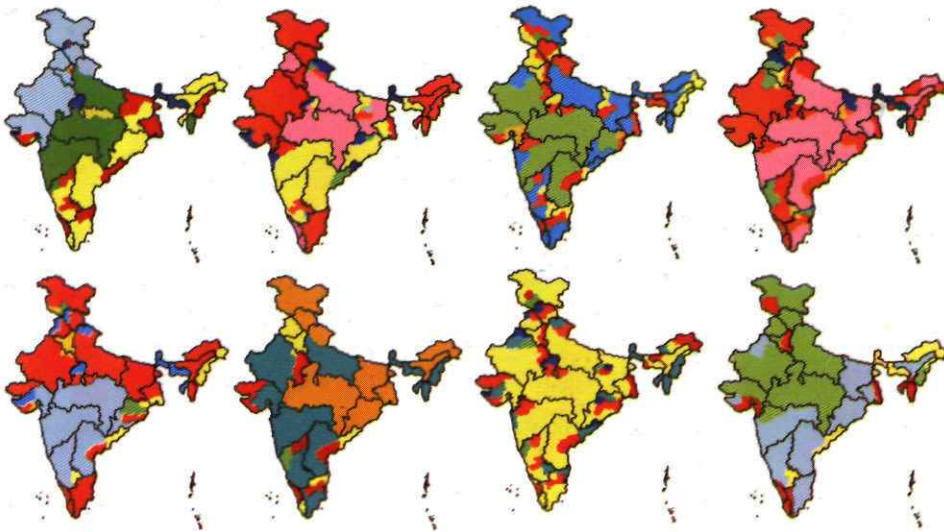


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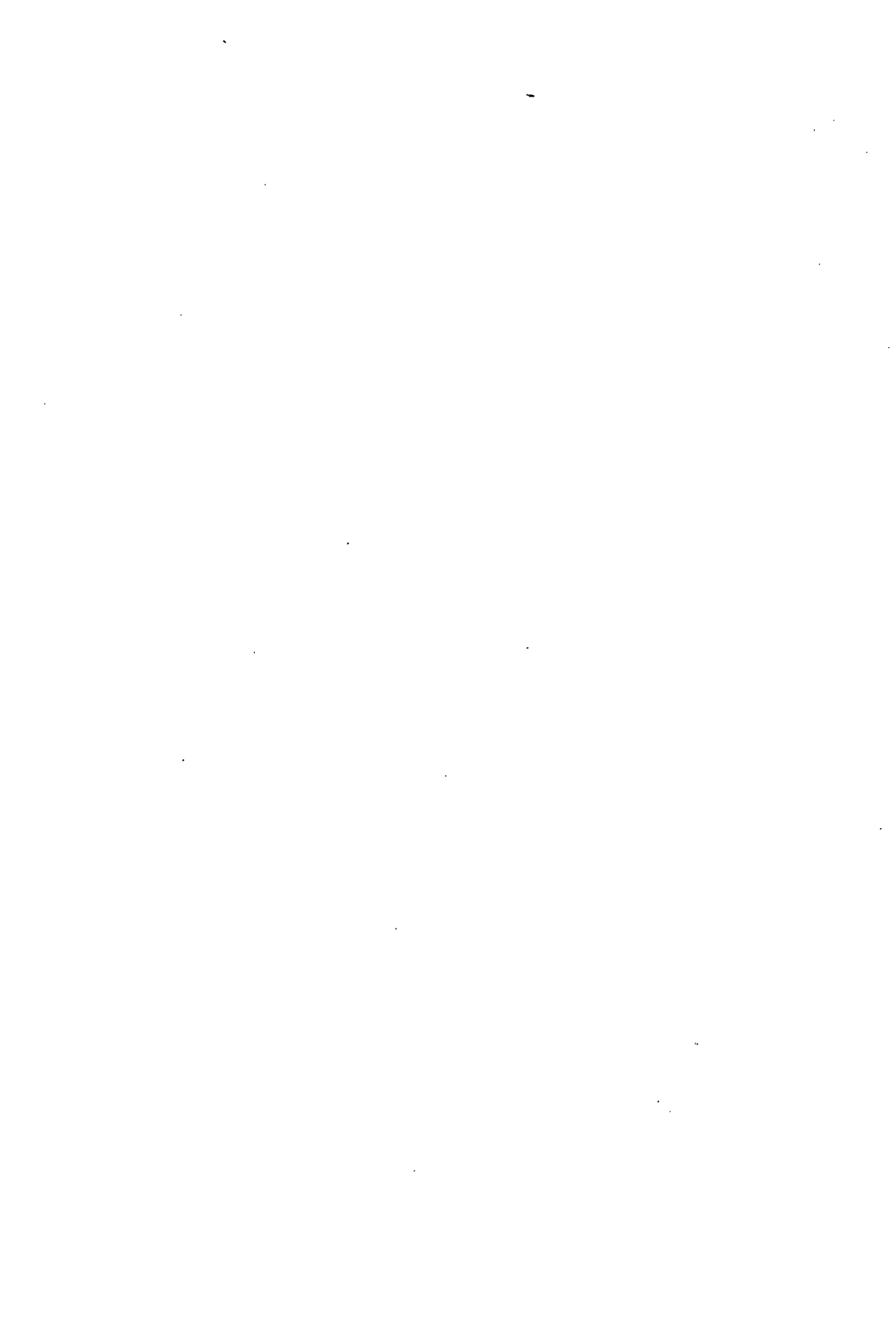
Edited by
C.Z.GUILMOTO
and A.VAGUET

Essays on Population and Space in India



INSTITUT FRANÇAIS DE PONDICHÉRY

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Christophe Z. Guilmoto
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Published with the support of the
Espace-Populations-Sociétés
Université des Sciences et Technologies de Lille
U.F.R. de Géographie
(Villeneuve d'Ascq Cedex, France)



INSTITUT FRANÇAIS DE PONDICHÉRY

**Christophe Z. GUILMOTO
and Alain VAGUET (Eds.)**

Essays on Population and Space in India, Pondicherry,
French Institute of Pondicherry —2000, 256 p. (Publications
du Département de Sciences Sociales, n°5).

Foreword p. 11; introduction p. 13; general bibliography
p. 241

**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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Publié par l'Institut Français de Pondichéry
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ISBN 0971-3085

Text: layout by Tiaré Purushothaman

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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 Hammar skjöld, (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).

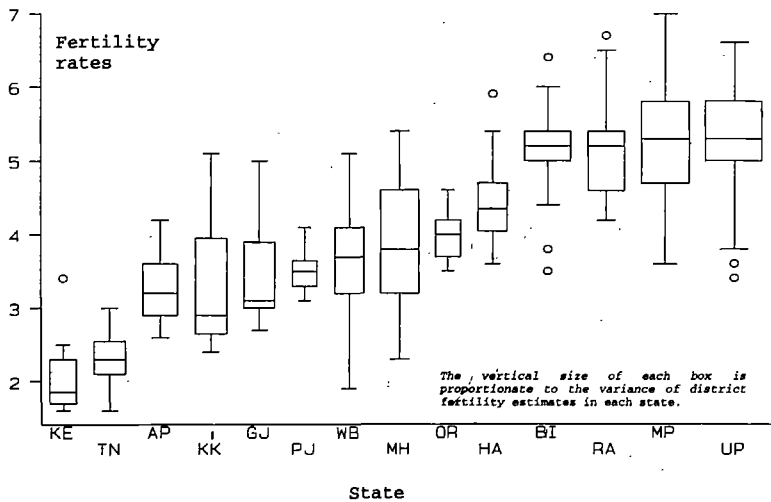


Figure 2.1: Distribution of district fertility estimates for longer states, 1991.

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 than 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. Bihar, Madhya Pradesh, Rajasthan and Uttar 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)

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

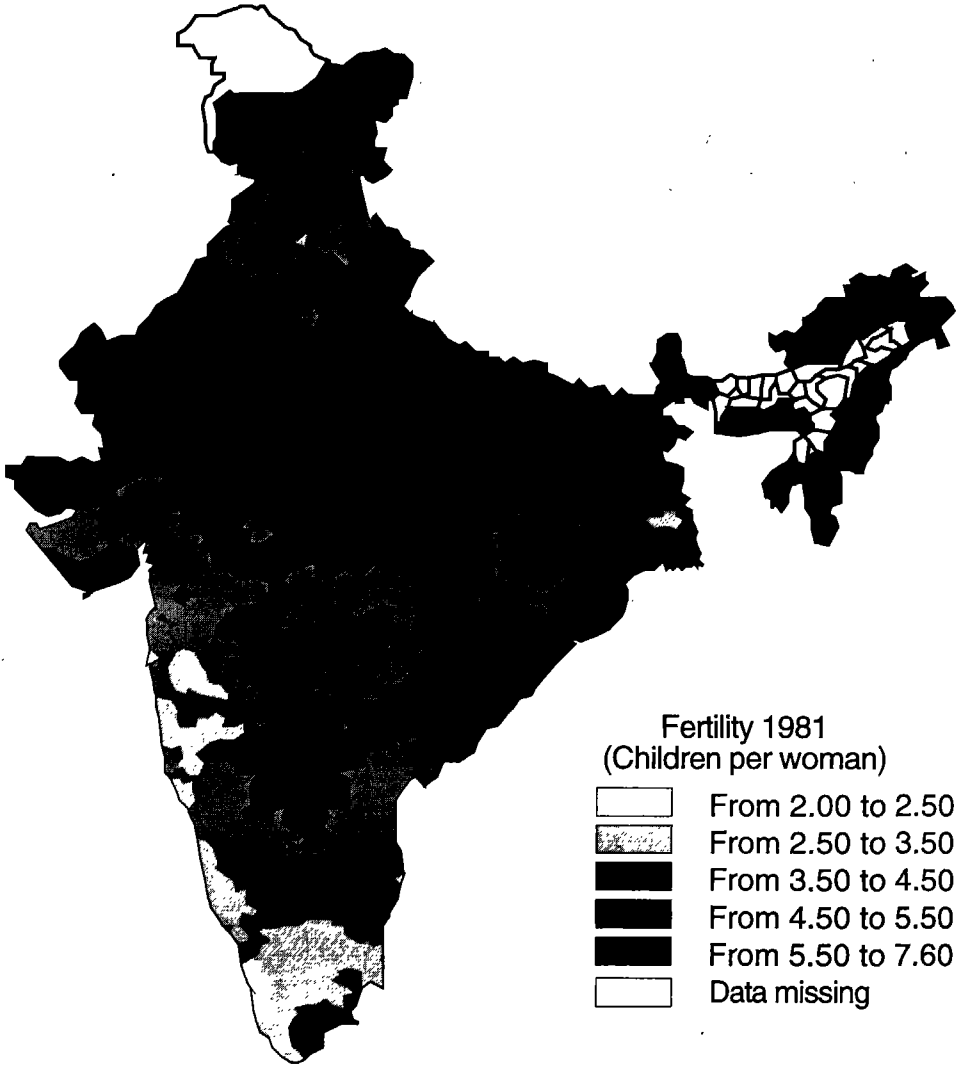


Figure 2.3: Fertility estimates for 1981 due to Mari Bhat

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 spreading outwards from innovation nodes, 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 Bhubaneswar 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 trend, 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 (Marathwada) as far as Karnataka (Hyderabad Karnataka), 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

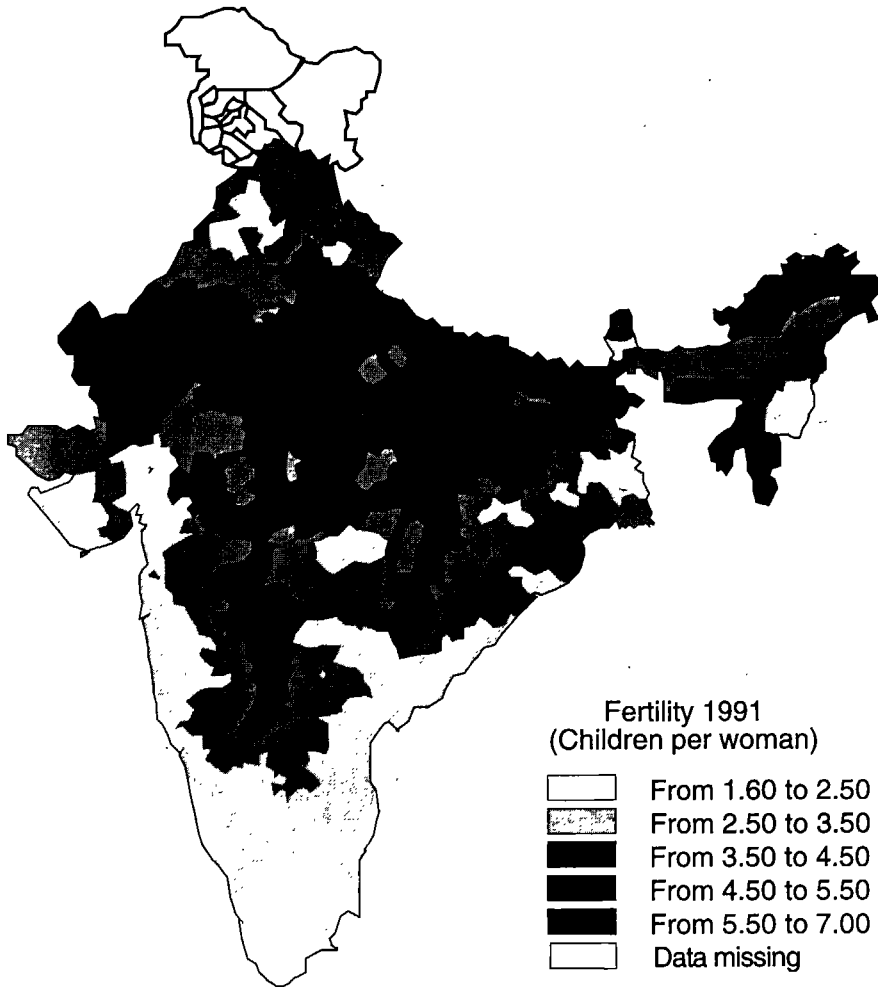


Figure 2.4: Fertility estimates for 1991 due to Mari Bhat

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

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

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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.

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

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 than 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.