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## Unruly urbanisation on Delhi's fringe

Bentinck, J.

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## 2. THE RURAL-URBAN FRINGE AS PART OF METROPOLITAN DELHI

### 2.1 Delhi: an introduction to the Metropolis and its surroundings

The conditions for living and working in the study area are obviously influenced by the physical geography, history, rates of growth, and the administrative and political institutions of the metropolitan region as a whole.

The city is characterised by a dual core: the ancient city of Delhi (or *Shahjahanabad*); and the administrative city built by the British, New Delhi. Delhi lies in the flat and densely populated *Indo-Gangetic plains* and is expanding in all directions. Relatively fertile alluvial soils dominate towards the northern and western sides of the city's fringe. The flat landscape there contributes to the high suitability for agriculture.

The south of the city is different: it is part of the *Aravali* hills, stretching far into Rajasthan. Although the undulations are not very high, the land is less fertile and agriculture is more difficult. The rocky and hilly topography of the southern fringes has other consequences for development as well, providing an attractive environment for higher-class housing and recreational land uses. This type of development is facilitated by the fact that the urban elite is already concentrated in the southern part of Delhi. Similarly, Mehrauli Block and the southern side of Najafgarh are preferred locations for multinationals and domestic companies with an export component. The 'satellite towns' of Gurgaon and Faridabad are fast-growing areas. Their growth is supported by government action in the provision of serviced industrial sites. Other important locational advantages include the location of the airport and accessibility to the central business district of New Delhi. Similar advantages apply to the concentration of upper-class mansions, commonly known as 'farmhouses', in the southern rural-urban fringe. Lately, farmhouses have also been mushrooming on the northern side.

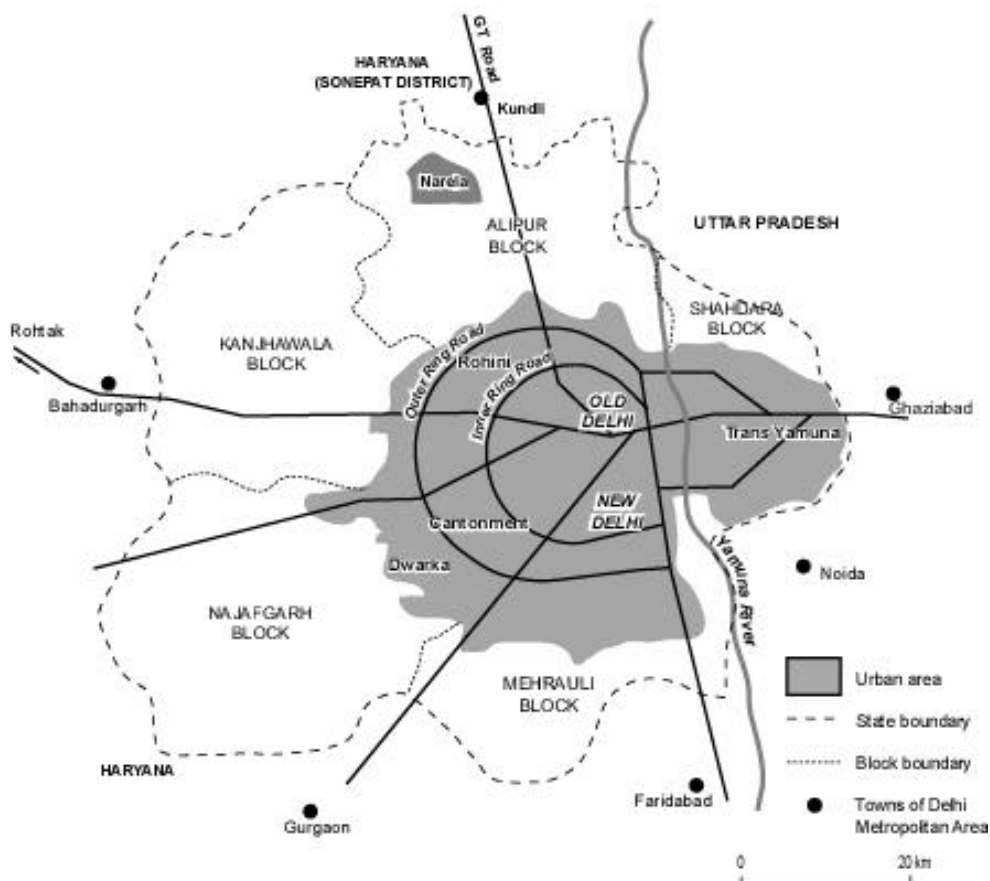
Despite the relatively faster modernisation of the southern fringe areas, the other rural areas that surround Delhi also face rapid growth. But their growth tends to be a consequence of local and domestic economic activities. Alipur and Kanjhawala Blocks traditionally accommodate many brick kilns, supplying bricks and tiles for construction activities. The north also contains much small-scale industrial activity. Manufacturers, factories making construction material, plants for the processing and distribution of agricultural products (like rice mills and exporters), and storage facilities are all expanding rapidly on the northern side (see Chapter 3).

The city has no real natural constraints, such as steep mountain slopes, oceans, or lakes. Historically, the Yamuna River forms the most important physical barrier. At present, various bridges give access to the *Trans-Yamuna* area, which now houses 40 per cent of Delhi's population. The riverbed itself is still less suitable for human habitation due to frequent flooding, although some small villages and sizeable slum clusters can be found there.

The status of Delhi as the capital of India has led to a complex structure of municipal administration. The National Capital Territory (NCT) includes areas administered in tandem by the Government of Delhi and three Municipal Corporations. The largest of

these is the Metropolitan Corporation of Delhi (MCD); the other two are the New Delhi Municipal Corporation (NDMC) and the Cantonment Board. The MCD administers the largest area, including all rural areas within the NCT. The NCT is a recent name: before 1994, the same area carried the name Delhi Union Territory (DUT). The DUT was founded in 1911, when Delhi became the capital of British India. Later, in 1947, Punjab and Haryana were split up, and Delhi was given a considerable rural area around the city. Administratively, the NCT is still a union territory, which formally means that the central government has more direct power over it than could be exerted over a state. Recently, the Delhi government has been lobbying to attain statehood. This is done to enhance the financial means and the political strength of the government of Delhi (Hindustan Times 28-3-1998). The NDMC governs the area of New Delhi, where the central government buildings are concentrated. The Cantonment Board rules an even smaller area, where there are military bases and military housing – a legacy from British rule.

Figure 2.1 Topographic map of Delhi



The history of Delhi is fascinating, even if we only look back over the twentieth century. After centuries of relative decline, its fortunes turned when the capital of British India was established in 1911. At that time, the city did not have much more than 100,000 inhabitants (Nagpaul 1996), and the vast majority of the present NCT consisted of rural villages. The initial plan of the British *Raj* envisaged locating New Delhi at the northern side of the old city, but this plan was changed due to excessive problems with flooding there. As a result, it was decided to locate New Delhi at its present location, south of the old city. Consequently, northward expansion until 1947 was limited to the present Civil Lines area, Delhi University, and some smaller neighbourhoods around it. The period from 1946 to 1970 showed massive expansion northward. Large camps for refugees from Pakistan who came during Partition were set up. Many of the same families were provided plots for houses during the 50s and 60s. In the 70s, 80s, and 90s, planned as well as unplanned development continued to convert village land into many types of residential, commercial, and industrial land use.

Nowadays, about half of the NCT area is urban. In the 1950s, the rural area of the NCT was divided into five Rural Development Blocks (in the rest of the thesis, referred to as Blocks): Alipur Block (north), Kanjhawala Block (north-west), Najafgarh Block (south-west), Mehrauli Block (south) and Shahdara Block (east). The first three still encompass a considerable rural area of respectively 52, 39, and 65 'rural' villages (Census of India 1991, p. 92). Mehrauli has only 22 villages left, while Shahdara contains only 23 villages due to the physical constraint of the boundary with the neighbouring city of Ghaziabad. The total number of villages in rural Delhi is currently 209, down from 304 in 1951 and 243 in 1971 (Census of India 1951, Solanki 1987, Katariya 1997). Of the 209 villages, 10 are uninhabited. The city's 'jacket is least tight' on the northern and western sides, encompassing the largest rural area within the NCT.

Since the end of the 1950s, the Delhi Development Authority (DDA) was 'chief developer' for land supply and the construction of infrastructure and housing, a role that was approved of by the government in 1961 (United Nations 1995, p. 79). Up to 1983, the DDA had acquired and developed 18,200 hectares of land (Ibid.). To the north of the city, the most important project of the DDA is Rohini Township, planned to accommodate a population of over one million people. Most of the land for Rohini was acquired from villages in Kanjhawala Block, but it also included land from villages in Alipur Block such as Badli, Haiderpur, and Samaipur (see Figure 2.2). There are now preparations for Rohini Phase II and Narela sub-city, which is planned to stretch far into Alipur Block at the west side of the GT road. However, progress is very slow, and the DDA is forced to incorporate the mushrooming spontaneous unauthorised neighbourhoods founded by private developers, property dealers, and settlers (see Chapter 4). A more recent plan is Dwarka sub-city in northern Najafgarh Block, where all the necessary land is acquired and construction activity is under way.

The housing supply does not come anywhere near the actual demand exerted by the growing population of Delhi, despite the high ambitions in large-scale housing projects. The gap of housing for the poor and the lower-middle class is filled by the 'unauthorised' sector that develops land illegally (see Chapter 4).

This leads to a mixed land-use pattern characterised by a rather haphazard pattern of the following types of built-up land in recently urbanised areas of Delhi:

- Formal housing 'colonies'

- Unauthorised settlements
- Squatter settlements or slums
- Planned industrial/commercial/institutional areas
- Unplanned or unauthorised industrial and commercial areas
- Urban villages

The urban villages become incorporated in the urban extension but largely keep their original morphology. The transformation of the livelihood of these villages is much more radical, although some households retain agricultural activity in the form of dairy farming. The dispersal of urbanisation into the rural-urban fringe causes substantial transformation in the villages beyond the urban limits as well. This is confirmed by the analysis of population data of the census, presented in the next section.

In a functional sense, the rural-urban fringe clearly extends beyond the borders with the neighbouring states of Haryana and Uttar Pradesh. Nearby Ghaziabad has more than half a million inhabitants, of which many commute to Delhi. Smaller but fast-growing towns such as Gurgaon, Faridabad, and Bahadurgarh, located at Delhi's borders, are also integral parts of Delhi's agglomeration. In Kundli, a village just across the border in Haryana north of Alipur Block, there is rapid development in anticipation of the expected relocation of the enormous fruit and vegetable market of Azadpur. Part of that market will be relocated in Alipur Block, for which 25 hectares has been acquired from village Khanpur (The Hindu 15-4-1998).

The authorities recognise the relevance of the area beyond the NCT. The Delhi Master Plan (National Capital Region Planning Board 1986) envisages a new layer of planning that would cover these 'satellite towns' in the Delhi Metropolitan Area (DMA). The DMA consists of the present NCT with Gurgaon, Faridabad, Ghaziabad, Bahadurgarh, and Kundli. The DMA is intended to function as a framework in which the development authorities of Delhi and its two neighbouring states, Haryana and Uttar Pradesh, can operate. In reality, the DMA framework hardly plays a role in planning. The planning authorities in the neighbouring states bargain with the Delhi government on the basis of their own interests. They have their own state-level policies for industrialisation and housing (as in Gurgaon and NOIDA). In a way, these neighbouring authorities are competing with Delhi for tax-revenues and employment benefits. Industrial development beyond Delhi's borders is highly concentrated. That is because industry needs good transport links to Delhi, and good amenities (such as electricity and water) are only present at certain locations. DMA framework does not yet seem capable of creating a similar level of amenities and infrastructure at both sides of the borders.

The largest administrative planning entity of Delhi and its region is the National Capital Region (NCR). This area of 30,000 km<sup>2</sup> extends beyond the state boundaries shown in Figure 2.1 and includes the satellite towns of Meerut, Rewari, Panipat, Rohtak, Khurja, Palwal, and Alwar District in Rajasthan (National Capital Region Planning Board 1986). In creating both the DMA and NCR planning framework, the Delhi Master Plan (DMP) envisions the decongestion of urban Delhi by decentralising economic development and population growth. Better transport seems to be the most important component of a policy to make the peripheral areas more competitive. The population growth in the satellite towns is higher (Mahavir 1996), but it is unlikely that the DMP can be credited for this development. The diseconomies of scale, such as shortage of developed land due to inadequate land supply, is probably more important (see Chapter 4).

## 2.2 Occupational change in Delhi's rural area

A large part of this thesis deals with the occupational transformation of the villages. This section compares key figures on population and occupational structure of rural Delhi with other relevant spatial delimitations. Most data are derived from the Census of India. The figures should be interpreted rather loosely, since there are relatively large errors of enumeration in the census – especially in the rural-urban fringe, where changes occur rapidly. Nevertheless, Tables 2.1 and 2.2 indicate that the rural-urban fringe is a mix of urban and rural characteristics. The share of agricultural occupations in rural Delhi is far below the figure for rural India and even below the national average. The comparison between 1971 and 1991 is problematic, due to inconsistencies in the classification. In addition, the areas that are already incorporated into the city cannot be extracted.

Particularly the comparison of rural Delhi with the rural area of Sonapat District in Haryana State is striking. Haryana surrounds Delhi on three sides. Culturally and historically, the villages of Haryana and Delhi are quite similar. Nevertheless, bordering rural Sonapat indicates a much lower degree of urban influence on the occupational structure. In 1991, the villages in Haryana had an average of 61 per cent of its workers in agriculture, whereas those in Delhi had only 17 per cent. Agricultural employment has decreased sharply in Delhi's villages, at least in relative terms. The figures would diverge even more if both years had used the same delimitation for rural Delhi including the villages that were urbanised between 1971 and 1991. Many villages (48) belonging to rural Delhi in 1971 have since been incorporated into the city.

The percentage of workers in an agricultural occupation in rural Delhi is close to the figure for urban India! Agricultural occupations in urban India are still common due to the incorporation of villages into the urban area. These urban villages retain some of their agricultural activities, and there are many dairy colonies in urban areas.

In 1951, around 52 per cent of rural Delhi's workers were engaged in agriculture, although it must be noted that the sectoral definitions were slightly different at that time (Census of India 1951). In 1971, the share was 38 per cent, which indicates that the transformation in occupations started before 1971. A large part of the transformation is explained by the massive influx of migrants. Although many migrants work in agriculture, they are not included in the census since they are only seasonally present (the census enumeration sets a threshold of six months residing in the area for inclusion). The share of the population in agricultural work is also low because the labour participation rate is substantially lower than in rural India (see Table 2.2). This, in turn, is due to the fact that very few women are enumerated as employed. The female participation rate in employment was only 5 per cent in 1971 and a mere 6 per cent in 1991. Of the agricultural workers, just 7 per cent are female. This is probably the main reason for the low labour participation rate in rural Delhi. 'Real' rural places as well as urban areas generally show much higher rates. For example, even rural Sonapat has 12 per cent females among all workers and 16 per cent females among agricultural workers. Northern India is known for having low female participation rates due to a dominant cultural preference for women not to work if the household can afford it.

It should, however, be noted that despite the sharp decline in the relative share of employment in agriculture and the decrease in the amount of cultivated area, the absolute number of people employed in agriculture has increased slightly.

Table 2.1 Comparison of the occupational characteristics of rural Delhi with other regions, 1971

	<b>Rural Delhi</b> <b>(in 1,000s)</b>	Urban Delhi (in 1,000s)	Rural Sonapat (in 1,000s)	Rural India (in millions)	Urban India (in millions)
Total Population	<b>419</b>	3,647	312	439	109
Workers	<b>105 (25%)</b>	1,117 (31%)	83 (26%)	149 (34%)	32 (29%)
Agric. workers*	<b>40 (38%)</b>	18 (2%)	58 (70%)	126 (85%)	5 (17%)
Non-agric. workers	<b>64 (62%)</b>	1,099 (98%)	25 (30%)	23 (15%)	27 (83%)
Area (km <sup>2</sup> )	<b>1,039</b>	361	1,161	n.a.	n.a.

Sources: Census of India 1971, Observer 1998

\* Including the categories: I. cultivators, II. agricultural labourers, and III. livestock, forestry, fishing, hunting, plantations, orchards, and allied activities

Table 2.2 Comparison of the occupational characteristics of rural Delhi with other regions, 1991

	<b>Rural Delhi</b> <b>(in 1,000s)</b>	Urban Delhi (in 1,000s)	Rural Sonapat (in 1,000s)	Rural India (in millions)	Urban India (in millions)
Total population	<b>949</b>	8,472	577	629	218
Workers	<b>273 (29%)</b>	2,694 (32%)	172 (30%)	225 (36%)	65 (30%)
Agric. workers**	<b>46 (17%)</b>	35 (1%)	105 (61%)	186 (83%)	9 (14%)
Non-agric. workers	<b>226 (83%)</b>	2,659 (99%)	67 (39%)	39 (17%)	56 (86%)
Area (km <sup>2</sup> )	<b>783</b>	685	1,349	n.a.	n.a.

Sources: Census of India 1991, Observer 1998

\* Including the census towns

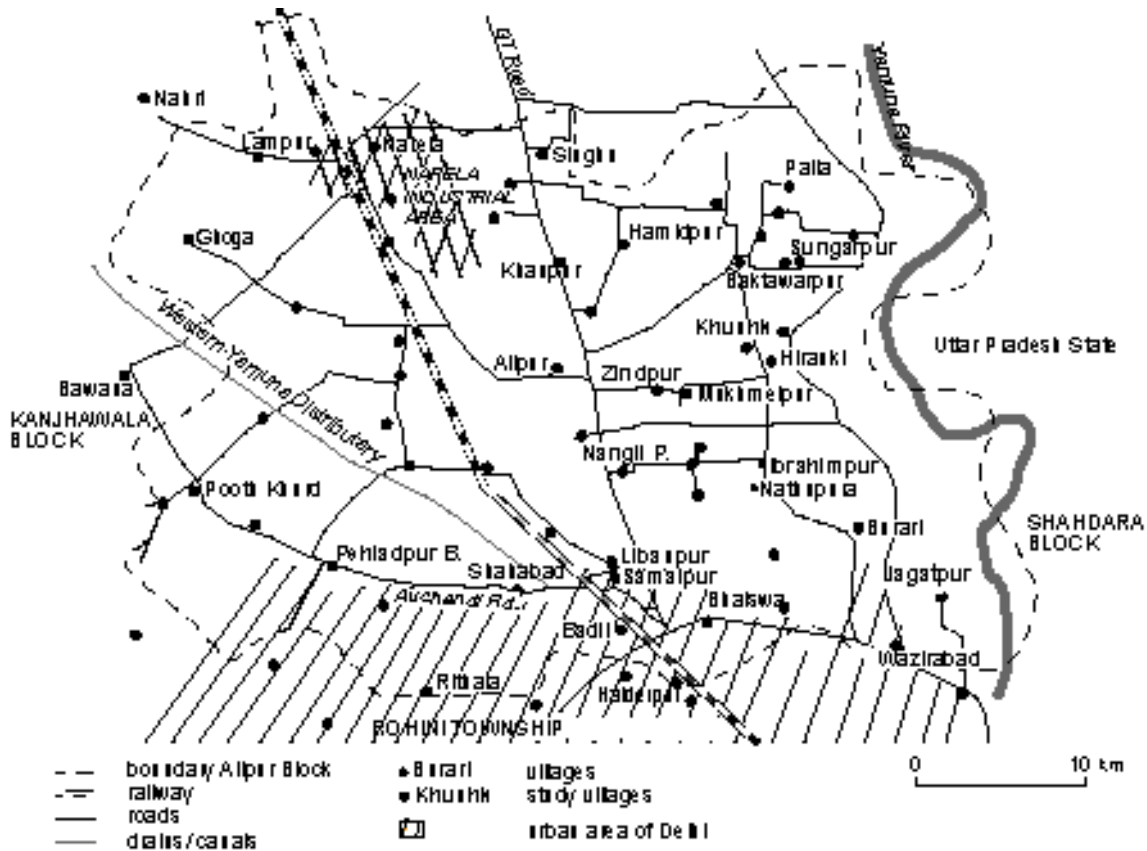
### 2.3 Alipur Block as part of Delhi's rural-urban fringe

In total, Alipur Block covers an area of 221 km<sup>2</sup>, corresponding with dimensions of approximately 15 by 15 km. Alipur Block has fertile soils, especially near the river, and the quality of groundwater also makes the area quite suitable for cultivation. The main road running towards Amritsar (GT Road) separates the block into an eastern and a western part. The eastern part has relatively more land under intensive cultivation and yields better harvests, including horticultural crops. The most important service centres are Burari and Bakhtawarpur. The western part contains more urban sprawl, and the soils are less fertile in some places. The town of Narela (50,000 inhabitants) is growing rapidly. Smaller towns include Alipur and Bawana (just across the border in Kanjhawala Block but nevertheless important as a service centre for Alipur Block as well). The railway has little importance for the villages (there are no stations) but does have considerable meaning for Narela, where there is a large grain market. A more detailed account of land use in Alipur Block is provided in Chapter 3.

There are 52 census areas in Alipur Block. Most census areas coincide with village settlements, although there are three uninhabited villages and four census areas that have more than one settlement. Since 1991, four census areas have been recognised as census

towns (see Glossary). Administratively, Narela is administratively part of urban Delhi. Consequently, Narela is not included in the figures for Alipur Block.

Figure 2.2 Topographic map of Alipur Block



The census figures for Alipur Block are similar to those for rural Delhi as a whole, although the figure on agricultural occupation is higher. There are many villages in Alipur Block where agriculture is still quite important. There is some difference between the figures, depending on whether the census towns are included or not. For the calculation of the figures for rural Delhi as a whole in the previous paragraph, the census towns are included because they show a decided mix of rural and urban characteristics at the time of the census.

The staged model of urbanisation of villages (see Section 1.2.1) is applied to Alipur Block, using village-level data from the census. The model derived from Ramachandran (1989) does not provide exact threshold values for land-use and occupational characteristics at the village level. Lacking a basis in the literature, some arbitrariness of key values is inevitable. In most of Rural India, figures well over 70 per cent are common, down from figures over 80 per cent in the 1970s (Visaria and Basant 1994, p. 16). Furthermore, adjacent rural Sonapat District still scores substantially higher than 50 per cent (71 per cent in 1991). The threshold value of 50 per cent therefore indicates a



clear impact of urbanisation. Concerning land use, the threshold values are determined solely according to the reality of Delhi's rural-urban fringe. After verifying the values in the villages in Alipur Block, it could be concluded that when the percentage of rural land drops below 50 per cent, the villages have much urban influence on their land; when the percentage is below 20 per cent, rural land becomes almost insignificant. The threshold values thereby create clusters in Alipur Block according to stages of urbanisation. Summarising the above leads to clusters of villages as shown in Figure 2.3. The clusters were created according to the following threshold values for the stages from rural to urban:

Figure 2.3 Operationalisation of the stages of urbanisation

Stage	Agricultural occupation	'Rural land'*
1. Rural:	> 50% of total workers and	> 50% of the total land
2. Occupational change:	< 50% of total workers and	> 50% of total land
3. Increasing urban land-use:	< 50% of total workers and	20-50% of total land
4. Urban:	< 50% of total workers and	< 20% of total land

\* Calculated as total of 'cultivated area' (irrigated + unirrigated land) and forest according to the Census of India 1991

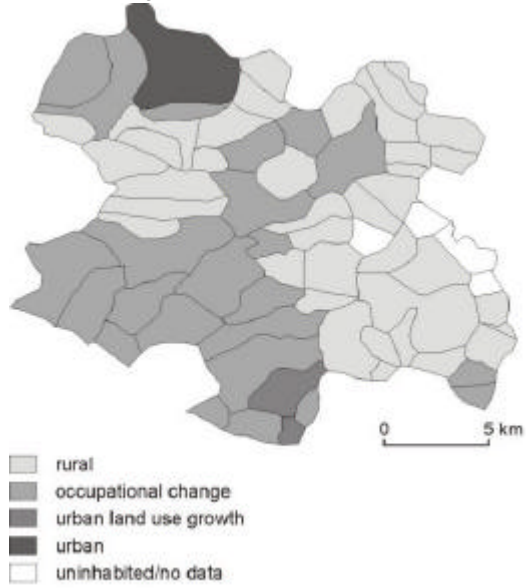
But what about villages scoring below 50 per cent rural land and above 50 per cent agricultural occupations? This does not occur in 1971 or in 1991. Consequently, the data roughly confirms Ramachandran's hypothesis that occupational change precedes land-use change.

In the rural-urban fringe, the villages of type 2 and 3 dominate in 1971 and 1991 but stage 3 is more prevalent in 1991, while various villages have entered stage 4 by then. Seven villages are completely urbanised.

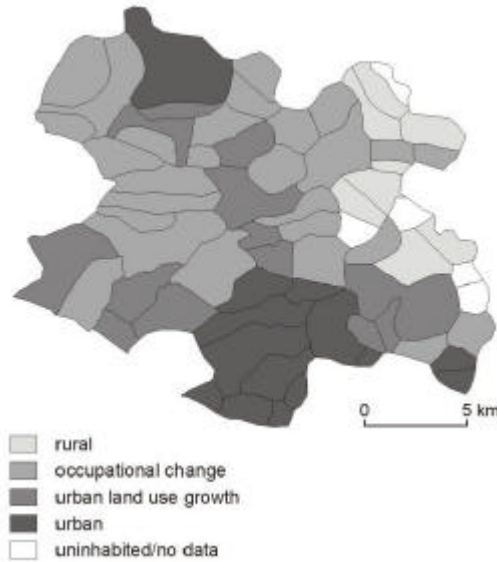
Alipur Block therefore clearly constitutes a rural-urban fringe according to the staged model of urbanisation. The selected study villages described in the next section show substantial differences on the rural-to-urban scale. It should be noted that the study cannot fully rely on the census data. The reason is that many inaccuracies are present due to shortcomings in the enumeration of the census and the specific characteristics of the rural-urban fringe. For example, it was found that many people who are listed as 'farmers' actually combine their agricultural employment with non-agricultural sources of income (described in more detail in Chapter 5).

Figure 2.4 Stages of urbanisation in Alipur Block

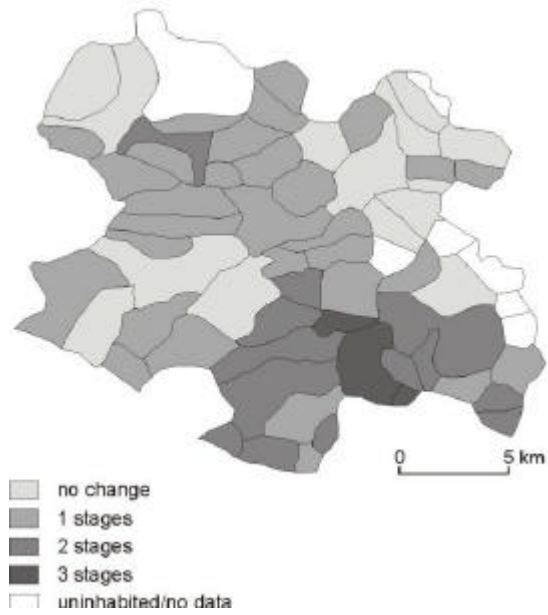
2.4a Stages of urbanisation in 1971



2.4b Stages of urbanisation in 1991



2.4c Changes in stage of urbanisation from 1971 to 1991



2.4d Location of the study villages



## 2.4 The study villages from rural to urban

### 2.4.1 The village clusters of stages of urbanisation

The variation between the villages in Alipur Block, including those urbanised between 1971 and 1991, is large. For the village-level study, it was necessary to select a few representative settlements. Five main criteria were used. First, the selected villages have to represent the clusters as distinguished above. Second, there is a preference for smaller villages with a large traditional farming population, whereby a change in livelihood could be expected. Third, an attempt was made to select villages with different caste structures. Fourth, different characteristics were sought in terms of location relative to the main roads and types of local land use. Fifth, there were a few practical considerations such as availability of local contacts and access from where the researcher resided. This led to the final selection of villages.

Among the study villages, the only one that in 1991 was still in stage 1 is Khushk. But it can be argued that it has already entered stage 2 since Jagatpur, Sungarpur, and Zindpur clearly entered stage 2 between 1971 and 1991. Zindpur and Ibrahimpur are developing fast. Exploratory visits reveal that they are on the brink of entering stage 3. Nangli Poona is in stage 3, having undergone widespread transformation of occupations and land use between 1971 and 1991. It is presently developing into an urban village. Pehladpur Bangar is a large village and had already been through substantial occupational change before 1971. The village selected to represent stage 4, Samaipur, does not appear in the socio-economic analysis of Chapter 5. Instead, it will appear in Chapter 6 in the discussion about living conditions.

The distances to the city (see Tables 2.3 and 2.4) are calculated by taking the shortest route by road. In 1971, the edge of the contiguous urban area was close to the Ring Road; in 1991, it was near the Outer Ring Road, which was constructed in the 1980s. Therefore, the tables give these distances as a measure of access to the city.

There are two reasons for the discrepancies between the census data and the figures from the basic household survey as presented in Chapter 5. First, there is a gap of six years. Second, the basic household survey applies different definitions for occupational characteristics (taking the household level instead of the individual level).

The village maps illustrate the local setting in terms of land use. Urban expansion has affected all villages except Sungarpur and Khushk. The descriptions of the villages in the next section give more details about the rural-to-urban transformation in terms of the land that is occupied by urban functions. The history of the villages is also described as far as necessary to give a comprehensive overview of the settlement and to interpret the research results.

Table 2.3 Position in the stages of urbanisation of the study villages, 1971

Stage	Rural										Occup. change		Rural	Occup. change
	Khushk	Jagatpur	Sungarpur	Zindpur	Ibrahimpur	Pehladpur B.	Nangli Poona	Samaipur						
Total population	1,223	1,864	534	491	353	3,626	848	3,003						
Work force	261 21%	486 26%	130 23%	171 35%	89 25%	965 27%	178 21%	933 31%						
Agric. workers	204 <b>78%</b>	283 <b>58%</b>	91 <b>70%</b>	103 <b>60%</b>	78 <b>88%</b>	287 <b>30%</b>	131 <b>74%</b>	289 <b>31%</b>						
Area (in ha.)	321	325	259	228	269	662	258	543						
Rural area	288 <b>90%</b>	249 <b>77%</b>	74 <b>29%</b>	151 <b>66%</b>	181 <b>67%</b>	515 <b>77%</b>	171 <b>66%</b>	315 <b>58%</b>						
Outer Ring Rd.	14 km	7 km	22 km	12 km	9 km	11 km	8 km	5 km						

Source: Census of India 1971

Table 2.4 Indicators of urbanisation of the study villages, 1991

Stage	Rural stage		Occupational change						Urban land use growth				Urban
	Khushk	Jagatpur	Sungarpur	Zindpur	Ibrahimpur	Pehladpur B.	Nangli Poona	Samaipur**					
Total population	2,450	4,793	1,057	974	2,232	4,832	2,090	15,000					
Work force	732 24%	1,181 25%	273 24%	258 27%	657 29%	1,423 29%	562 26%						
Agric. workers	420 <b>57%</b>	454 <b>48%</b>	128 <b>47%</b>	94 <b>36%</b>	200 <b>30%</b>	305 <b>25%</b>	98 <b>17%</b>	n.a.					
Area (in ha.)	321	325	259	228	296	662	258	n.a.					
Rural area	234 <b>73%</b>	189 <b>58%</b>	90 <b>35%*</b>	182 <b>80%</b>	135 <b>46%</b>	57 <b>30%</b>	105 <b>41%</b>	n.a.					
Outer Ring Rd.	10 km	3 km	18 km	8 km	5 km	7 km	4 km	1 km					

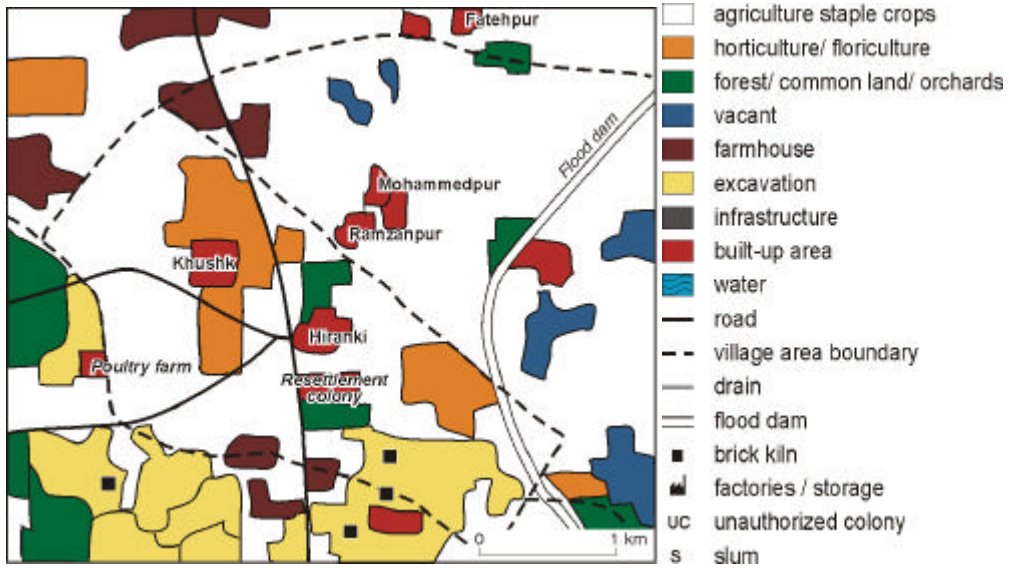
Source: Census of India 1991

\* This figure is biased due to location at riverbed. Concerning land use, the village does not show any significant urban land use growth

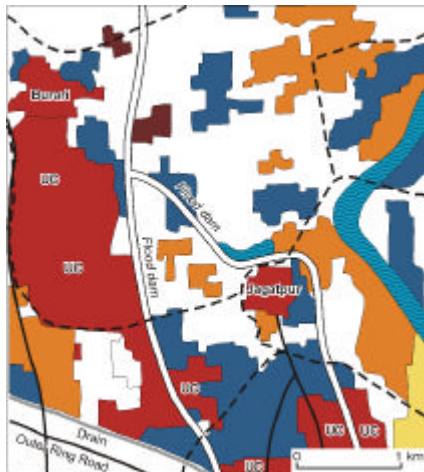
\*\* The village has been reclassified according to urban neighbourhood categories, making it impossible to extract the figures. The population figure is an estimation

Figure 2.5 The study villages

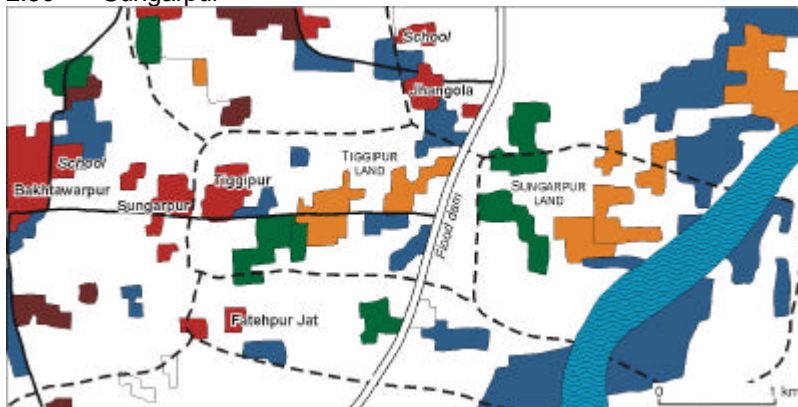
2.5a Khushk



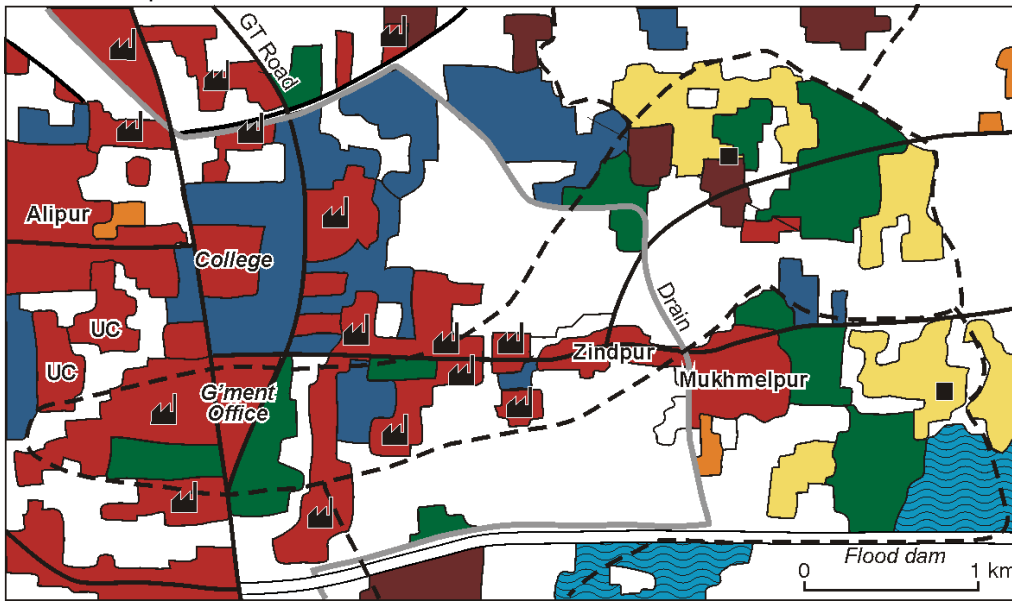
2.5b Jagatpur



2.5c Sungarpur



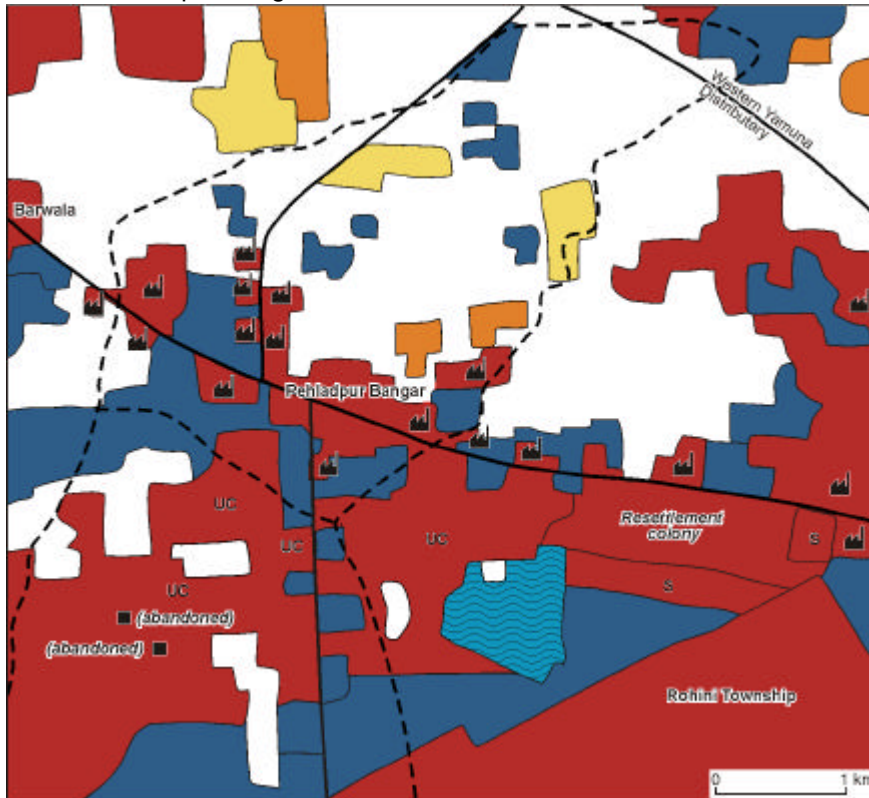
2.5d Zindpur



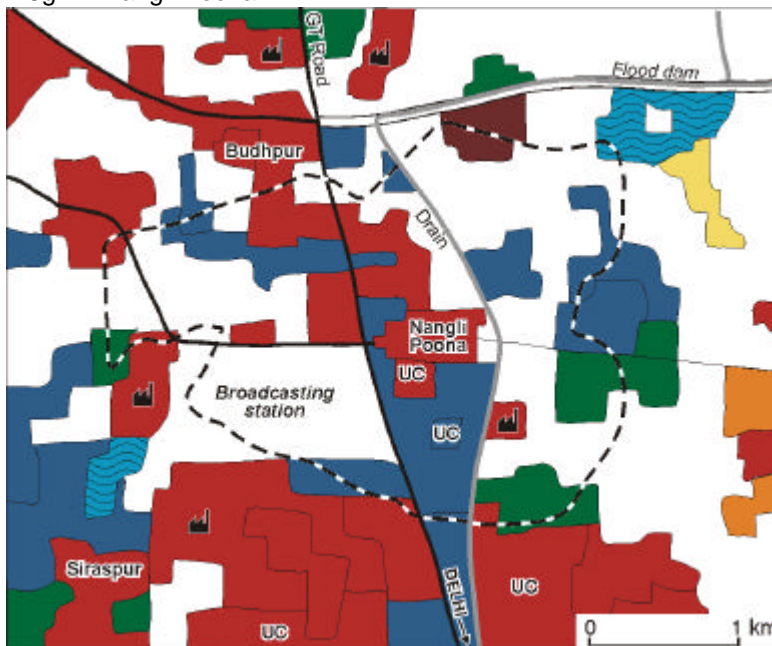
2.5e Ibrahimpur



2.5f Pehladpur Bangar



2.5g Nangli Poonia



(For Samaipur, see Figure 6.2 and 6.3)

#### 2.4.2 A village still in the rural stage?

##### *Khushk*

A peculiar event in the history of Khushk is that the village was relocated in 1911 to its present place when the British *Raj* established New Delhi as the capital of India. Its former location was very near the presidential palace, a place still known as Khushk Road. With the compensation money, the Khushk villagers bought land from Hiranki farmers for settlement and agriculture so they could continue with their original livelihood of growing vegetables.

Khushk is mainly (85 per cent) inhabited by households of the Saini caste (a horticultural caste, neither high nor low in status); 15 per cent of the inhabitants are of lower castes. An uncounted number of seasonal migrants live in and around the village. In total, Khushk has approximately 700 inhabitants (the data for Khushk in Tables 2.3 and 2.4 include the village of Hiranki, which is part of the same census area). Hiranki is also an agricultural village; therefore, its inclusion is not expected to distort the relative occupational and land-use figures seriously. The adjacent villages of Zindpur and Mukhmelpur show much more urban influence on their land. The farmers of these villages are selling land to outsiders on a massive scale. The farmers of Khushk wish to resist the temptation. Many households are dependent on cultivating high-value crops for both income and employment. The Sainis take pride in their agricultural lifestyle. They manage to achieve high standards from the cultivation of relatively small plots of land. A typical detail is that no Khushk landowner has ever leased out land for excavation activities of brick kilns. Continuous agriculture is considered too essential for the Khushk farming community. The relatively strong caste homogeneity is probably one of the reasons for the comparatively even distribution of land as well as for the success of horticulture and agriculture. Some farmers who need more land lease fields from landowners in neighbouring villages. Ownership of tractors is widespread; nevertheless, the types of crop require a high labour input. Many farmers have small trucks to transport agricultural products to the Azadpur vegetable market in the city. Another type of agricultural enterprise is the large poultry farm owned by a villager from Khushk.

During the *rabi* (winter) cropping season, the cropping pattern is similar to that of other villages (mostly growing wheat). During the rest of the season, however, the Khushk farmers manage to cultivate at least two more crops of vegetables or flowers. The good quality of soil and the availability of water for irrigation enable the farmers to harvest high yields. The water is slightly saline but good enough for most crops. Groundwater is sufficient, due to the proximity of the Yamuna River. As in some other research villages, the construction of a higher levee around 1980 reduced the risk of flooding considerably, which was favourable for investments in agricultural infrastructure.

The increase in the absolute number of persons working in agriculture (see Table 2.3 and 2.4) is indicative of the expansion and intensification of the labour-intensive sectors of horticulture and floriculture. Despite the strong agricultural orientation, commuting for government jobs and other service activities is also very common, particularly among the landless households. The few lower-caste households in Khushk, owning no land, are employed in government services, transportation, industrial work, and trade. Migrants are hired to do most of the agricultural labour. The majority of them are seasonal workers who are not permanently settled in the village. Observation of the villagers' dwellings



and other assets indicates that commercial agriculture and urban service activities have brought considerable wealth to Khushk.

Few non-agricultural activities are found in the village: there is one factory of oil lamps and one large repair shop for agricultural equipment. There are four shops in the village, all general stores for daily household needs.

With respect to the provision of urban amenities, it seems that the government has forgotten the village. Tap water connections have not yet been installed, while the groundwater is not potable. Consequently, the villagers collect drinking water at neighbouring Hiranki. Bus services are also very infrequent, although the villagers can walk to nearby Hiranki or Zindpur to get the bus to Delhi.

### 2.4.3 Villages in the stages of occupational change

#### *Jagatpur*

The village of Jagatpur has a history of frequent flooding. Due to a serious flood, the village had to be relocated to its current place in 1952, explaining the grid pattern of the streets. A levee was constructed in 1978 to protect the settlement from the river. Jagatpur is quite a large village. Its most remarkable feature is the enormous number of cattle. Close to 80 per cent of the population is of the Gujjar caste, originally a cattle-herding community. A little over 12 per cent of the original households belong to lower Hindu castes and 8 per cent are Muslims. Furthermore, there are a few other high-caste households (Brahmins, Banias), barely exceeding 1 per cent.

Jagatpur is located very near urban Delhi but lies slightly off the route. Therefore, the village land does not show much urban influence. Originally, the villagers of Jagatpur had little access to agricultural land. They have managed to expand their dairy business, and over the past few decades they have acquired more agricultural land from surrounding villages. Most of that land is located in the floodplain and was therefore relatively cheap. This flood-prone land can hardly be used during monsoon, but in other seasons it provides wheat and fodder for cattle. Other landowners lease out land to villagers from the Muslim community, who cultivate pumpkins and melons in the sandy parts of the dry riverbed.

There are no factories in the village and only a few repair shops. Shops selling daily household items are plentiful, as are shops selling building materials. Although dairy farming is still important, jobs in government service and commerce have become common as well. Often both activities are combined in the same household, sometimes being carried out by the same person. The Jagatpur residents are proud of being hard-working people: rearing cattle in their village, bringing milk to the city, and also working in a government job.

Migrants are not as numerous as one might expect on the basis of the location of the village. The main reason is that cattle-rearing takes up too much space in the village residential area, so landowners have no desire to rent out property to tenants. A small number of individual migrants reside in the village, doing labour related to the cattle. Many better-off households now seek to acquire plots and build new houses between Wazirabad and Jagatpur. The high demand for residential space may therefore be explained by the strong orientation on dairy farming.

### *Sungarpur*

The dominant community (65 per cent of the original population) is a type of Rajput caste that has been specialising in cultivation over the last centuries. Traditional labour and artisan castes form the rest of the population. There are only few residing migrants, although many seasonal migrants work on the fields in the planting and harvesting seasons.

Sungarpur is a small village with no significant amount of urban expansion on its land. The villagers have not sold any of their land for urban purposes. Most of the land is used for agriculture, specifically for the production of staple crops (wheat, rice, and fodder). Horticulture and floriculture are increasingly common, though not to the extent found in some other highly specialised villages such as Khushk.

Before 1976, Sungarpur was located very close to where the river now runs. In 1976, the Yamuna River flooded the original settlement. The village was then moved to its current site to the west of the village of Tiggipur. The agricultural land owned by Sungarpur farmers still remains beyond Tiggipur, close to the Yamuna; the farmers even own some land on the other side of the river. At least half of the land is located in the floodplain and therefore only cultivable in *rabi*. Part of that land cannot be cultivated at all. Since the construction of the levee, the area on the safe side of the dam (about one-third of the total village land) is very intensively cultivated, much of it with vegetables. The rest of the land is only marginally cultivated or left unused. Consequently, the census figures show a low percentage of land covered by agriculture and forest, although this is not due to urban expansion.

According to the figures on Sungarpur's occupational characteristics, agriculture has increased considerably in absolute numbers but has decreased in relative terms (see Table 2.3 and 2.4). It is a small village and has no industry. There are a few very small shops selling groceries to the villagers. Local non-agricultural employment is almost absent except for a few shops. Many Sungarpuris have jobs in nearby Bakhtawarpur village (e.g. shop-keeping and construction) or in Delhi. Employment in the government is also common.

### *Zindpur*

The dominant original community, constituting about 60 per cent of the original population of Zindpur, consists of the Jats. They are a cultivating community commonly found in the wider region. People of lower castes (38 per cent) are relatively numerous as well, while only one household belongs to a non-Jat high caste. Furthermore, a large number of migrants have settled in and around Zindpur.

Zindpur is a small village with a mainstream cultivation pattern. Traditionally, its farmers cultivated staple crops (wheat, fodder, and more recently rice). About 40 per cent of the village land has already been sold by the farmers and is used for urban purposes. As an occupation, agriculture is rapidly losing importance here: no more than half of Zindpur's land remains under cultivation, and part of that is leased to Khushk villagers. During the last 20 years, landowning households have frequently leased out land to brick-kiln operations. Over the last five years, all brick kilns have disappeared from Zindpur's agricultural land. Loam excavations for brick kilns have seriously affected the elevation of many fields. Nevertheless, especially in the western part of the village, the land has

become very valuable; it is in high demand for industrial sites and storehouses. Elsewhere in the village, land is in demand for farmhouses.

Changes in this village occur very rapidly; the census figures of 1991 are already outdated. Only a few households still consider agriculture as their most important source of income. The dynamic situation of Zindpur's agricultural land reflects the diverse orientation of the villagers. Agricultural employment has decreased in absolute terms and has dropped sharply in relative terms. An even larger part of the population than in other villages is in government service, mostly in urban Delhi. Relatively much agricultural land is left unused, as the villagers have much more lucrative options for their livelihood.

Many economic activities are present on Zindpur land. There are 20 storage houses, eight industries (e.g. plywood and metal scrap), 15 shops of various kinds, five tea stalls, and seven repair shops. Three farmhouses are under construction. All communities are now represented in government service, but local services, such as tailor shops, tea stalls and retail also offer non-agricultural opportunities.

#### 2.4.4 Villages in the stage of increasing urban land use

##### *Ibrahimpur*

In this village, there are two dominant castes. The larger of the two is the Tyagis (35 per cent), which is a cultivating caste originating from the Brahmins. The other dominant caste is the Brahmins (30 per cent), who are also cultivators and own considerable acreages. Other castes include a range of lower artisan, service, and labour castes; all of them fall into the category of Scheduled Castes (SC) and Other Backward Castes (OBC). There are few migrants residing in the village, but a large number live in adjacent colonies. It is hard to estimate how many live there, but there are certainly thousands.

Agriculturally, the cropping pattern resembles that found in Zindpur and Nangli Poona (described below). Like Sungarpur, some of the land in Ibrahimpur is situated near the riverbed and cannot be cultivated during *kharif* (the summer growing season). Unlike other villages, Ibrahimpur has relatively many orchards and nurseries owned by the villagers themselves and people from nearby Burari. Migrant workers do the daily labour at orchards. Despite the growth of urban land use in the village, the census data report a higher number of people working in agriculture. This may be an exaggeration, reflecting unemployment among the original farming families. Many people also work in the city in government jobs and private trade or construction activity.

Ibrahimpur has sold a little over half of its land to outsiders, although some of that land is still cultivated. Much of the land has become residential in the form of unauthorised colonies. Farmhouses, factories, and storehouses have also been built on Ibrahimpur's land. However, the rate of development is slower than in Zindpur. Much of its agricultural land, especially that lying close to the river, is not in high demand for urban use.

There are four factories in and adjacent to Ibrahimpur (a soap factory, a chewing tobacco processor, a small scrap-iron recycling plant, and a cardboard box manufacturer) and eight factories of varying types on its former agricultural land. A few storehouses, five farmhouses, and a large temple under construction are situated along the road to Hiranki.

### *Pehladpur Bangar*

The original population consists of Jats (30 per cent), Brahmins (30 per cent), both of which are dominant castes, and 40 per cent of labour and artisan castes. The migrant population, which currently outnumbers the original population, lives mainly in rented accommodation in the village, on the premises of factories, and in unauthorised colonies. Migrants arrived in Pehladpur Bangar at an earlier stage than they did in other villages, since there have been factories in the village since the late 1960s.

Pehladpur Bangar lies along the busy Auchandi Road, which divides the settlement and its agricultural land into two parts. A little more than half of all agricultural land has already been sold to outsiders. On the north side, all land, except for the immediate roadside, is still used for agriculture. The harvests are good, and the cropping pattern is similar to that in Zindpur and Nangli Poona: wheat in the winter, fodder and paddy in the summer, and some leased-out land used for horticulture. The groundwater is of much poorer quality than in the other villages, but the nearby canal (Western Yamuna Distributary) supplies plenty of good irrigation water for the northern side of the village. At the southern side of the village, agriculture has virtually disappeared to make way for unauthorised colonies. The degree of residential use is still low. Most of the land is vacant and has been plotted for future construction, in anticipation of higher land prices. There is a ban on transactions or conversion of agricultural land in Pehladpur. According to the land-use plans, this ban is also valid in the other villages. However, it is more effectively enforced in Pehladpur because it is part of the area where Rohini Phase II is to be built in the near future. The ban makes it difficult for people to colonise agricultural land and convert it into residential areas. In the already colonised areas, however, illegal land transactions are still going on. It is not yet certain exactly when the DDA will acquire the remaining agricultural land from the villagers, but the announcement has been published in a local newspaper (Navbharat Times 14-9-1997). These southern fields were never very fertile, and the groundwater was too saline. The Pehladpur farmers sold that land at the first possible opportunity.

The occupational transformation the villagers started relatively early. Many are shopkeepers, many are civil servants, and the transport sector is big. A very large source of income is rent, which people derive from renting out factory compounds and housing for migrants, or from leasing out agricultural fields.

### *Nangli Poona*

The dominant landowning community of Nangli Poona consists of the Jats. Originally, the Jat population constituted a majority, but now the number of migrants is just about equal to that of the original population. Non-dominant original communities include 40 per cent local low castes and 5 per cent non-dominant high castes (Brahmins and Banias). Among the migrants, most are from distant poor rural areas. Some of them who have lived in Delhi for a number of years bought a plot in Nangli Poona after saving some money. Most of them are poor, though a few could be considered lower-middle class. The owners of the local factories do not live in the village.

Urbanisation has a long history in Nangli Poona. The broadcasting station, a large area with transmission masts, dates from 1936. At that time, the government acquired about 20 per cent of the agricultural land of the village. Another important historical event is the land reform act of 1952, which gave the lower caste households legal access to the

commons. The allocation of land to landless households in 1974 stirred up great controversy in the village. The policy was implemented. However, many landless households sold their allotted land for a giveaway price to the landowning families after alleged intimidation. The construction of the flood drain in 1978 was important for the protection of the agricultural fields east of the settlement, securing the investments in the course of the *green revolution*.

Of the total area of the village, 40 per cent remains agricultural land, 10 per cent is not used or is vacant, 8 per cent is the original village settlement, 10 per cent covers the extension of the village, and 32 per cent is used for industry, commercial activities, and infrastructure. The agricultural land is intensively cultivated, mainly tenants taking the land on lease. In the winter, wheat and vegetables are the main crop; in the summer the main crops are paddy, fodder, and vegetables. A relatively large proportion of the land is leased out to villagers from the nearby village Khushk and Khushk Kurd (Saini villages similar to Khushk) and to migrant 'suitcase farmers'. This results in a relatively high proportion of cultivated land under horticultural crops.

The adjacent highway ensures a good connection to Delhi, and public transportation is frequent. Industrial and residential development around the original settlement gives Nangli Poonaa a semi-urban look. Industries include plants processing agricultural produce (the oldest ones are lentil and rice factories), iron factories, chemical plants, and assembly works. The storehouses are located on formerly agricultural land. The price of land near the highway is extremely high.

#### 2.4.5 An urbanised village

##### *Samaipur*

At present, Samaipur village is completely urbanised. It is used here to illustrate what situation may occur in urbanising villages in the future. A detailed description of Samaipur is given in Section 6.3.

## 2.5 Epilogue

An exploration of the area and specific study villages revealed that the original population generally remains in the villages. Therefore, urbanisation apparently does not cause displacement of people, and the effects can be measured by conducting a population survey in the villages. Even when compensation rates for land acquisition was low, e.g. during the Emergency of 1975, the great majority of the population remained living in the village. In contemporary Delhi, this stability may be explained by the following four situations. First, India is a poor country. It would not be wise to destroy sizeable housing stock in urbanising villages – nor can the country afford to do so. Second, the villages are located in areas where rich farmers are part of influential communities. They would not benefit from being displaced and therefore successfully resist any such attempt. Third, there is no place to resettle the villagers elsewhere in the already highly populated Indo-Gangetic plains. Finally, there is no socio-economic incentive among the villagers to move to a rural area. This situation is quite unlike that

which Hardoy et al. 1992 observe for Jakarta, where villagers are displaced on a large scale as a consequence of urbanisation.

This exploration corroborates Ramachandran's (1989) assertion that commuting is crucial to the livelihood of the villagers. However, a staged model of the villages undergoing urbanisation tends to underestimate the unique features of individual villages. This is true for Jagatpur, which is very close to the city limits but nevertheless continues to focus on agricultural income. Some villages can enter the urban stage directly, skipping stages, when the government suddenly acquires all the land. This is not the case in the study villages, however.

As the data and the descriptions of the villages show, the rural-urban fringe is heterogeneous. Although the census records on occupation are not particularly reliable, their biases are fairly consistent. Villages were selected to represent of common characteristics as well as a variety of profiles of the villages in the rural-urban fringe, as defined above. The *desakota* area (McGee 1991) comprises a larger metropolitan region, which is not covered in this study.

The next chapter is concerned with land use. It describes the land-use pattern observed in Alipur Block. The input from remote sensing, as explained in the next chapter, was vital for generating the village maps shown in Figure 2.5. The contextual information presented in this chapter also provides crucial background material for the analysis of the livelihood pattern in Chapter 5. That analysis refers to historical, communal, and other site- and situation-specific circumstances described in this chapter.