Bangladesh, India, Nepal, Pakistan and Sri Lanka. The objective is to encourage their respective governments to consider the adoption of a model national law establishing a procedure for granting of refugee status to asylum seekers.[4]

The processions of partition

The evocation of refugees flows in India inevitably leads back to the Partition of the former British India in mid-August of 1947, and thus to the division of the provinces of the Punjab, Bengal and Assam which was expressed by a vast and tragic exchange of communities on a religious basis. Although this migratory phenomenon began prior to independence—one year earlier in Bengal, and from March 1947 in the Punjab—, it was above all afterwards that it assumed enormous proportions. Those who migrated across the newly created border from Pakistan into India were considered as "internal refugees" and acquired all the rights and duties of nationals.

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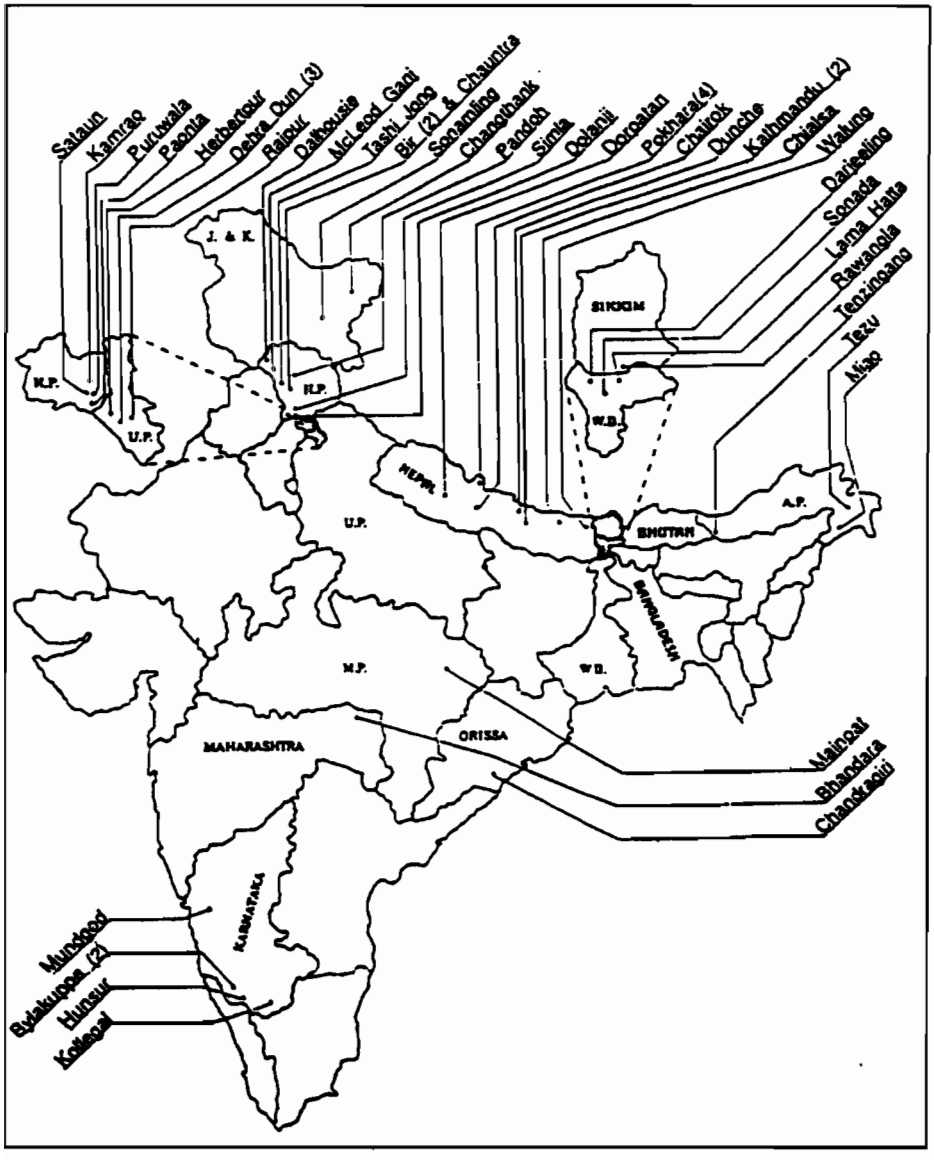
preferred to settle in West Bengal and in the neighbouring Indian states, rather than take the way of the refugee camps located in eastern Nepal.

3. The Tibetans, the Sri Lankans and the Chakmas are for all practical purposes recognized as refugees by New Delhi and assisted by them as such. Afghans and refugees of other nationalities are considered by the Government to be temporarily in India and subsequently, they have not been officially recognized as refugees. Their presence is however tolerated. The UNHCR recognizes them under its mandate and assists those in need.

4. A draft model national law on refugees was adopted at the fourth regional consultation on refugee and migratory movements in South Asia held in Dhaka in November 1997. At the next annual meeting of the regional consultations, held in Kathmandu in November 1998, it was decided to refine the model law in accordance with legislative, judicial and other country specific requirements in order to formally present it to the respective governments of the region. In this regard, a SAARCLAW/UNHCR workshop took place in New Delhi in April 1999 to discuss refinements to the model law specific to India. As a reflection of today's conflicts linked to inter-ethnic violence, ethnic identity has been added in the refugee definition as given in the 1951 UN convention.



Source: Bureau du Tibet, Paris. The number in brackets refer to places where there are several Tibetan settlements.

Figure 12.1: Map of locations of Tibetan settlements in India and Nepal

The 1951 Census assessed the number of non-Muslims who left Pakistan to seek refuge in India at nearly 7.5 million. In the other direction, 6 to

7 million Muslims chose to settle in the new state of Pakistan. Some 4.7 million Hindus and Sikhs left West Pakistan in the months following Independence, while elsewhere more than 2.5 million Hindus migrated from East Pakistan to the neighbouring Indian provinces of West Bengal, Assam and Tripura. If, in the latter case, the migration of Hindu populations from East Pakistan to India was comparatively spread out over time, as it continued in the course of the 1950s and 1960s, from the end of December 1947, the number of non-Muslim refugees from western Punjab, the North West Frontier Province (NWFP) and Sindh, reached nearly 4.4 million persons. There were approximately 1.25 million refugees accommodated in hundred sixty camps in India, of whom more than 720,000 in eighty-five camps were located in eastern Punjab (of which 300,000 at Kurukshetra), 150,000 in Delhi, and the remainder in other camps located throughout the country.[5] The question of their rehabilitation arose with even more acuteness as the area of lands they had left behind was greater than that of the holdings evacuated by the Muslims. While a large number of cultivators were granted land to exploit, notably in the Punjab, where nearly 500,000 farmers who arrived from West Pakistan benefited from a vast movement of redistribution and rationalization of property ownership, it was still necessary to accommodate nearly 2.5 million refugees in urban areas, whether in dwellings abandoned by Muslims, or in the framework of an extensive government housing programme.[6]

The rehabilitation of refugees from West Pakistan, which was to a large extent completed by the mid-1950s, was facilitated by the enormity and the swiftness of the transfer of populations from one to the other of the two Punjabs, which called for a rapid treatment of the problem by the Indian government, notably to decongest the camps. In 1951, one third of the population of the Indian Punjab was made up of refugees. These conditions did not obtain in the case of the division of the provinces of Bengal and Assam. While nearly all of non-Muslim communities in West Pakistan had chosen to settle in India, matters differed in East Pakistan where, in the early sixties, the non-Muslim population, essentially Hindus, still constituted 19.6 per cent of the total population (as opposed to hardly 3 per cent in West Pakistan). Thus, there was still a substantial potential for emigration in the Hindu community, a potential which was partly realized, considering that the latter in the early nineties constituted 10.5 per cent of the total population of Bangladesh.[7]

The first Hindus to leave East Pakistan belonged to the middle and upper classes, and they were for the most part in a position to resettle in West Bengal without any government support. When, at the beginning of 1950, renewed inter-communal friction saw more than one million Hindus from East Bengal go into exile, the Indian government strove to diplomatically avert any new exchange of populations. On 8 April 1950, an agreement was

5. Ministry of Information and Broadcasting, (1948, p. 11).
6. The Planning Commission, (1961, pp. 725-726).
7. According to the 1961 Census, Hindus accounted for 18.5 per cent of the population of East Pakistan, Buddhists for 0.7 per cent, Christians for 0.3 per cent and others for 0.1 per cent. Bangladesh Bureau of Statistics (1994, p. 103).

signed by Nehru and the Pakistani Prime Minister, Liaquat Ali Khan, which was intended to ensure the security and equality of rights of minorities in their respective countries. Although the mass exodus at the beginning of the year had slackened off, and some Hindus even made the return journey, the agreement was not of such a nature as to lastingly restore the confidence of the Hindu minority in East Bengal, particularly when it became clear that the first constitution of Pakistan, finally adopted in 1956, would officially make the state an Islamic republic. Those who henceforward left East Pakistan belonged rather to disadvantaged milieu, further impoverished by the exodus, and thus a continually growing number took refuge in the camps.

Their rehabilitation was complicated by the fact that the Muslims who fled to East Pakistan were clearly less numerous than the Hindu refugees seeking to establish themselves in East Bengal, and consequently there was little agricultural land available for distribution. As a consequence, a good number of refugees often found no other solution than to merge into the Calcutta population. Refugees from East Pakistan alone constituted, according to the 1951 Census, 26.9 per cent of that city's population, which represents approximately 686,000 persons (Chatterjee, 1990). The ambitious Dandakaranya project, inaugurated in the course of the second Five Year Plan (1956-1961), with the purpose of increasing agricultural resources by exploiting a tribal zone straddling Madhya Pradesh and Orissa in order to accommodate refugee families still staying in the camps in West Bengal, was a failure. The number of persons who fled East Pakistan between Partition and March 1971, at which time the wound of Partition again opened with the war of liberation in Bangladesh, is estimated at nearly 5.4 million individuals, 70 per cent of whom chose to reside in West Bengal, while the others for the most part settled in other Indian frontier provinces (Assam, Tripura, Mizoram or Meghalaya). Hindu migrants eventually came to constitute a large majority of the population of Tripura. Contrary to the Hindu refugees from West Pakistan who settled in the four corners of the country, those from East Bengal, then from Bangladesh, preferred to remain nearer their native country, even though an eventual return appeared increasingly problematical. In 1965, the Pakistani government adopted the "Enemy Property Act" authorizing the state to take possession of properties owned by Indians, a law pertaining mainly to Hindus who had left East Pakistan since Partition. This measure was again taken up in its major intent by the new Bangladeshi state under the name of the "Vested Property Act", giving way to frauds and abuses and reinforcing the feeling of insecurity of the minority community.

The Bangladesh war of liberation provoked until its conclusion in December 1971 an unprecedented population exodus. Within a period of nine months, roughly 10 million refugees crossed the border between India and East Pakistan, for whom the cost of accommodation was borne in no small measure by the Indian government.[8] The columns of refugees also represented an excellent breeding ground to sustain the anti-Pakistani

8. The Indo-Pak conflict of 1971 led also 44,000 Sindhis from Pakistan to enter Gujarat and Rajasthan.

guerrilla warfare—the Mukti Bahini—, which received arms and military training from India, without taking into account the fact that the massive presence of refugees on national territory offered a moral alibi for Indian intervention in the struggle for independence. The first to be subjected to the bloody repression of the Pakistani forces, and thus the most numerous to follow the course of exile, had been Hindus, some of whom preferred to remain in India after Bangladesh had attained independence, notwithstanding the officially professed secularism of the new state.

Hindus from Bangladesh continued to go into exile, in particular after the militaries seized power and, beginning in 1977, attempted to establish their legitimacy by promoting the Islamic identity of the country, with ultimately culminated in the adoption, in 1988, of the eighth amendment to the constitution making Islam the state religion. In 1981, the West Bengal government's refugee rehabilitation committee estimated that "no less than 80 lakhs, if not more, i.e. about one-sixth of the present population of the state consists of displaced persons from East Bengal, now called Bangladesh", and that more than 70 per cent among them lived below the poverty line.[9] It has been estimated that approximately 5 million Hindus immigrated to India in the course of the first twenty years of the existence of Bangladesh.[10] Following the demolition of the Babri Masjid in Ayodhya in December 1992, sectarian violence and large scale destruction of property and places of worship forced many Hindus to seek sanctuary in India. There were roughly 12 million Hindus in East Pakistan in 1947, a number nearly comparable to today, while in the meantime the total population has increased by more than 2.5 times.

The reverse flow arising of decolonization

The effects, in terms of displacement of populations, of the withdrawal of Great Britain from its Asian colonies extended to the Indian community in Burma. Indian emigration had begun with the progressive annexation of Burma by the British, starting in 1826 and completed sixty years later. At the turn of the century, there were already more than 560,000 British subjects of Indian origin in Burma. In 1941, four years after Burma had ceased to be a part of British India, and on the eve of the Japanese invasion, the country counted 1.1 million Indian residents. In the minds of the Burmese nationalist leaders, reflecting also the view of the local population, the Indian community was largely associated with the colonizer. A sentiment expressed by Aung San when, addressing the Indian community, in December 1946, he observed that in the past, the latter had not identified itself with national aspirations; quite on the contrary since they were even often on the side of the British imperialists (Aung San, 1968). In the meantime, Japanese

9. Government of West Bengal, *Refugee Rehabilitation Committee's Report*, Calcutta, pp. 1 and 50. Quoted by Kudaisya Gyanesh (1995), pp. 86 and 93.

10. The figure put forward by the Bangladesh Hindu-Buddhist-Christian Unity Council. Bangladesh Manobadhikar Samonnoy Parishad, *Bangladesh State of Human Rights—1992*, Dhaka, 1993, p. 96.

occupation had compelled some 500,000 Indians to flee Burma in sometimes dramatic conditions. In the spring of 1947, only one fourth of them had chosen to return to Burma (Pakem, 1992). Yet, there were still about 700,000 Indians in Burma and they counted for more than half the population of Rangoon when Independence came in January 1948. The Burmese government took a number of measures, such as national preference in public office or restrictions on remittances abroad, the effect of which was to complicate the existence of the Indian population, leading to departures. A situation worsened by the communist insurrection, which led thousands of Indians living in rural areas to flee to Rangoon to seek repatriation. Furthermore, the 1948 citizenship law eliminated the possibility of having a dual citizenship. An Indian settled in Burma who refused to acquire Burmese nationality had, in the eyes of the local authorities, a status similar to that of any other foreign national. Nehru's attitude, moreover, had been to encourage Indians who were long-standing expatriates to take the nationality of the country of their domicile and assimilate the interests of that country. The problem was that local authorities often showed little desire to grant Burmese nationality to applicants of Indian origin. Laws directed at the nationalization of lands resulted in the dispossession of a number of Indians whose their land was acquired by the Burmese government against ridiculous payment. Apart from some small Indian cultivators, this decision concerned mainly members of the Chettiar community who, in the course of time, had become landowners by way of their usurious activity. In fact, in Lower Burma, at the end of the 1930s, Indian moneylenders of the Chettiar caste had come into possession of nearly 3,000,000 acres of land; so that of the land which had been lost to the cultivators, about half was owned by Indians. Chettiars also had an interest in much of the land, which was nominally still owned by cultivators but was in fact mortgaged. "The Chettiars were less extortionate than the Burmese moneylenders; but the fact that they were aliens added greatly to the widespread sense of grievance which the agrarian situation produced."[11]

The military coup, which brought General Ne Win to power, in March 1962, led to a reinforcement of economic nationalism within the framework of "the Burmese way to socialism." Nationalization extended to the domestic trade in food, textiles and others good of daily necessities and to the banking and brokerage services, which did not fail to have repercussions on the Indian community. Indian banks were nationalized and it became even more difficult for small savers to transfer remittances to India. Deprived of means of subsistence—compensations for Indian assets were low or non-existent—, an increasing number of Indians made their way back, being able to take not more than a nominal amount of money with them. During his visit to India in February 1965, General Ne Win gave an assurance that "resident foreigners who could play a useful role in the new social order in Burma would be given facilities to live and work there as

11. Minute from Professor B. R. Pearn, Research Department, Foreign Office, July 10, 1953. FO 371 106862.

citizens should they desire."[12] Few Indian nationals took this remark at face value and invoking continuous discrimination against them from the Burmese authorities, approximately 250,000 returned to the country of their ancestors between 1963 and 1976. The Indian government chartered ships to repatriate them and, on the diplomatic level, requested the authoritarian regime in Rangoon to facilitate the granting of Burmese nationality to persons of Indian origin without much success. Those who remained behind, mostly stateless, were left to scrap a living in adverse circumstances.

In 1988, India, which supported the aspirations of the Burmese people for the restoration of democracy, witnessed in the state of Mizoram the arrival of refugees fleeing the military reprisal, which followed the September coup. In like manner, some candidates elected during the legislative elections of May 1990 who were challenged by the junta in power in Rangoon, sought refuge in India. Many more were those who had to cross the Indo-Myanmarese border as a result of the pacification campaign against ethnic minorities conducted by the State Law and Order Restoration Council (SLORC).[13] They have not been officially recognized as refugees by New Delhi, whose attitude towards the military rulers in Rangoon has since been driven more by security concerns indicating a sense of alarm over China's overtures to Rangoon. The other reason for toning down its criticism and engage into a functional cooperation was the need to tackle persistent problems (ethnic insurgencies, drug-trafficking, etc.) due to the porous border that India shares with Myanmar.

Another Indian community which came up against the reluctance of the country's new power-holders to accommodate populations which had been established under the patronage of the British colonial authorities were the "Indian Tamils". They had migrated in the course of the 19th century and during the first half of the 20th century to work on the plantations located in Ceylon's central highlands and in the midlands. Sri Lanka counted more than 800,000 Indians Tamils at Independence in February 1948, representing around 10 per cent of the total population of the island. Colombo, with the adoption of the Ceylon Citizenship Act of 1948 and the Indian and Pakistani Residents (Citizenship) Act of 1949, strove to limit their number by questioning the extent of their integration into local society. The Indian government, for its part, considered this community to be Ceylonese and could not regard as satisfactory any resolution of the problem which would not only make it more difficult for Indians to acquire Ceylon citizenship but would also enable the Ceylon Government to discriminate against citizens of Indian origin. This was expressed by Nehru in the following terms: "There are the other people who have been in countries like Ceylon for 30, 40, 50 or 60 years, whatever the period may be—, whom we do not consider our nationals. They have settled down in these countries and many of them have been born there. As far as we are concerned, strictly, legally and constitutionally, it is none of our problem. There are not our nationals. But we do not take up that particular attitude, although it is the correct attitude.

12. L.J.D. Wakely, British Embassy in Rangoon to M. Stewart, 10 January 1966. FO 371 186950.

13. Lintner (1994). See also: *The Pioneer*, 7 August 1995.

For, we are interested in their welfare and we are interested in finding a solution because there is a history behind this."[14] Their fate was the subject of negotiations between the Indian and Ceylonese authorities. By virtue of an agreement signed in 1954, some 130,000 Indian Tamils were to be repatriated to India in the course of the following decade, while roughly 135,000 were to receive, during the same time period, Ceylonese nationality. In October 1964, one was still far from reaching that target and the Prime Ministers of the two countries, Lal Bahadur Shastri and Ms Sirimavo Bandaranaike, met to determine the fate of 975,000 Indian Tamils who had become stateless persons. India accepted to accommodate and naturalize 525,000 persons over a period of fifteen years, while Colombo committed itself to absorb 300,000—with their natural increase in both cases—, leaving the citizenship of 150,000 individuals still unsettled. According to a new agreement between Indira Gandhi and Sirimavo Bandaranaike, in January 1974, the two countries decided to each naturalize 75,000 stateless persons and to accelerate the implementation of the 1964 agreement, which had been made difficult not only by procedural questions, but also by the fact that human reason sometimes defies arithmetical rigor, for there were no more than 506,000 Indian Tamils, out of a quota of 600,000, to request repatriation, to whom was added a natural increase of approximately 170,000 persons. The deadline of 1981 for the implementation of the new repatriation agreement had been significantly exceeded when the government in Colombo took the decision, in the autumn of 1988, to naturalize 94,000 Indian Tamils who were not applicants for return, in addition to the 375,000 persons as earlier foreseen. At the conclusion of what was "the largest organized labour migration in the 20th century," the great majority of those to be repatriated settled in Tamil Nadu, where the insufficiency of the accompanying government measures led to much disillusionment, some of them had not other choice than to become bonded labourers.[15]

Foreign communities in Indian exile

The case of the Chakma refugees from Bangladesh illustrates the temptation for an ethnically and religiously dominant community, faced with an increased scarcity of resources as a consequence of a demographic explosion, to appropriate the coercive powers of state in order to establish itself on the lands of a minority not availing of the same access to power. The Chakmas, who are Buddhists, constituted the main ethnic group in the Chittagong Hill Tracts (CHT), a hilly region comprising roughly 10 per cent of the total area of Bangladesh and situated to the east of the port of Chittagong and bordering on the Indian states of Tripura and Mizoram. This region had benefited from extensive political autonomy during the period of British colonial administration. In 1947, although only 3 per cent of the

14. Intervention in the Lok Sabha, 2 September 1957, Jawaharlal Nehru 1983 (1961).
15. Suryanarayan (1991). See also, Suryanarayan (1986).

population was Muslim, the CHT were incorporated into East Pakistan, against the wishes of the Chakmas, who would have preferred to belong to the Indian Union. The resentment of the tribal population increased with the encroachment upon their administrative autonomy and the adoption of development projects which above all had the effect of strengthening the supervision and presence, both civil and military, of the Bengalis, notably in the form of a voluntarist policy of implantation of people from the alluvial plains. The first Chakmas to choose to immigrate to India did so less in the name of grievances of a political nature, than as victims of the construction of a hydroelectric complex on the Karnaphuli river. The filling of the Kaptai dam, in 1963, submerged approximately forty per cent of the cultivable lands of the district and affected 18,000 tribal peasant families. The inability of the government of East Pakistan to offer comparable lands to all the affected families led some 40,000 tribals to seek refuge in India, where the administration of the North East Frontier Agency (NEFA, today Arunachal Pradesh) organized a resettlement programme for Chakmas and Hajongs in five different places.

The relations between the tribal population of the CHT and the government of East Pakistan, then with the Bangladeshi government, continued to deteriorate, as a corollary to the growth of the Bengali population, which increased from nine per cent of the total population of the CHT in 1951, to almost fifty per cent in the mid-nineties. The demands of the Chakmas, politically articulated from 1972 by the Parbattya Chattagram Jana Sanghati Samity (PCJSS), were centred around the return to the broad political and administrative autonomy from which the CHT had benefited prior to Partition in 1947, and the eviction of Bengalis settled on tribal lands. In 1975, the resentment of the Chakmas also assumed the form of an armed rebellion with the creation of the Shanti Bahini, the members of which received support from Indian intelligence agencies. A major refugee movement took place in 1981 following reprisal attacks by the Bangladesh military. The matter was then bilaterally resolved at a flag meeting between the Indian and Bangladeshi commanders of border security forces and the refugees were turned back. Again in 1984, Chakmas who went to Mizoram were sent back following another flag meeting (Abrar, 1999).

It is only in 1986 that the Indian authorities desisted from deporting the refugees when more than 50,000 Chakmas from the three hill districts of Bandarban, Rangamati and Khagrachari, fearing reprisals on tribal villages carried out by the Bangladeshi armed forces, found refuge in six camps located in the southern part of the Indian state of Tripura. Between late 1992 and 1996, thirteen formal meetings were held between the government in Dhaka and the PCJSS, with a view to achieving a lasting political settlement of the dispute. India did its utmost to convince the refugees to return to their homes, expecting in return that Bangladesh would expel the separatist rebels from north-east India sheltered on its territory. For instance, New Delhi and Dhaka decided to start a repatriation process in June 1993, which was postponed due to the refugees' refusal to budge and the pressure of human rights organizations. Some initial repatriations began on 15 February 1994 following the announcement of a sixteen-point rehabilitation package and, in

the following six months, about 8,000 persons returned to the CHT. The repatriation initiatives came to a halt due to the political situation prevailing in the last two years of the Khaleda Zia government and, as a result of the opposition of Chakma leaders, who deemed the return of refugees to be premature as long as Dhaka had not given sufficient assurances regarding their security and the restitution of their property.

The coming to power of the Awami League led to a distinct improvement in Indo-Bangladeshi relations favouring the settlement of outstanding issues. An initial agreement was reached between the Bangladeshi government and the Chakma leaders in March 1997 foreseeing the repatriation of a first batch of 7,000 refugees after much progress on the demands put forward had been made and some financial assistance had been offered to refugee families for the purpose of their resettlement. By the middle of 1998 almost all of the hill refugees returned back home following a peace accord between the government of Bangladesh and the PCJSS on December 2, 1997. This accord may not be the final word since it was termed a "sell out", for opposite reasons, by the mainstream opposition political parties as well by a section of the tribal community.

Historically, the first foreign community to have found asylum in India, in view of what was deemed a deliberately hostile policy in its regard, and unconnected with Partition, was Tibetan. The greater part of the refugees to leave Tibet did so between 1959 and 1963, following the Chinese communist suppression of the uprising on 10 March 1959, which led to the exile in India of the Dalai Lama and several thousand of his compatriots. In the course of a perilous journey, they entered for the most part Bhutan, Sikkim and above all the NEFA. Refugee camps came into existence along the entire perimeter of the Himalayan chain, from eastern Arunachal Pradesh to Ladakh. In 1967, when the migratory flow had nearly ceased, the number of Tibetan refugees in India, in Sikkim and in Bhutan, was of the order of 55,000 persons (and approximately 7,000 in Nepal).[16] Most of the thirty-five Tibetan camps in India were established between 1960 and 1965.

The Dalai Lama, after passing through Mussoorie (Uttar Pradesh), established on 30 April 1960 in Dharamsala (Himachal Pradesh) his "government-in-exile", which India, holding Tibet to be a *de jure* Chinese province, has always refused to officially recognize. After having been accommodated in two transit camps—the first in Buxa Duar near the border between Bhutan and the Indian state of West Bengal, where members of the clergy met again, and the second in Missamari, near Tezpur in Assam—, some refugees were utilized in the construction of roads in the foothills of the Himalayas, while others were employed in handicraft centres producing above all carpets and woollen garments. A few were engaged in the Indo-Tibetan Border Police, charged with participating in the surveillance of India's northern border. Notwithstanding difficulties in acclimatization, others, finally, were directed to agricultural camps located in the plains.

16. These figures are taken from the annual report of the UNHCR for 1969. Quoted by Grunfeld (1987), p. 187. Concerning the settling of Tibetan refugees in India, see for instance the autobiography of the Dalai Lama (1991), pp. 158-212.

There are today five such camps in Karnataka and one each in Maharashtra, Orissa and Madhya Pradesh. The government of Mysore State (today Karnataka) was the first to respond favourably to the invitation extended by Nehru to receive Tibetan refugees. The first to arrive settled, in early 1960, in Bylakuppe in a camp intended to accommodate 3,000 refugees. When the problem regarding the demarcation of the Sino-Indian border arose, which was to result in an armed conflict in the autumn of 1962, the accommodation of a part of the Tibetan refugees in south India had the advantage of distancing them from the frontier regions of the Tibetan plateau, which did not prevent Beijing from accusing India of employing rebel Tibetan refugees on its territory to conduct subversive activities against China.

In 1971, China even declared at the United Nations that India could be tempted to use the presence of Tibetan refugees to justify an intervention in Tibet, in the same manner as India had used the presence of refugees from East Pakistan as a pretext for military intervention there. This suspicion was unfounded insofar as India would soon undertake a normalization of its relations with China, facilitated by the fact that New Delhi renounced assistance offered by the UNHCR to Tibetan refugees who, according to Beijing, had in fact been forced into exile under pressure from the Indian government.[17]

While the Indian government was careful that the Tibetan refugees did not engage in political activities on Indian soil, it did not seek to encourage the assimilation of this population and interfered very little in the functioning of the colonies. It thus responded to the wish of the Tibetan authorities in exile, for whom it is important that the Tibetan community, supposed one day to be called upon to return to Tibet, preserve its cultural identity and way of life, even should that mean living in social autarky. In 1995, there were about 108,000 Tibetan refugees in India, representing more than three-quarters of all exiled Tibetans.

During the 1980s, the question of the repatriation of Indian Tamils gave precedence to the radical turn taken in the ethnic conflict opposing Sri Lankan Tamils, settled for several centuries in the north and the east of the island, to the government in Colombo. This evolution was in particular expressed by the arrival on the coasts of Tamil Nadu of several waves of refugees, the number of whom corresponded to the vicissitudes of the "war of Eelam." The anti-Tamil pogroms of July 1983, which were at the origin of this radicalization, led 30,000 persons or so to cross the Palk Strait between July and December 1983. It was then above all a matter of Tamils from the highlands or residing in Colombo who were the first to be affected by the rioting. The latter, however, still had sufficient resources or places where they could be accommodated, so as to not have to live in camps. Things would soon take a different turn when the skirmishes between the militant Tamils and the government forces in the northern part of the island increased in intensity, provoking a growing exodus of Tamils, for the greater

17. See for instance the statement made by the Chinese representative, Wang Jun-sheng, before the UN Economic and Social Council , 27 July 1972, in Jain (ed.), (1981), pp. 424-425.

part from zones affected by combat. The poorest of them found refuge in camps in Tamil Nadu. Between July 1983 and 29 July 1987, the date of the Indo-Sri Lankan accord intended to guarantee the rights of the Tamil minority—and which foresaw the sending of an Indian Peace-Keeping Force (IPKF) charged with creating conditions favourable to its implementation—, 134,000 refugees were officially received in India. As a result of the accord, nearly 42,000 Tamils refugees returned to Sri Lanka between 1987 and 1990.

Following the rather inglorious withdrawal of the last soldiers of the IPKF, in March 1990, the second "war of Eelam" began in June, when the Liberation Tigers of Tamil Eelam (LTTE) once again took up arms against the Sri Lankan army. This triggered off a new exodus of Tamils, which, in 1992, brought to 230,000 the number of applicants for asylum. Separate camps strongly guarded sheltered refugees suspected to have links with militant organizations. While the reception of refugees was initially considered as a matter of community solidarity by the local political class, the assassination carried out in Chennai by the LTTE, in June 1990, of the leader of another Tamil militant group, the Eelam People's Revolutionary Liberation Front (EPRLF), Padmanabha, followed by the assassination of Rajiv Gandhi in Sriperumbudur on May 21, 1991, greatly contributed to a questioning of the risks ensuing of the presence of a large number of refugees in Tamil Nadu.[18] The fact that the refugee camps could be used by Tamil militant organizations as recruitment places and as rear bases serving as sources of provisions and medicine became an embarrassment. The necessity to provision an armed struggle could also lead the refugees to involve themselves in the trafficking of, for example, drugs and weapons.

From that time, the repatriation of these refugees became a priority. An agreement to this effect was reached between New Delhi and Colombo in early 1992. Between 20 January and 15 May 1992, more than 23,000 refugees returned to Sri Lanka before the process was interrupted in the face of accusations of forced repatriation. Finally, in order to remove all ambiguity, the Indian government, despite its preference for dealing with refugee issues within its territorial limits unilaterally, allowed the UNHCR, in July 1992, to ensure that those returning did so of their free consent.

Repatriations are dependent on the climate of insecurity prevailing on the island as a result of military operations and the difficulties in supplying essential products, in particular after the resumption of hostilities in April 1995, subsequent to the breaking off of peace talks with the Sri Lankan government by the LTTE a few months earlier. For all that, the reconquest of the Jaffna peninsula by government troops in December 1995 did not give rise to a renewed large-scale flow to neighbouring Tamil Nadu. New Delhi,

18. In the aftermath of the assassination of Rajiv Gandhi, several Sri Lankan refugees were detained by local authorities for violation of camps curfew, under section 3 of the 1946 Foreigners Act. The courts directed that these refugees be moved to the special camps that had been set up to accommodate those refugees that were of higher security risk. Until January 1995, there were 1,629 Sri Lankan refugees in seven special camps in Tamil Nadu. After requests from human rights organizations, 808 refugees were moved back to normal camps (Talwar 1996).

fearing the infiltration of militants from the LTTE, reinforced its patrols in its territorial waters and found some comfort in the re-opening of the UNHCR relief centres in Sri Lanka, the ability of which to compensate for the immediate causes of departure had been evidenced by offering security and means of subsistence. Nevertheless, after the conflict shifted from the Jaffna peninsula to the Vanni region in mid-1996, the deteriorating security situation in the latter led to new refugee flight apart from large internal population displacement. As of June 1998, more than 13,000 refugees had arrived in southern India (UNHCR 1998). Continued hostilities in Sri Lanka have not permitted the repatriation of an estimated 73,000 Sri Lankan Tamil refugees living in the 115 camps located in various districts of Tamil Nadu, to whom must be added about 28,000 unregistered refugees.[19]

To this list of political refugees must be added few thousands Bhutanese of Nepalese origin fleeing persecution by the dominant ethnic group—the Buddhist Dropkas—who found asylum in northern West Bengal, Sikkim and in Assam, where other communities of the same origin reside. There are also among the ranks of refugees in India some 16,000 Afghans, the first of whom arrived in India after the emergence of a communist regime in Kabul, followed more recently by those who run away from the decaying political situation in Afghanistan after the Soviet-backed government fell. Some Iranians, Iraqis, Sudanese and Somalis have also been seeking protection from persecution, ethnic conflict and war and have been recognized as mandate refugees by the UNHCR.

Finally, mention must be made of the internally displaced populations. Tens of thousands of Kashmiri Pandits have fled the Valley, apprehensive as to their security subsequent to the revival of separatist activism directed against the Centre by militant Muslim groups. Hindu families who returned to the valley often found that their dwellings had been destroyed and their lands encroached upon. Assam, a land of immigration, gave birth to several "sons of the soil" movements and the first to be targeted were Muslims who had come from the south, at times forced to shelter themselves from acts of violence by taking refuge in camps. This could prove to be an illusory protection, as was shown in the summer of 1994, when Bodo militants from the Bodo Security Force, a separatist movement of the main tribe in the Brahmaputra valley, attacked the security camps. In neighbouring Tripura, attacks directed against members of the Bengali community from East Pakistan, and then from Bangladesh, increased during the winter of 1996-1997, obliging them to take refuge, sometimes in vain, in temporary camps. Responsible for these actions were activists from local tribes who violently reacted to an evolution of the ethnic composition of the state which has relegated them to a minority status, numbering scarcely one third of the population of Tripura. Politically under-represented, they see themselves being gradually dispossessed of their ancestral lands. Ethnic clashes in the North-East are a common recurrence and, for that reason, also is displacement of populations. For instance, 40,000 Reangs living in Mizoram, who have unsuccessfully been demanding an autonomous district

19. *The Hindu*, 21 September 1999.

council, had to take refuge in camps in Kanchanpur sub-division in north Tripura. The government in Agartala has urged New Delhi to ensure repatriation of those refugees as the Mizoram government was reluctant to take them back.[20]

Use of refugees

The reasons that have led the government of India to accommodate refugees have not always been purely humanitarian in nature. The reception of refugees on several occasions went hand in hand with the pursuit of political objectives. Mention was earlier made of India's use of the massive presence of refugees from East Bengal on its territory as justification for direct intervention in the Bangladesh war of liberation. Where there was a collusion of interests of displaced populations and of the Indian government, the latter offered active support to armed groups representing the aspirations of those populations. This was not only true as regards the Mukti Bahini, in 1971, but also the Shanti Bahini or the LTTE, before the latter organization turned its arms back on the IPKF. Should the collusion of interests of the political objectives of the Indian government and the aims of a refugee population cease to exist, the latter, whose integrity depends on the leniency of New Delhi, often becomes an obstacle in the rapprochement with the nation responsible for persecution, thus justifying the return to the native country. As concerns the Tibetan exiles, while New Delhi has been very wary of provoking China by militarily supporting a guerrilla movement composed of refugees, the presence on Indian soil of the exile Tibetan government, taking into account the ensuing nuisance value vis-à-vis the communist regime, can be a diplomatic asset in the Sino-Indian bilateral negotiations.

If the refugee flows can play a role in international relations, they can also become issues in internal politics.[21] Faced with the massive inflow of refugees from East Bengal during the year 1971, one of the Indian government's fears was to see the situation get bogged down and the hopes of returning vanish, which would not have failed to exacerbate even more the already existing tensions in the north-east India between autochthonous populations and people coming from East Pakistan. The Tibetan community came to represent an economic weight, notably through the aid of international non-governmental organizations, which irritated the local

20. *The Hindu*, 5 January 1999.
21. This is even truer of economic migration. A document by the Border Security Forces (BSF) estimated in 1995, the number of Bangladeshis illegally settled in India at between 8 and 10 million (*The Times of India*, 19 December 1996). The number of Nepalese working in India probably exceeds five million persons. However, in the latter case, it is a matter of a legal immigration, falling within the framework of the 1950 Indo-Nepalese peace and friendship treaty which included the free movement of individuals and the right to work in India (or, for Indians, in Nepal). Because of these massive influxes, the distinction between political refugees and economic migrants has become blurred in the public perception.

political elite, as for example in Himalayan regions which had in the past been confronted with Tibetan cultural chauvinism.[22] Chakma refugees who had been settled for three decades in Arunachal Pradesh were exposed to the hostility both of the local authorities and of a student organization, the All Arunachal Pradesh Students' Union. Since 1980, the Chakmas saw themselves denied access to employment in the local public administration. Other measures were taken in an attempt to economically stifle them by retracting their ration cards, in 1991, and forbidding them, in 1993, to engage in commercial activities. The state assembly even went so far as to vote the deportation of the Chakma refugees from the state and to demand their repatriation in Bangladesh. Acts of intimidation drove some of them to seek refuge, without success, in Assam. This situation obliged the Supreme Court, in January 1996, to pass judgement confirming the right of the Chakmas settled in India prior to 25 March 1971 to obtain Indian nationality, while their children born on Indian soil acquired it automatically, and ordered the government in Itanagar to register requests for naturalization.

Apart from local opposition to the refugees who had been able to make a way for themselves, the official Indian position evolved over the course of time in a restrictive sense. Soon after independence, the accommodation of Hindu and Sikh populations coming from the two flanks of Pakistan was less disputed to the extent that the exodus seemed to condemn the excesses to which a religious state inevitably led, in distinction to the Indian secular model, with its concern for the equal rights of persons of all religions. In the late 1950s, the Tibetan refugees personified the perfidy of communist China, of which the Indians also felt themselves to be victims in the matter of the demarcation of borders, which led to war in 1962. On the other hand, it was almost grudgingly that India received members of the Indian community from Burma and Sri Lanka, having preferred that they continue to live in dignity in the country of their domicile. As of the beginning of the 1970s, refugees were considered more as a potential destabilizing factor, whether in sharpening ethnic tensions, competing with local populations for access to essential products or to public infrastructures, or indeed by representing a menace hanging over the maintenance of the law and order. Since then, government strategy, once the inter-linked strategic objectives were met, was above all to strive for the return of the refugees to their native country. The tendency is henceforth to seek to deal diplomatically with the other countries concerning issues which could lead to the exodus to India of a part of their populations.

22. Stobdan (1991), pp. 696-697.

13

Underprivileged Minorities in India: Dalits and Tribals. A Cartographic Approach

Luc de GOLBÉRY and Anne CHAPPUIS

Preamble

Of the two largest groups of underprivileged minorities in India, the Dalits (ex-Untouchables, present Scheduled Castes) are well known, while tribals are almost unheard of outside the country. While Dalits form an inextricable element of Indian society and are both socially and geographically present everywhere, the tribals live on the margins of civilization. The two groups probably share a common origin, and both are branded by their low status relative to the dominant Hindu society. They have received special attention from the Indian authorities, in line with the Gandhian ideal, and benefit from most governmental efforts to combat poverty. At quite an early stage, their development became politicized, as a Dalit or tribal vote during elections carries the same weight as that of any other Indian citizen. The fiftieth anniversary of Indian Independence, and of the death of Gandhi, seems a good time to assess the state of development of these "poorest of the poor."

Methodology and techniques

The documents that follow present possibly the first ever exploration of the results of the Census of 1991, with the help of figures and figures, forming an outline for a mini-atlas. For the first time, the data of the Census of India are available on diskette; nevertheless, the quality of the information files presented several problems, which necessitated a long and difficult

process of verification. Moreover it was not possible to conduct a census in some areas of India, or only partially so, due to security difficulties and/or conflict. In addition, quite a few regions have undergone a revision of administrative boundaries, so that the data do not correspond with those of earlier censuses. We have tried to minimize these shortcomings by various means, so as to provide at least a glimpse of the main trends, even at the cost of some imprecision.

Although the statistical material available is extensive, it does not as yet match the wealth of Western censuses, and this often forced us to approach our topics indirectly. On the other hand, the cumbrous nature of some methods of treatment used has made it impossible to analyse all the available information within the framework of the present article. We have therefore selected those results which seemed most interesting and most effectively underlined the basic issues concerning our study, while complementing, as far as possible, already published information. This consideration has led us, for example, to analyse rural rather than urban data—a choice that is more than justified by the fact that 74.3 per cent of all Indians, 81.3 per cent of Scheduled Castes and 92.6 per cent of Scheduled Tribes live in rural areas—some of the highest rates in the world, especially for such a densely-populated country. This exercise is less a purely academic one than it might seem, in view of the fact that the Indian authorities in charge of development for the minorities seriously lack the means and methods of investigation to undertake even a basic survey of existing conditions. The treatments utilized here also aim to make the best use, at as little a cost as possible, of the only source of information that is available for the whole (or almost the whole) of India, the population census. The reader will notice that it has not been possible to employ a uniform data scale for the comparison of figures, since the difference between the populations of the two groups varies too much to allow effective common graphic representation. In some cases, we have retained an older mode of calculation that is less precise, but the only way to enable comparison with earlier census figures. We were also unable to reproduce all the figures and analysis documents utilized by us, which would have allowed the reader to check the findings presented and make an individual analysis. The large-scale tables would have taken up too much space and were too difficult to print. We hope the figures will be sufficient.

Topics and figures

The documents presented here attempt to investigate, from the viewpoint of spatial distribution, a few phenomena which seem to us to be good indicators of the present situation of the underprivileged minorities. While we have limited our investigations to rural populations, which are the most representative of the Indian population as a whole, and the least studied, we are aware that the urban side of the situation would provide an important complement to the study.

The rural population of India in 1991, and changes in it since 1961 (Figures 13.1 to 13.3), forms a kind of introduction, since it provides the framework for most of the "scheduled populations" and will serve as a basis for comparison. Then follows the spatial distribution of the two minorities, in absolute figures and as a proportion of the total population (Figures 13.4 to 13.7). Their demographic growth is explored through the increase in their numbers from 1961 to 1991 (Figures 13.8 and 13.9). Literacy rates, viewed in relation to the sex ratio of the literate population, (Figures 13.10 to 13.12) give a measure of the effectiveness of Indian education policy. Figures 13.13 to 13.15 introduce a new category of data in the Indian census: children below 7 years of age. Figures 13.16a and 13.16b together analyse changes in the sex ratio of the rural population on a state-by-state basis, from 1901 to 1991, while Figure 13.17 attempts to construct a general typology of sex ratios, based on a multivariate visual matrix analysis. Lastly Figures 13.18 to 13.20 present the results of a detailed matrix analysis of 5 groups of occupational categories: 1) cultivators + animal husbandry + forestry; 2) agricultural labourers; 3) craftsmen + construction workers; 4) industrial workers; 5) services.

Introduction

In 1991 Scheduled Caste and Scheduled Tribe communities numbered 138 and 68 million individuals, respectively, which is almost one quarter of the 839 million inhabitants of the Indian Union (16.5 per cent and 8.1 per cent, totalling 24.6 per cent).

Dalits and tribals probably share a common origin, dating back to the first inhabitants of the sub-continent. Under pressure from Indo-European invaders coming from the north-west, in order to avoid extinction (probably by assimilation rather than extermination, since the Hindus have demonstrated a far higher level of tolerance than Western societies) indigenous populations probably withdrew gradually to more inaccessible regions: dense forests, hills, etc. A frequent occurrence, especially in Asia. Their descendants are the tribals who are still to be found in forested and mountainous regions. One hypothesis concerning Dalit origins is that they were fractions of indigenous population that were gradually integrated into Hindu village communities and consigned to the lowest rank in the socio-religious hierarchy of the caste system—the outcastes. The figures showing the distribution of the two groups (13.4 to 13.7) confirm this line of reasoning, indicating a complementary character of their respective spatial distribution.

While the Dalits are well-known in the West for their low social and economic status, little is known about the tribal groups, although they are no less interesting than other tribal societies studied by ethnologists elsewhere in the world (Herrenschmidt, 1974). Over the last thirty years, their situation has deteriorated rapidly, and they now have the dubious distinction of being numbered amongst those traditional societies in danger of cultural

extinction. Their refuge on the margins of the more fertile lands first occupied by the Hindu civilization said to be of Indo-European origin, and their space-consuming farming techniques, akin to those of the Neolithic, make them vulnerable to the pressures generated in an India which is in the midst of demographic transition. Ill-prepared to take advantage of the legal measures that are supposed to provide them assistance and protection, they helplessly watch as the forests and lands that are the core of their culture and the basis of their economic system are taken away from them (by massive deforestation, construction of big dams, etc.). Their standard of living has declined drastically and in some areas is even lower than that of the Dalits. This deterioration is exacerbated by a progressive erosion of their culture and traditional life-styles that used to maintain community solidarity.

Figures 13.1 and 13.2: distribution of rural population

The rural population of India consists of 623 million individuals, at an average density of 219 inhabitants per square kilometre, the most densely-populated regions being the ancient centres of Indian civilization. The first of these is the Indo-Gangetic plain in the north, with 270 million inhabitants, 220 of whom live in rural areas, and with an overall average density of 513 inhabitants per square kilometre (450 in rural areas). The oldest nucleus of population can be found on the borders of Bihar and Uttar Pradesh, between Patna and Varanasi, the mythic and historical heart of Hindu civilization, where there are average rural densities ranging from 800 to as much as 1,100 inhabitants per square kilometre. 52 million rural and 7 million urban inhabitants live there in an area of 67,000 square kilometres. A more recent nucleus is centred in Calcutta, where a rural population of 41 million occupies an area of 51,000 square kilometres, with average rural densities of 930 inhabitants per square kilometre. The total population, including that of Calcutta, amounts to 59 million. Densities in the rest of the plain vary between the national average of 219 and 600 inhabitants per square kilometre, with a strong north-south gradient and a more gradual east-west one (towards Rajasthan and the Punjab). These high densities stop as soon as one moves away from the irrigated alluvial plain.

The coast of the peninsula forms an almost continuous belt of high population densities, including the eastern deltas, Kerala and central Tamil Nadu: 90 million inhabitants in all, with average rural densities of 440 inhabitants per square kilometre, reaching peaks of nearly 1,500 in Kerala, an important spice-coast since antiquity.

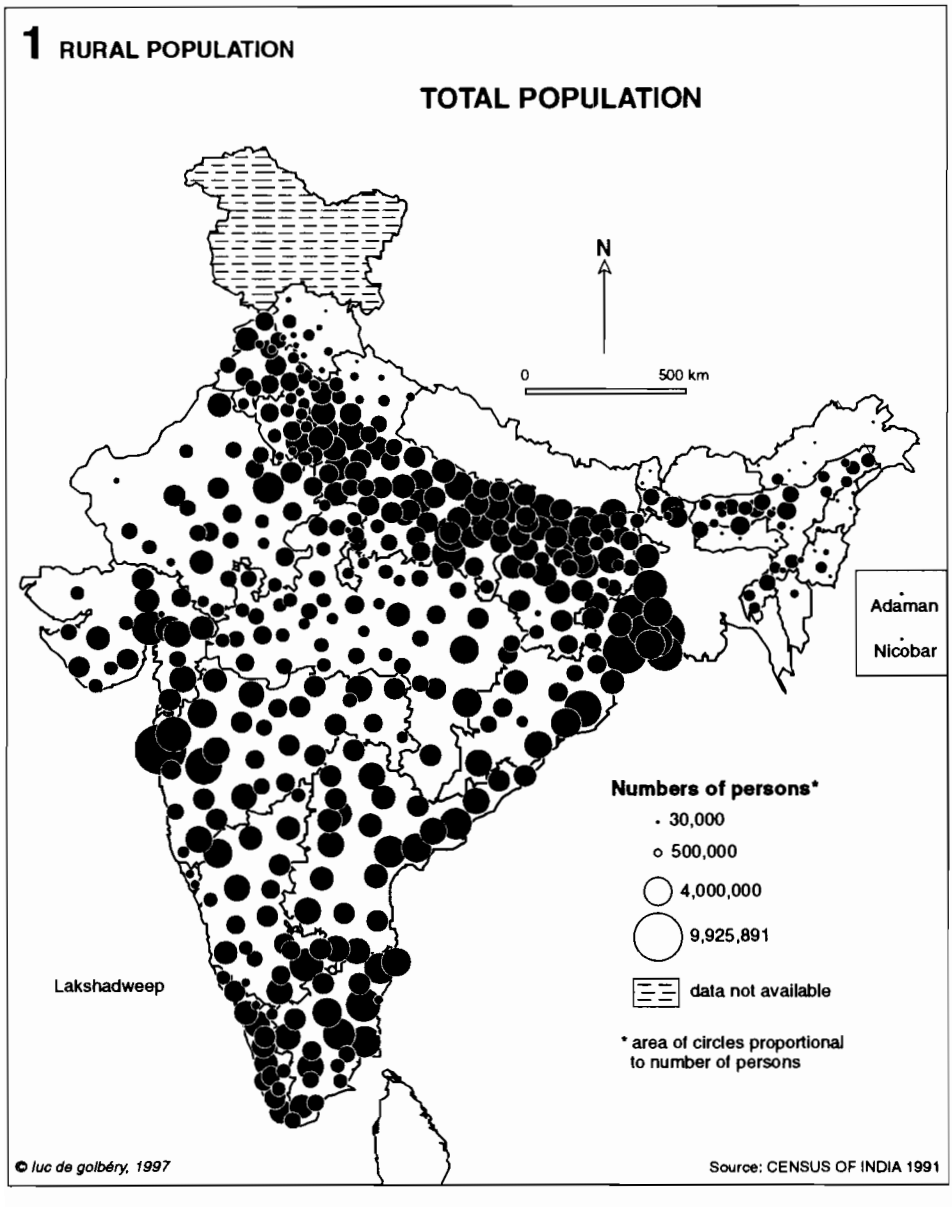


Figure 13.1: Rural population. Numbers

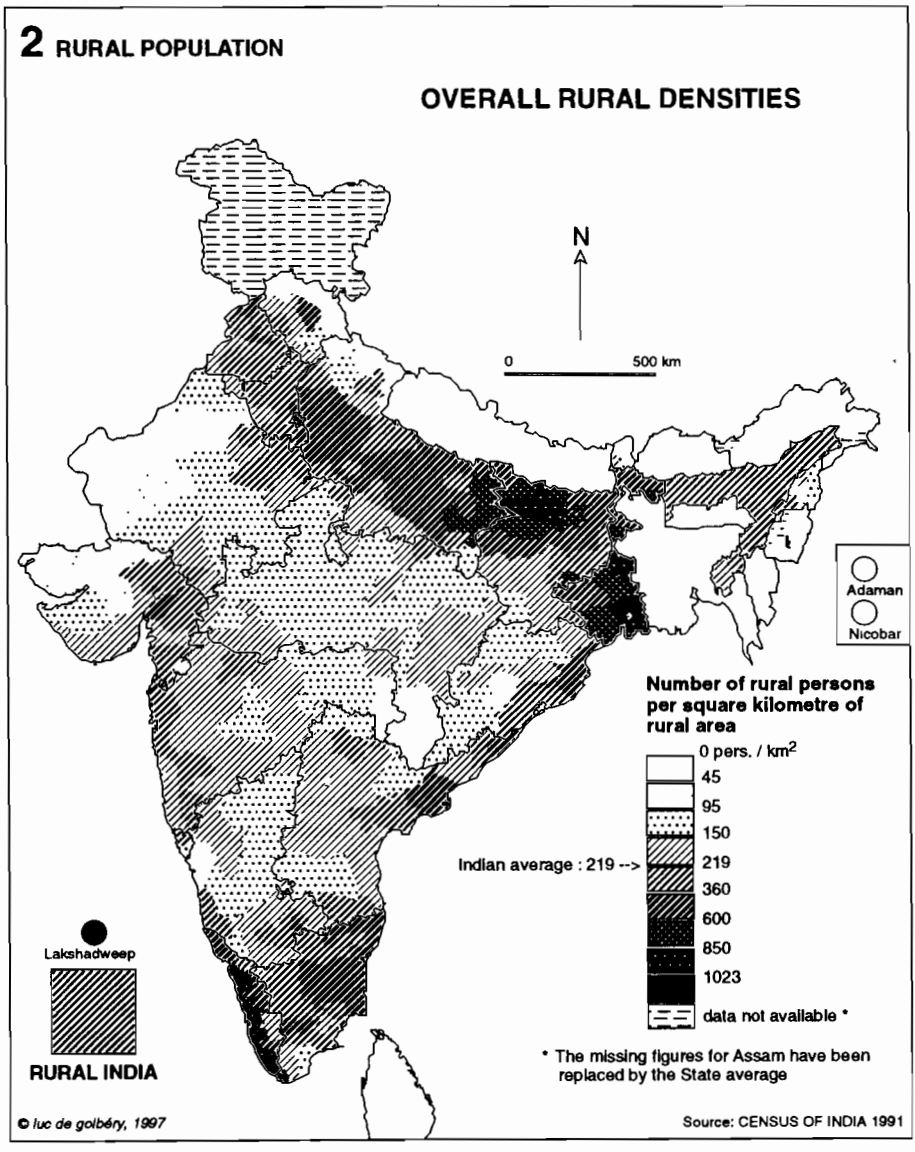


Figure 13.2: Rural population. Overall rural densities

The interior of the peninsula, in contrast, is much less densely-populated. Nevertheless, the undeniable effects of the huge water projects set up since Independence can be observed. The courses of big rivers, such as the Kaveri, the Krishna, the Godavari and, to a lesser extent, the Mahanadi, can easily be traced from the patches of higher densities (150 to 360) that mark them.

Elsewhere densities of less than 150 indicate either arid zones (the Thar desert in the north-west, Rayalaseema in the south) or forested areas inhabited by tribals. It may be noted that rural densities fall below 45 inhabitants per square kilometre in only 44 districts. The extensive tribal area in the north-east along the Brahmaputra is characterized by lower densities along the periphery, corresponding to mountainous areas, in contrast to the more densely-populated valley (an average of 250 inhabitants per square kilometre).

Migrants who have come more or less illegally from teeming Bangladesh are the reason for this, as well as the social tensions, which have blighted Assam for the last twenty years or so.

Two divergent phenomena stand out: the increase in population on the north-western and north-eastern frontiers; and the stabilization in the population of the high-density regions of the peninsula. Practically no coastal district shows more than the national average of 1.87 per cent annual increase over 30 years, and most of them lie below 1.5 per cent. This also applies to the two states of Tamil Nadu and Kerala that have the highest population densities in the south, levelling out at 1.34 per cent. The latter experienced a drop in growth, from 2.22 per cent, between 1961 and 1971, to 0.35 per cent, between 1981 and 1991. This result can be linked with the high education level of the population (Figures 13.10-13.12). The only southern regions with growth rates higher than the national average are those affected by recent agricultural irrigation programmes: the middle and upper Krishna and Godavari basins. The Kaveri valley, running from Karnataka through Tamil Nadu, seems to have reached a density limit. This makes it easier to understand the intensity of the conflicts between these two states over the use of Kaveri waters.

The observation regarding saturation levels also applies to some regions in the north, more precisely to the central Indo-Gangetic plain: 1.6 per cent increase between 1961 and 1991 in the Punjab, 1.14 per cent between 1981 and 1991; 1.87 per cent between 1961 and 1991 in Uttar Pradesh. The most notable exception is clearly Rajasthan, where the Thar desert has seen its population, admittedly small, increase by more than 3.5 per cent annually, due to the Rajasthan canal. In 30 years, the population of this region has grown from 6.3 to 14.9 million. In Bihar, increases are moderate (1.9 per cent) but still enough to cause concern in one of the poorest and most densely-populated states of India (almost 500 inhabitants per square kilometre). Birth control measures have had little impact on illiterate populations subject to quasi-feudal social structures. The tribal north-east has also experienced a sustained growth of 2.5 per cent per annum, the highest in the still sparsely-populated mountain areas (Nagaland 3.57 per cent).

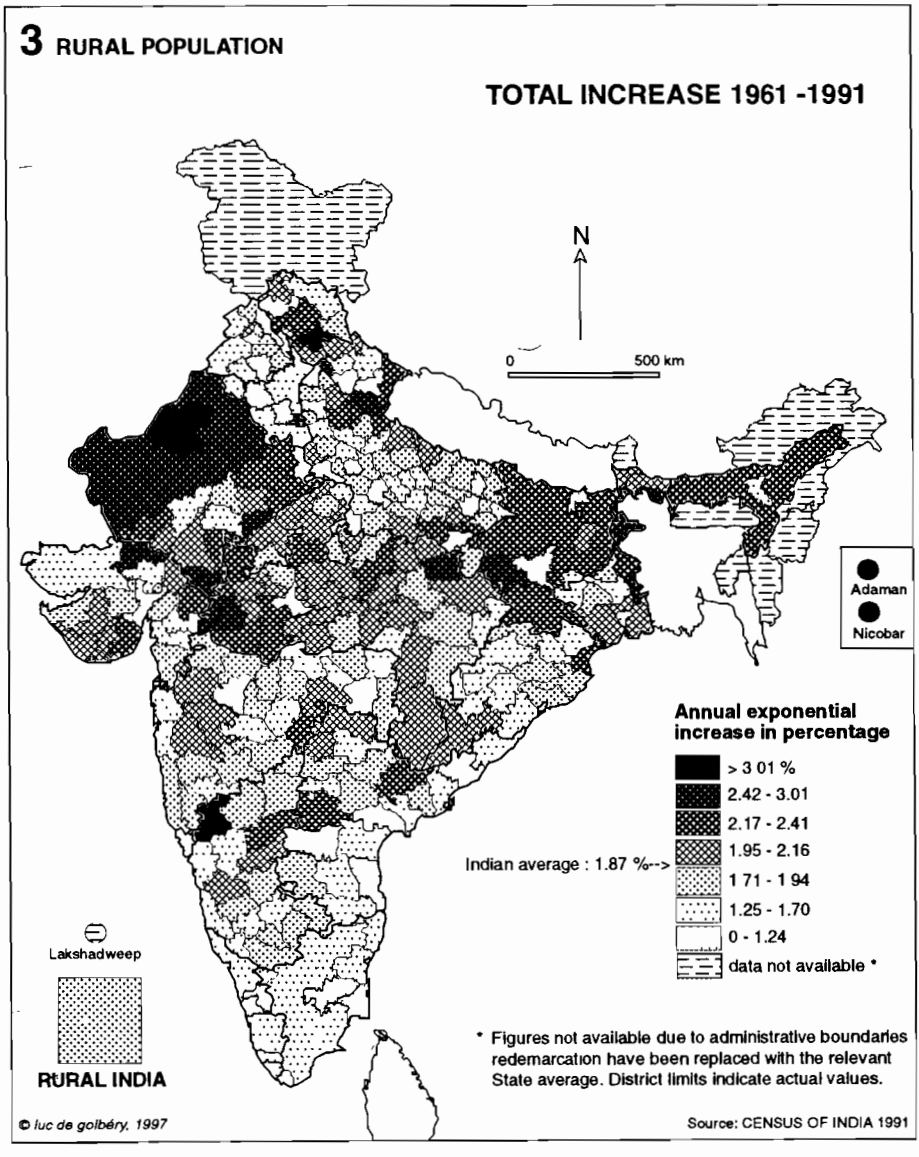


Figure 13.3: Increase in rural population 1961-1991

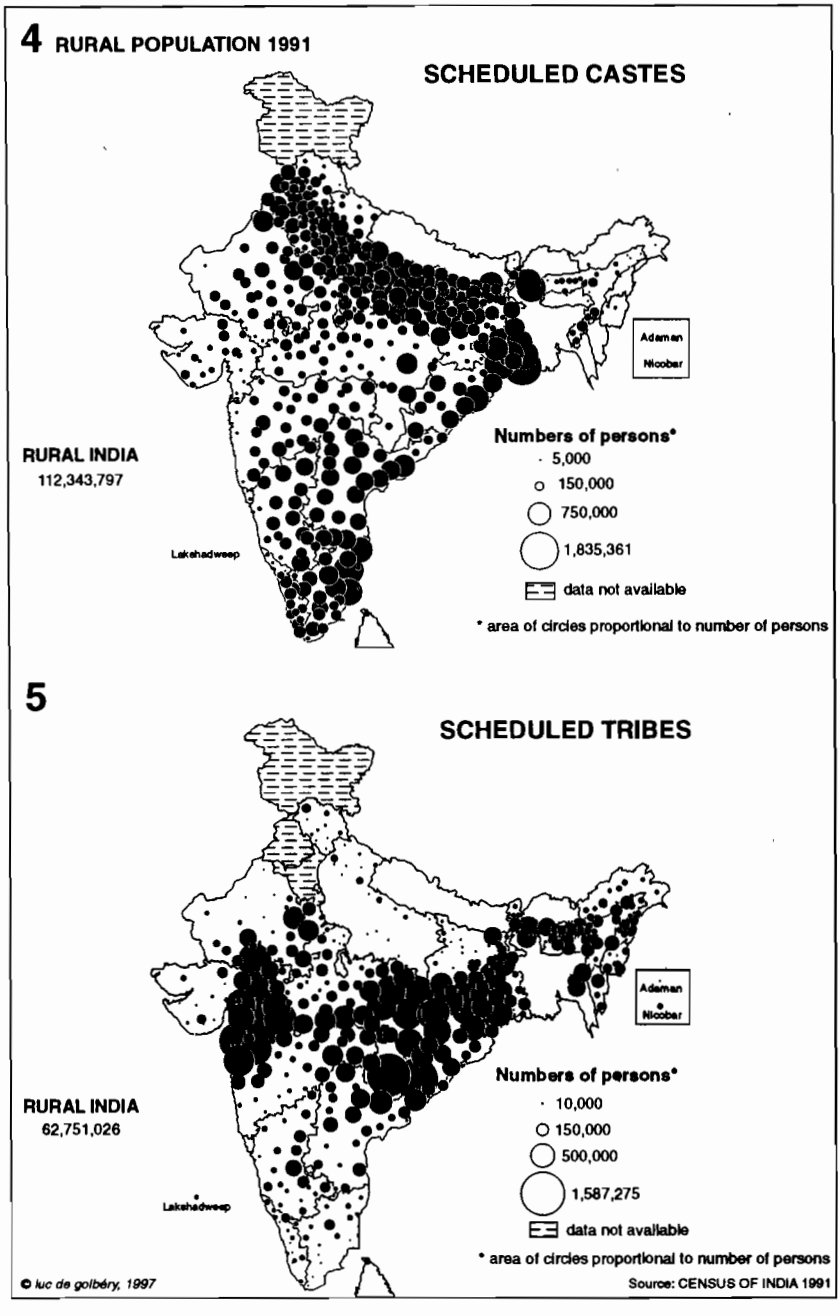
The spatial distribution of these two groups accurately reflects their situation relative to Hindu society. Dalits, who fulfil important social and economic functions,[1] are found everywhere except where Hindu society

1. Cf. Dumont (1966).

itself is absent, i.e. in the tribal areas! The tribals are confined to certain specific locations in a few areas, around which their concentration progressively lessens. A more or less significant tribal "background" exists elsewhere, but is practically absent from the Hindu "cow-belt" of the Indo-Gangetic plain. It may be noted that Scheduled Castes are numerous in delta regions and more generally in areas of intensive cultivation, where a large labour-force is required. The figures indicating density should be compared with those showing occupation (Figures 13.20-13.22).

There is a striking degree of complementarity in the spatial distribution of the two minorities: very few tribals in the Indo-Gangetic plain and the south-east of the peninsula, where a large number of Scheduled Castes are to be found. Conversely, the strong concentrations of tribals in the north-west of the peninsula (borders of Maharashtra and Gujarat), Orissa and Madhya Pradesh, correspond to pockets empty of Scheduled Castes. Hence the appeal of a hypothesis which argues for the tribal origin of Scheduled Castes who were slowly integrated into Hindu society. But are they the only ones? Perhaps the extraordinary complexities of local caste systems reflect ancient tribal roots? Only a more detailed study at subregional and village levels would throw enough light to confirm or disprove this hypothesis.

The growth rate over 30 years of these two minorities is significantly higher than that of the rest of the rural population: 2.29 per cent and 2.84 per cent, respectively, as opposed to 1.94 per cent for the rural population as a whole, and 1.76 per cent if we consider only the non-minority population. The figures—which were difficult to compile because of the many changes in administrative boundaries which have taken place in the course of the period under consideration, and necessitated the estimation of figures in order to avoid too many statistical gaps—reveal interesting trends. Firstly, they provide overall images that are very different from the growth of the population as a whole (Figure 13.3): while this increases mostly in the north, the main growth among Scheduled Castes is in the centre of the country, on the borders of Maharashtra and Madhya Pradesh. It extends west towards the Mumbai region, south towards Bangalore, and follows the Krishna and Godavari valleys eastwards. Clearly, the greatest increase in the population of Scheduled Castes corresponds to areas where, formerly, they were less common. It also corresponds to agricultural water projects; so it is logical for it to appear also in western Rajasthan. On the other hand, areas with a high density of Scheduled Castes (Figure 13.6), such as Uttar Pradesh and Tamil Nadu, show little increase.



Figures 13.4 and 13.5: Rural populations—Dalits and Tribals

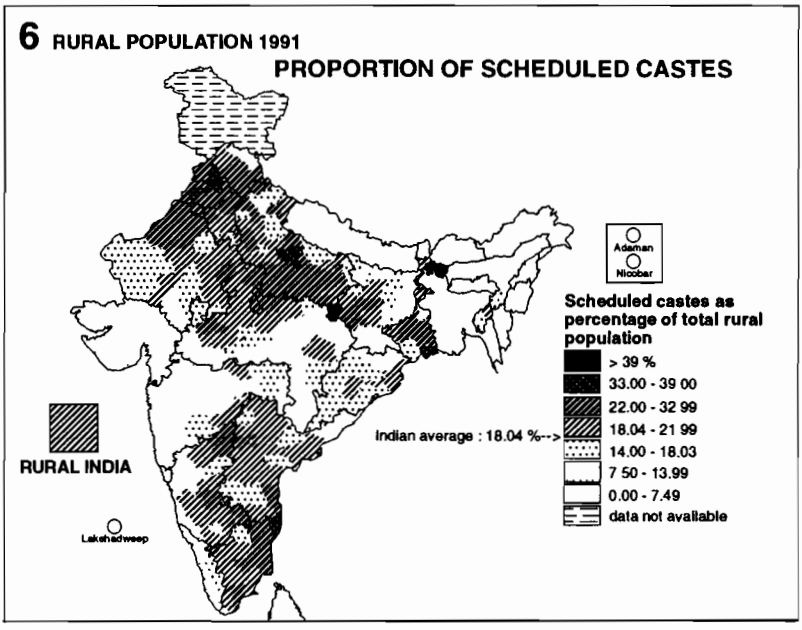


Figure 13.6: Rural population 1991. Proportion of Dalits

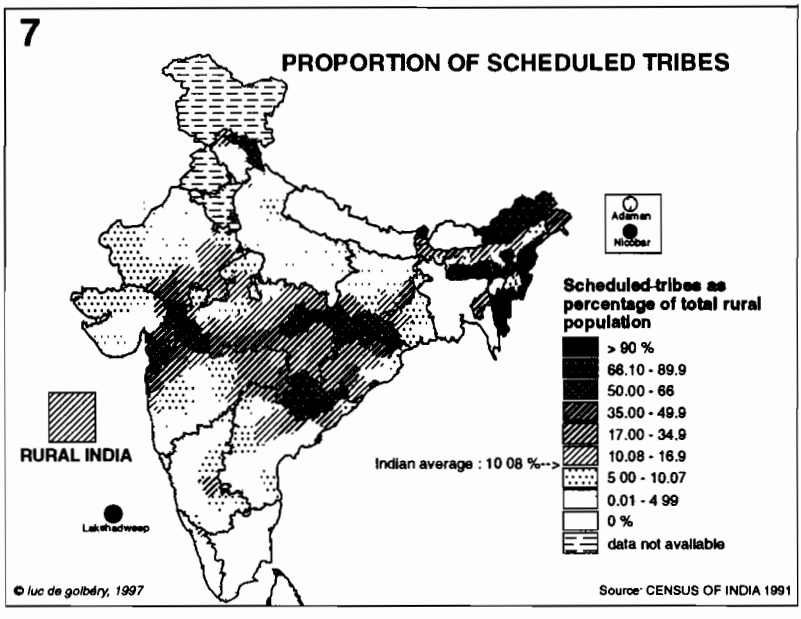


Figure 13.7: Rural population 1991. Proportion of Tribals

Scheduled Tribes have undergone a development that is spatially similar to that of the Scheduled Castes, focusing on the centre of the peninsula, but on the Telengana Plateau in Andhra Pradesh. It extends very noticeably up to the southern borders of Karnataka and into southern Maharashtra. This configuration is due to political reasons rather than to geographical ones. In Andhra, significant increases are due to the inclusion of the Lambada group in the list of Scheduled Tribes in this state just before the legislative elections of 1977. This change of status led to massive emigration from Maharashtra, where the group was not scheduled.

The literacy level among Dalits (Figure 13.10) is very low, 33.25 per cent, and very uneven: 390 literate women for every 1000 literate men. This sex inequality is linked closely with literacy levels. The higher the level of literacy, the greater the equality between the sexes. Its spatial distribution is very similar to that of the overall population (Figure 13.12) with the exception of two groups. Group B, with a very low level of literacy but a relatively lesser degree of inequality between the sexes, may indicate official efforts in the uplift of the Dalits. Group C1, which shows a marked degree of sex inequality, includes few Dalits.

The literacy level among the tribal population (Figure 13.11) is even lower than that of the Dalits, with 27.45 per cent, but slightly more balanced, with 406 literate women for every 1000 literate men. Similar geographical patterns are evident in Figures 13.11 and 13.12, but figure 13.11 indicates a higher level of literacy in the tribal states of the north-east, and in eastern Maharashtra. A group with a very high sex inequality, B1, can be found in the Gangetic valley, where there are fewer tribals.

The literacy level among the rural population as a whole (Figure 13.12) is higher, 44.69 per cent, and less uneven: almost one literate woman for every two literate men. Group A1, with the highest literacy level, shows 938 literate women for every 1000 literate men. Groups A2, A3, A4, and A5 form successive circles around A1 in the south-western states, in the east, and in the far north. The B groups show a high level of sex inequality with a low literacy level, with the exception of B1. They are found mainly in the northern half of the country, as well as in the west of Andhra Pradesh and of Orissa. All three figures display the very low level and great sex inequality of literacy in Rajasthan.

Minorities have a higher birth-rate than the rest of the population, since they possess a proportion of children that is significantly higher than the average for rural India which is 18.76 per cent: 19.92 per cent for Scheduled Castes, and 20.36 per cent for Scheduled Tribes. Yet again, the north-south asymmetry is noticeable, both for the overall population and for Scheduled Castes. Even though this disparity is less evident among tribals, the north-central region does have a higher proportion of children than other tribal regions. Again, it should not be forgotten that the size of the populations concerned in these areas is often very small. Areas of low and high values should be compared with the literacy figures, for the expected correlation coefficients are striking. The strong demographic dynamism of the central Deccan is confirmed, fostered by high birth rates and migration.

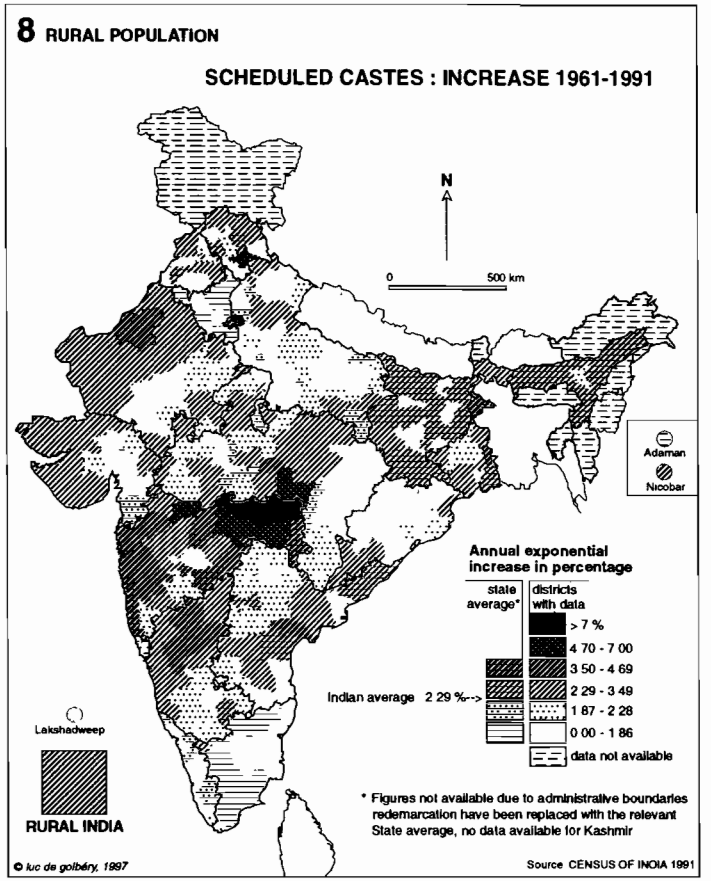


Figure 13.8: Dalits. Growth 1961-1991

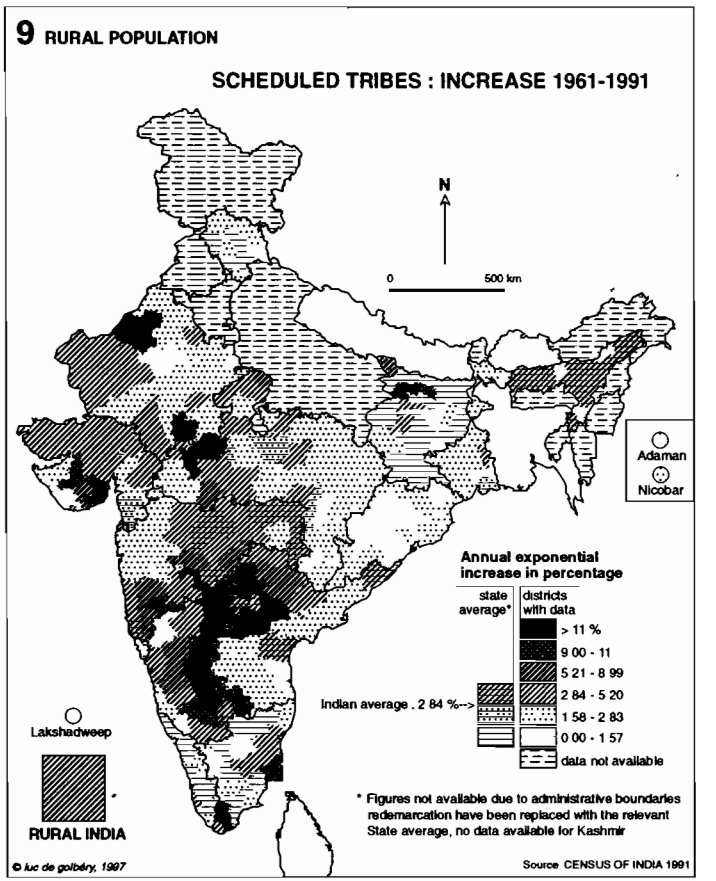
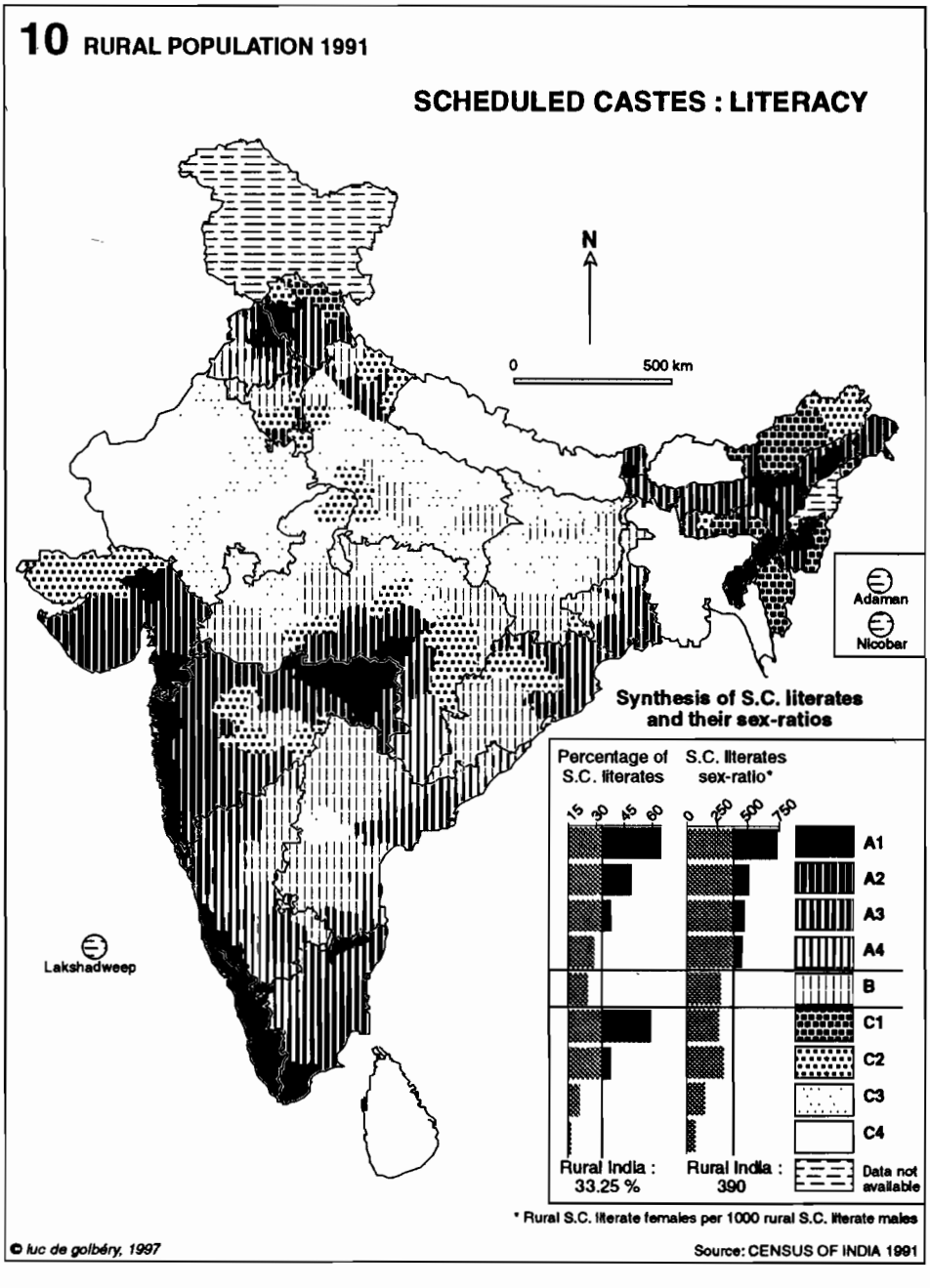


Figure 13.9: Scheduled tribes. Growth 1961-1991



Figures 13.10: Rural population 1991. Dalits: literacy

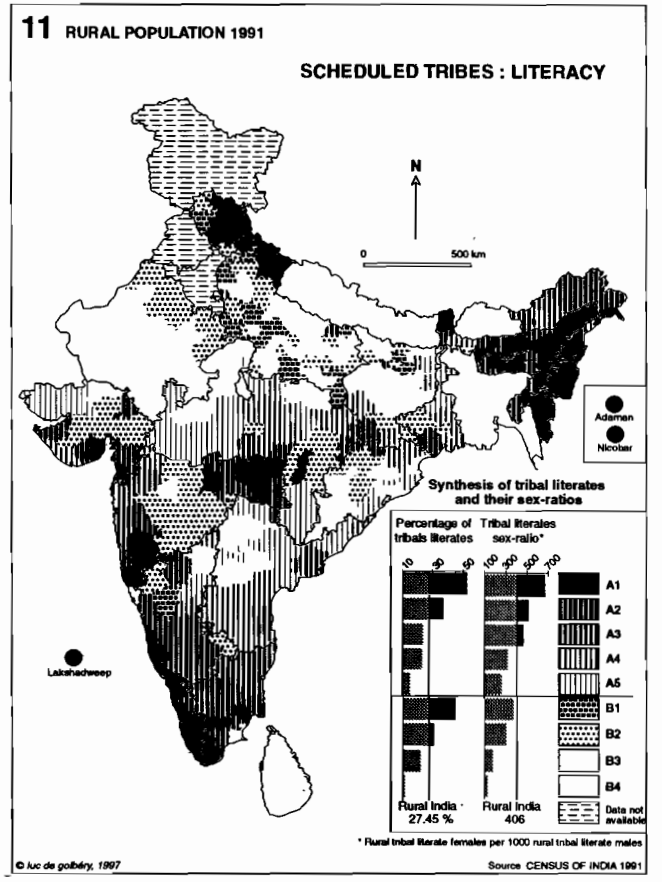


Figure 13.11: Rural population 1991. Tribals: literacy

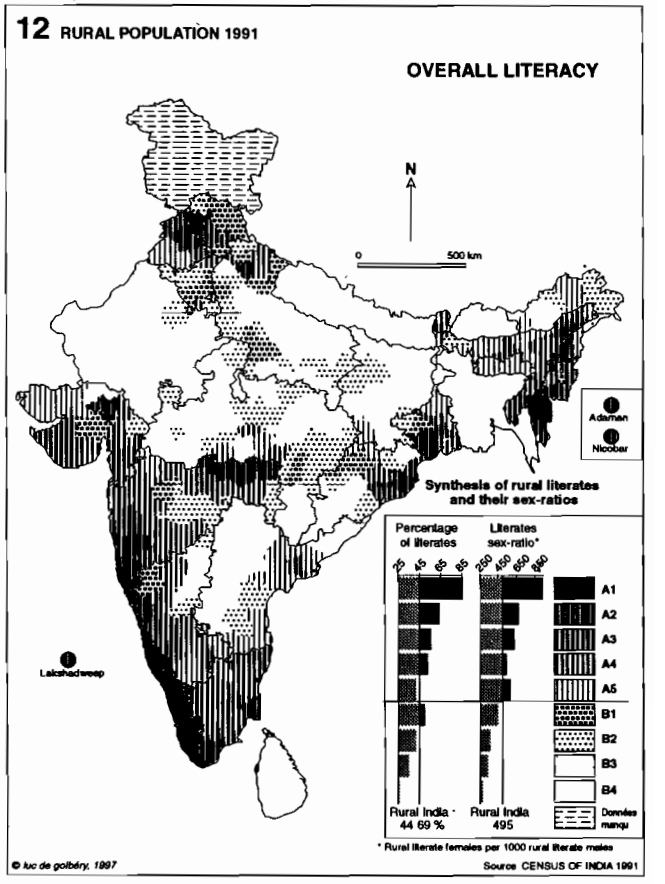
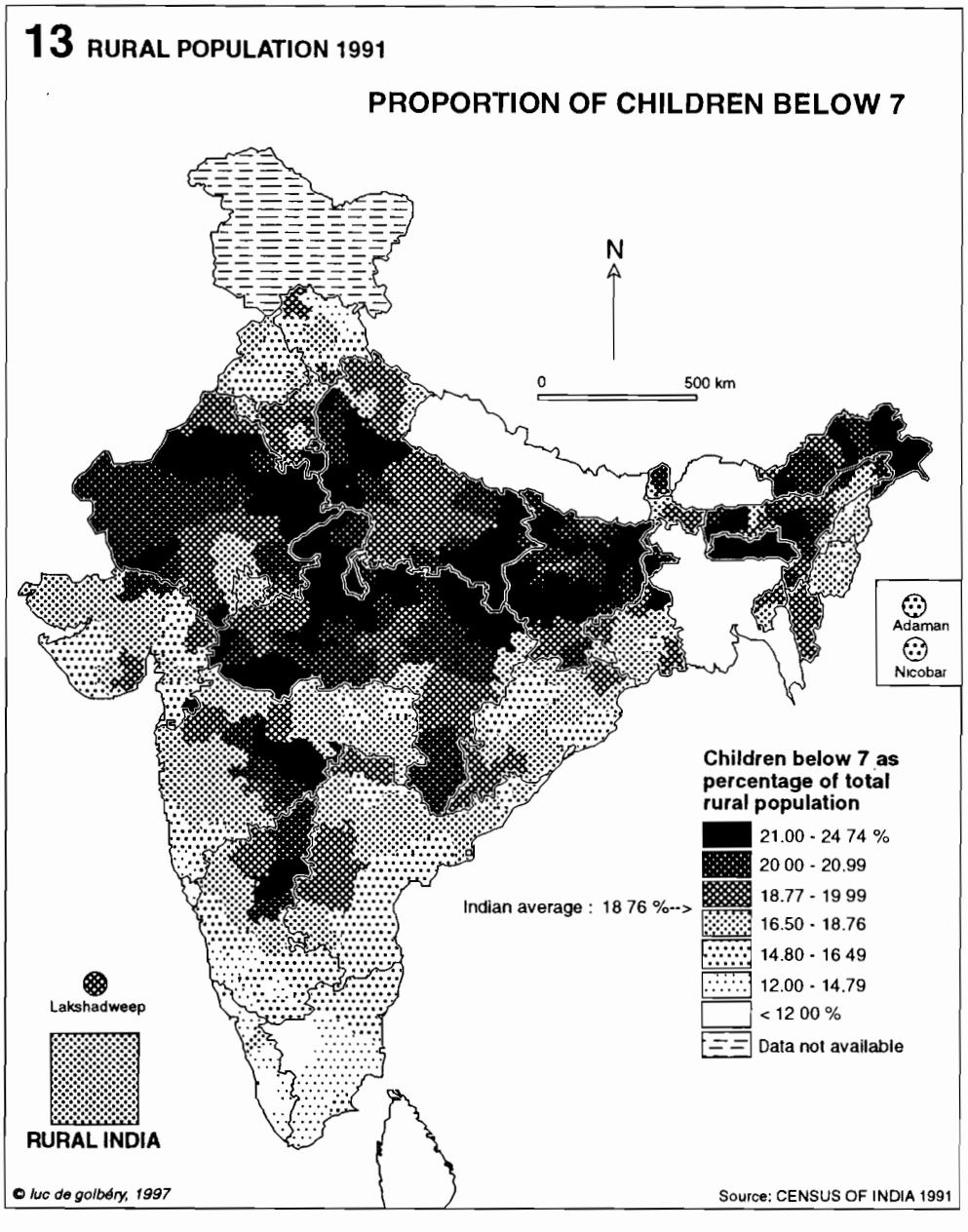


Figure 13.12: Rural population 1991. Overall literacy



Figures 13.13: Rural population 1991. Proportion of children below 7

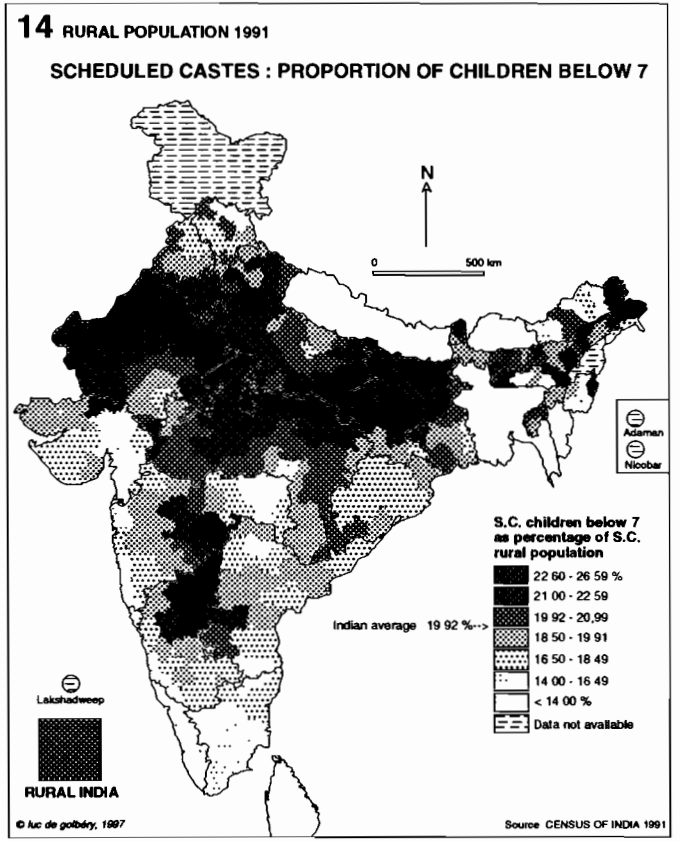


Figure 13.14: Rural population 1991.
Dalits: proportion of Children below 7

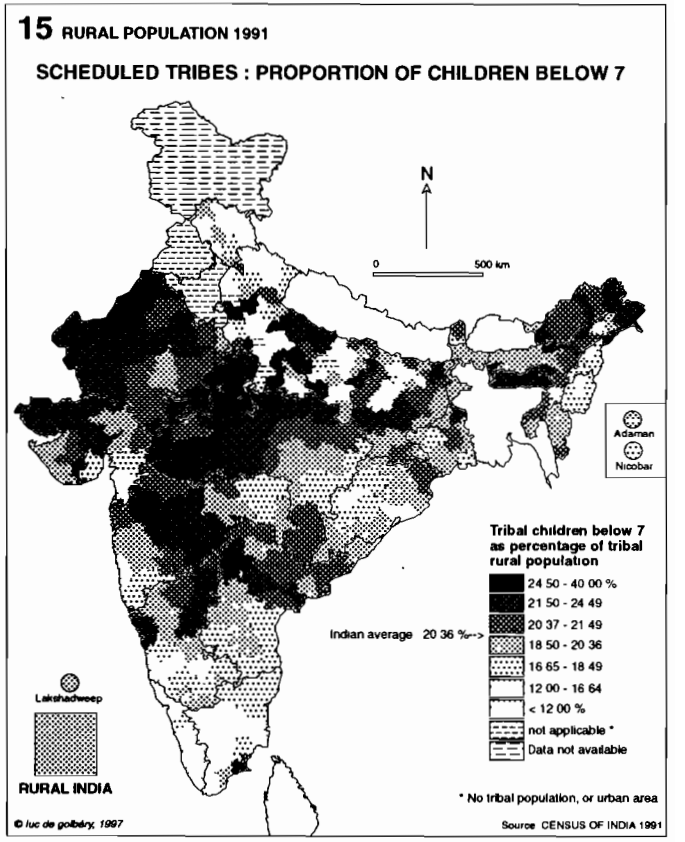


Figure 13.15: Rural population 1991.
Tribals: proportion of children below 7

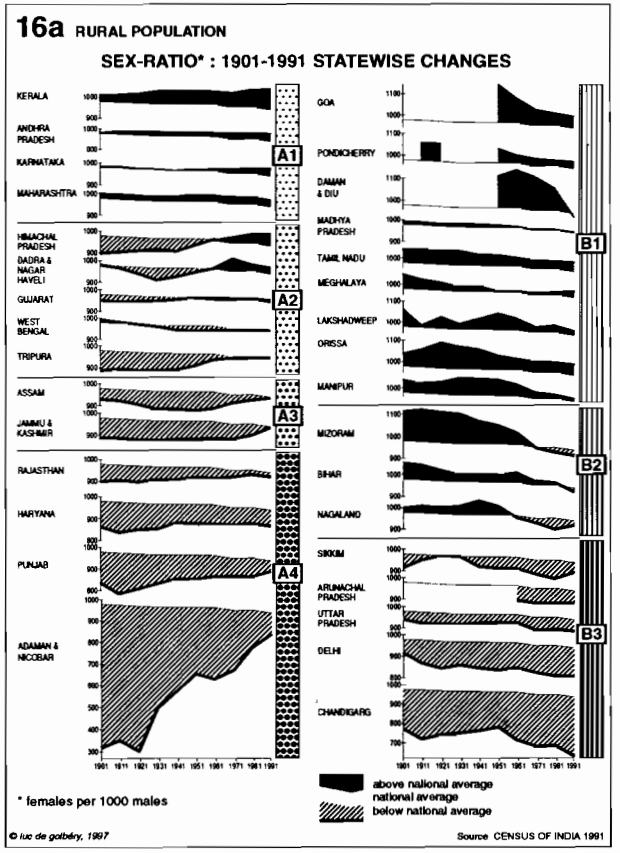


Figure 13.16a: Rural population 1991.
Sex ratio*: changes 1901-1991 by state

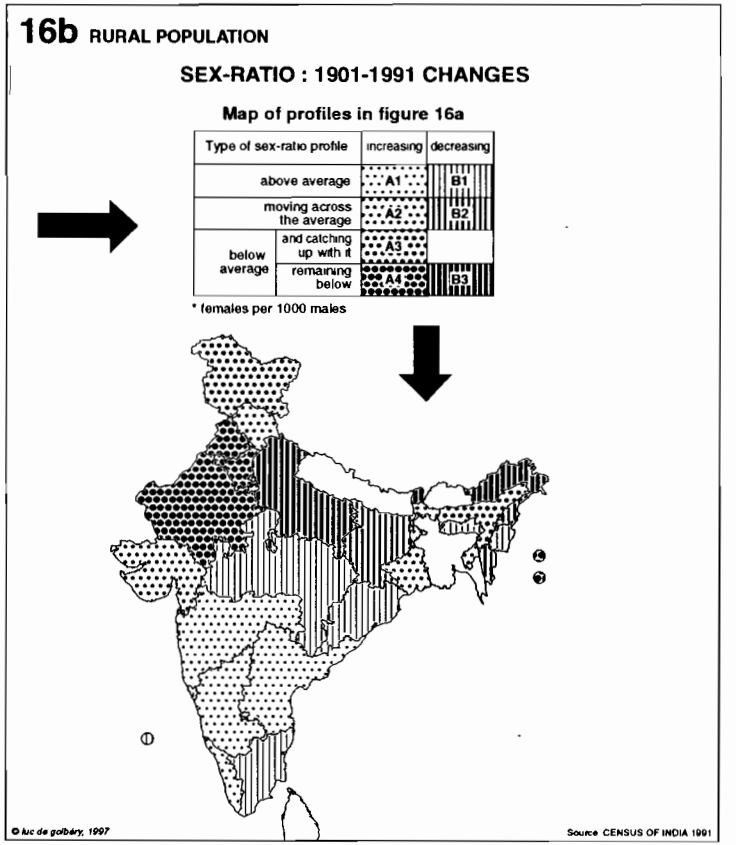


Figure 13.16b: Rural population 1991.
Sex ratio*: changes 1901-1991. Map of profiles in figure 16a

The sex ratio (number of females per 1000 males) in India has shrunk from 972 in 1901 to 927 in 1991, in a slow decline which has shown a tendency to accelerate since 1961. This acceleration is more marked in rural India where, from 979 at the beginning of the century, it was still 963 in 1961 but has fallen to 938 over the last 30 years. In urban areas, starting from 910, because of the presence of migrants, it fell steeply to reach 831 in 1941, then rose considerably to 894 in 1991.

Diagram 13.16a shows changes in the sex ratios in Indian states from 1901 to 1991, in comparison with that of India as a whole. The line at the centre of each profile, sinking slightly, represents the country's overall development. Black indicates values that are higher than the Indian average, and grey those that are lower. The states have been grouped according to similarities in their profiles. Type A includes profiles in which the sex ratio has increased over time, Type B those that have dropped. These are subdivided into three main families: profiles that have remained continuously above the average (black), those which have crossed the average or fallen below it, and those which have remained below average.

The average sex ratio of the rural population was 939 females for every 1000 males in 1991 (Figure 13.17). The northern half of India has a smaller proportion of females than the southern half. Tribals show a more balanced sex ratio, 976, as against 937 (other castes) and 926 (Scheduled Castes). In the heart of the tribal zone of Madhya Pradesh and Orissa, and in Arunachal Pradesh, the ratio exceeds 1000. On the northern and western margins of the central zone, and in the north-east apart from Arunachal Pradesh, it drops to 960. In mixed zones (Tribals / Scheduled Castes) it falls below 950. Elsewhere the sex ratio among tribals tends to be almost always higher than that of other social groups. It appears as if tribal societies may have more equal female/male mortality rates.

The sex ratio among Dalits is the lowest, at 926. However, it approaches equitable levels, at 995, on the eastern coast. It is average, 951, in the southern half of India. On the other hand it is very low, 863, in the northern half. Here we find the same patterns indicated in Figures 13.10 (literacy), and 13.14 (proportion of children below 7), demonstrating how closely demography and education are linked. The exception of Andhra Pradesh may be noted, where there is a very low literacy rate, but one that is relatively egalitarian compared with that of the north, accompanied by a near average sex ratio.

The sex ratio of other groups (neither Tribal nor Dalit) stands between these two, at 937 females for every 1000 males. It is very high on the west coast, as are literacy levels, and a low proportion of children below 7. The sex ratio is also high in north-western Gujarat, but does not show any correlation with literacy or fertility. Central Maharashtra and Karnataka, like southern Gujarat, show an average level at 956.

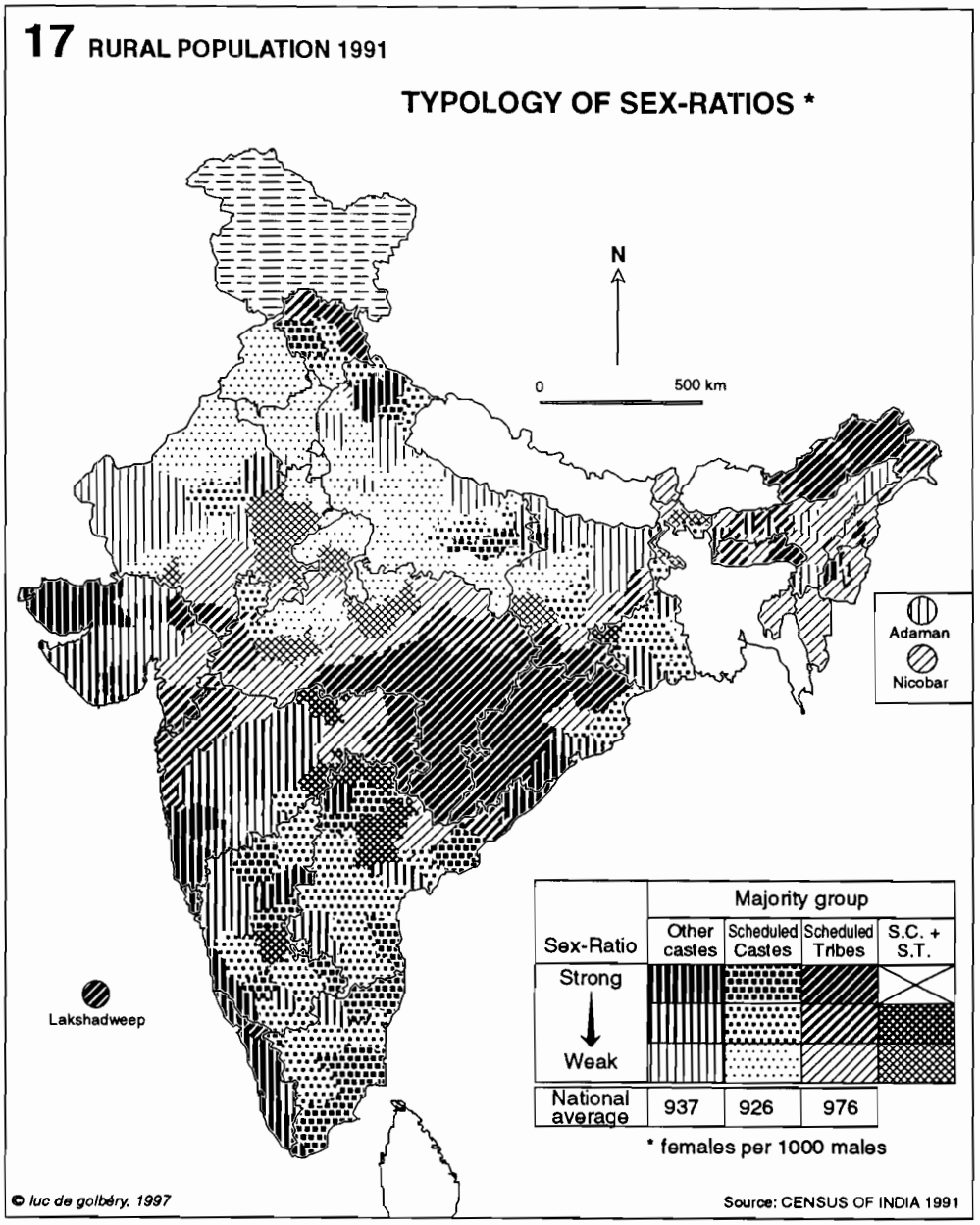


Figure 13.17: Rural population 1991. Typology of sex ratios

The north, the Himalayan foothills, and Rajasthan stand out here again as a result of their low figure, of 892, which unfortunately correlates closely with the lowest and least egalitarian literacy rates. In other areas where Scheduled Castes predominate, the average sex ratio is a little higher than that of the Scheduled Castes. In tribal areas, on the other hand, it is distinctly lower than that of the tribals and slightly lower than that of the Scheduled Castes.

Occupations

In the 1991 Census, occupations were divided into nine categories. We have maintained a distinction between cultivators and agricultural labourers, rather than clubbing them together in the same category, "agriculture", since cultivators represent 48.4 per cent of the rural working population, and agricultural labourers, 31.6 per cent. We have also kept as a single group "Forestry, animal husbandry and fishing", activities that are characteristic of some tribes, and represent 2.2 per cent of the working population. Household industry includes artisans and construction, and employs 2.2 per cent of the working force, while Industry includes industries other than household industry and mining, and counts for 5 per cent of the working force. Services include commerce, transport, communication and other services; it represents 10.5 per cent of the working population.

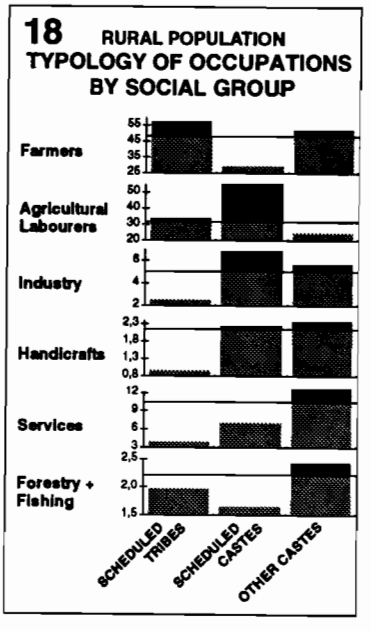


Figure 13.18: Rural population. Typology of occupations by social category

Classifying occupations according to social category (Figure 13.18) underlines the tribals special profile. They are mostly engaged in agricultural activities. 57 per cent of them are cultivators, and 33 per cent agricultural labourers. Only 2.5 per cent work in industry, 4 per cent in services, 2 per cent in forest and fishery, and 1 per cent are artisans. The Scheduled Castes are primarily agricultural labourers, 55.1 per cent, and less often cultivators, 29.4 per cent. They also work in industry, 6.8 per cent, and household industry, 2.2 per cent. Other castes are to be found in all the categories except agricultural labour, which represents only 24.8 per cent of their occupations.

A strong dichotomy can be observed between areas engaged mainly in agriculture and those engaged in a variety of occupations (Figure 13.19). The former correspond to regions where Scheduled Castes are relatively numerous, except for the Punjab, Haryana and northern Uttar Pradesh, as well as south-eastern Madhya Pradesh. In the north cultivators are more numerous, in the south and the eastern Ganges valley agricultural labourers predominate. Where tribals are numerous, in central India, Scheduled Castes are mainly engaged in household industry. They are employed in the service sector in the tribal areas of the north-east. Elsewhere, where they are less numerous, they show a mixed profile. And in the western Ghats, they are often engaged in forestry.

The figure of tribal occupations (Figure 13.20) presents a less clear picture than those of the Scheduled Castes and other social groups. The heart of the central tribal zone is predominantly agricultural, and there too there are more cultivators in the north and agricultural labourers in the south, but this is less clearly marked. Multiple activities including household industry are found in the south-eastern part of India. The western coast is mainly occupied with forestry and fishing. The western parts of Maharashtra, Gujarat and Rajasthan show a predominance of industry. Services predominate in the Ganges basin and the north-east.

For other social groups (Figure 13.21), agriculture is dominant throughout the central part of India from the north to the south,. The same dichotomy between the north (cultivators) and the south plus Bihar (agricultural labourers) appears again here. On the western coast, industry is the main occupation, while on the eastern coast household industry predominates. The north-east (Tribal states) and the north-west (Punjab, Haryana and northern Uttar Pradesh) stand out because of the large number of people employed in the service sector. The Western Ghats, and also the heart of Assam, have significant populations involved in forestry.

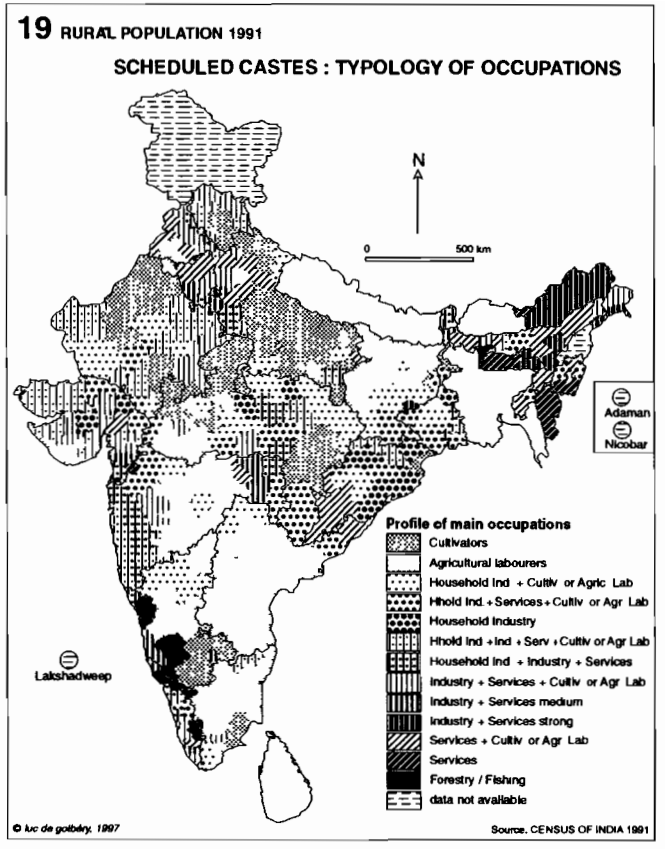


Figure 13.19: Rural population.
Dalits: general typology of occupations

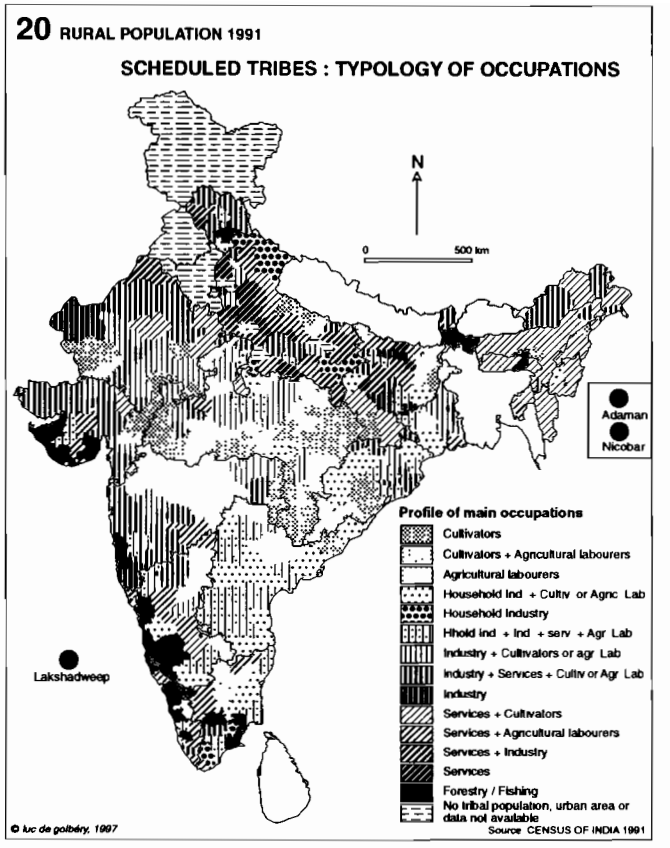


Figure13.20: Rural population.
Tribals: general typology of occupations

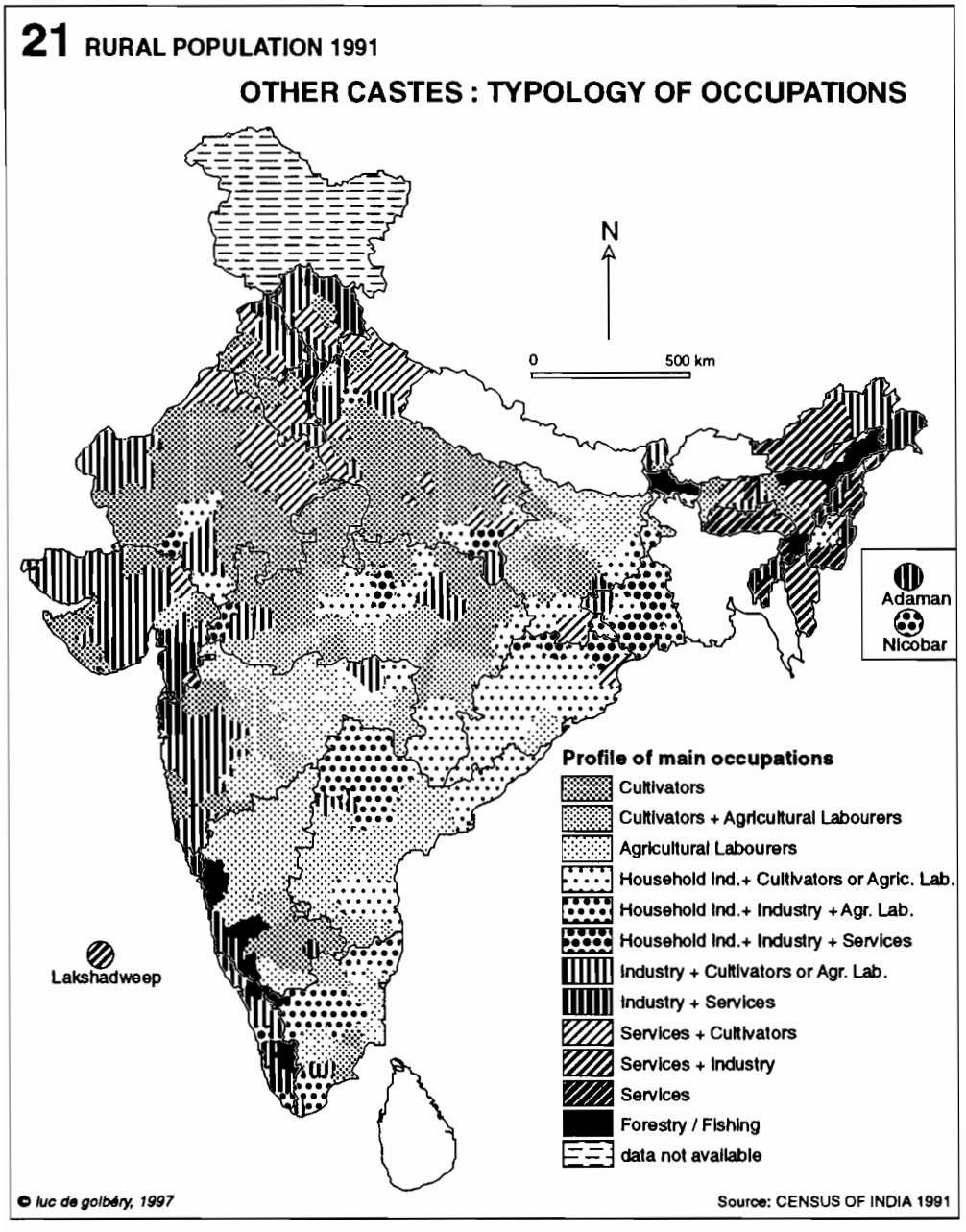


Figure 13.21: Rural population. Other castes: general typology of occupations

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Christophe Z. Guilmoto and Alain Vaguet (editors)

Essays on Population and Space in India

Indian territory, from regional to local level, remains a fundamentally composite space, divided into varying segments of more homogeneous appearance. Closer analysis shows that these segments are themselves subdivided and that spaces and resources are unequally shared and often disputed among social groups. The chapters in this volume, each in its own way, illustrate the ubiquity of oppositions running across the regions, irrespective of the level of analysis chosen. The resulting image of India is that of a complex and fast evolving system characterized by strong social and historical Patterning as well as extensive spatial recombination.

This collection of essays, first published in France in 1997 and based on abundant cartographic materials, brings together a selection of studies by geographers and other social scientists on India, covering a large variety of topics: population dynamics, rural-urban linkages, spatial discrimination, health issues, minorities, etc. These varied research interests open a large number of areas related to spatial organization in India, integrating demographic, economic and anthropological questions and illustrate the relevance of an informed geographical perspective for the study of social transformation in India.

The authors would readily agree on the modesty which these essays are bound to evidence, so rich and embedded is the fabric of Indian space. Readers henceforth have more material to form, in their turn, new images reflecting contemporary India and its transitional geography.

Christophe Z. Guilmoto is a demographer with IRD (French Research Institute for Development)
Alain Vaguet teaches geography at Rouen University, France.