

Housing Needs in New Suburbs of Indian Metropolis

Case Study of Kothrud, Pune

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This article, a survey of three localities in a rapidly expanding suburb of Pune, differentiated classwise, illustrates the segmented utilisation of livelihood opportunities, services and facilities by the residents of the region. More importantly, the article attributes the suburb's robust growth to its timeliness in meeting the emerging housing needs of the upwardly mobile middle class living in the heart of the Pune city and also suggests, that its relatively low infrastructural cost may be an incentive attracting the retired members of middle class households of Mumbai.

AS Indian cities continue to expand at a seemingly inexorable pace in terms of population growth and physical settlement on the land, it is useful to obtain insight on the mechanisms through which various social strata in this rapidly growing urban community are meeting their needs for housing, physical infrastructure and a good quality of life. This paper reports on some of the findings from a study executed by the authors in Kothrud, a rapidly expanding suburb of Pune, which sheds some light on this process.

PUNE'S GROWTH: A BACKGROUND

Located in Maharashtra, one of the leading states in India with respect to industrialisation and urbanisation, the city of Pune provides an excellent location in which to study the consequences of rapid urbanisation. Its last 20 years of rapid expansion may foreshadow the urbanisation to be anticipated in other similarly industrialising cities in India. Situated along a growth corridor stretching 120 miles (180 kms) to the mega city of Bombay, Pune grew relatively slowly until 1941. After-partition refugees from Pakistan were settled in camps and colonies around Pune and increased defence-related work during the second world war helped to swell the population of the city as seen in 1951. With the Panshet dam disaster of 1961, when houses in the wards of Pune on the right bank of Mutha were washed away, people were forced to move out of the old core of the city and towards the government-formed colonies in Erandavana and Parvati. Subsequently, some of these families shifted to the newly forming suburbs in Kothrud and the south along the Pune-Bangalore road. In addition,

since legislation had been passed to prohibit the establishment of new industries in Bombay, industrial estates were established around Pune in Hadapsar, Bhosari, resulting in growth of industries and related housing around the city. By 1971 Pune had expanded both spatially (Figure 1) and had achieved metropolis status with a population of 1.14 million people. In the following decade metropolitan Pune added more than half a million people to reach a population of 1.69 million in 1981, and by 1991 it was a city of 2.49 million people. The 1991 Census established Pune as the eighth largest and one of the fastest growing metropolises in India.¹ Pune thus offers a good case study of how, as cities in India continue to grow, various populations assimilate and acquire the necessities of urban habitat.

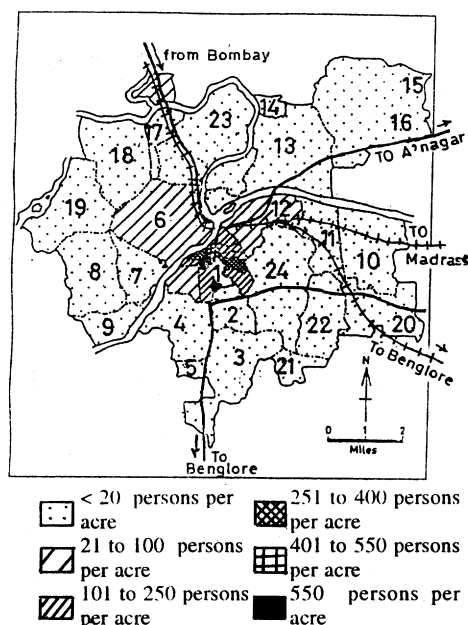
KOTHRUD IN THE CONTEXT OF OVERALL GROWTH OF PUNE

In our initial efforts to obtain a picture of Pune's overall growth, we found that city data regarding housing starts, city infrastructure provision in terms of sewer, water, roads and lighting, was not readily available from the Pune Municipal Corporation (PMC). The data in the corporation records which were made available to us were both incomplete and in a format that did not allow for disaggregated wardwise analysis. Our preliminary analysis therefore utilised census information on population growth wardwise in the city. This mapping of population data from the census required re-calculation to reflect changing ward boundaries over the period under study.² It revealed that the growth of Pune's population during a period of rapid suburban development

between 1971 and 1991 (illustrated in Figures 1b and 1c) was concentrated along four growth corridors stretching along road connectors out of the city (Bombay-Pune highway, Pune-Satara road, Pune-Sholapur road, and Pune-Nagar road). It was also occurring along Karve and Paud road to the south-east following the availability of prime agriculture land which was flat, accessible, and available for private sale and purchase. Other surrounding areas in the city periphery were unavailable for private sale and urban settlement as they are earmarked for military and defence use.

Initially in our research design we wanted to obtain specific empirical information regarding location and trends of housing construction in the city and to correlate this information with that of investment by the PMC in physical infrastructure such as sewer, water, electricity and roads. The objective being to see how demand for and supply of these amenities were interrelated. However we were unable to get disaggregated, wardwise data on numbers of housing starts from the PMC or on any aspect of infrastructure investment. As we were able to obtain information on the registration of co-operative housing societies for the city from the registrar of co-operatives we mapped this information to provide us some indication of the extent and location of formalised housing construction in the city.³ Since much of the new construction of housing units is occurring in the organisational framework of a co-operative, we thought that the information on co-operatives would provide us some substitute comparative information on shelter construction in various wards of the city. Our findings (Figures 2c and 2d) provide a time series

FIGURE 1a: POPULATION DENSITY IN PUNE CITY (1961)



- (1) Old Wards, (2) Gultekadi, (3) Bibavewadi, (4) Parwati, (5) Dhanakawadi, (6) Shiwajinagar, (7) Erandavana, (8) Kothrud, (9) Hingane, (10) Mundhawa, (11) Ghorpadi, (12) Bund Garden, (13) Yerawada, (14) Dhanori, (15) Lohagaon, (16) Wadgaon Sheri, (17) Bopodi, (18) Aundh, (19) Pashan, (20) Hadapsar, (21) Kondhawe, (22) Wanowri, (23) Kirkee Cantonment, (24) Poona Cantonment.

mapping of housing co-operatives registered in the city of Poona from 1961 to 1991. As these figures illustrate, during the 1981-91 period Kothrud area experienced the greatest pressure in terms of construction of new housing co-operatives.⁴ Correlating the registration of housing societies in Pune with the number of tenements intended to be built in these registered housing societies provided us additional indication as to the density of settlement, as reflected in co-operative housing units, experienced in the city overall. Figures 3c and 3d illustrate that the Kothrud area experienced the greatest density of housing units constructed in the form of formally registered housing co-operative construction.⁵

The growth of Pune has resulted in increased land values as declared formally to the city administration. The information regarding the land deals is noted in Figures 4c and 4d.⁶ Understanding that these declared figures of land costs are generally below actual prices paid, we obtained from interviews with builders and landvaluers in the city their estimates of the land prices actually paid for land across the city. These are as illustrated in Figure 4e which indicates that land prices throughout the city core as well as its

periphery have risen and that they are twice or thrice the values formally registered with the sub-registrar.⁷ This mapping and analysis of data that were available to us on housing and settlement although reflecting changes only in activity in formal sector housing, empirically corroborated that the Kothrud suburb was indeed an area of intensified activity. It seemed clear that given the lack of available overall data, a more detailed understanding of the process of housing consolidation was warranted and might reveal the assimilation process. Based on our preliminary analysis of overall growth patterns of Pune city and given that the suburb of Kothrud had been singled out for attention in the media and in the *Guinness Book of Records* as one of the most rapidly urbanising areas in Asia, we decided to concentrate our study on this suburb.

Our geographical analysis had revealed that, as is typical of other rapidly growing cities in India that have room to expand in the periphery, a great deal of the new growth in residential construction in Pune has occurred around main roads leading out of the city. Has this resulted in residential suburbs from which workers were commuting considerable distances to work, we wondered? And given that most roads are overloaded during peak hours how were these commuters managing their journey to work? Suburban development is of particular interest as new growth at the periphery can both accommodate new migrants and allow those in the congested inner city to move out to more conducive environments. Who, we wondered, were living in the suburbs, where had these residents, come from, and what were they finding so compelling as to stay in the suburbs? Suburban growth is also worth studying because such new settlements offer an opportunity for city administration to plan and guide growth. They offer the potential to provide proactively for amenities as well as for rationalising the technical planning of needed physical infrastructure such as roads, water and sewer lines so as to create safe and clean residential environments. Although this opportunity to create more habitable residential environments is often lost from either the inability, or the lack of will of the planning, implementing, and policy-making mechanisms which operate at the city level, we felt that an examination of the processes of growth and physical infrastructure development of the last two decades in the Kothrud area would serve to shed some light on the internal dynamics of this phenomenon.

THE KOTHRUD SURVEY

Little empirical information is readily available in the public domain which reveals details of the needs of residents in newly expanding parts of the city such as Kothrud. Little is documented in any detail on the ways that they meet their needs for housing and other social and physical infrastructure. The PMC is the implementing agency for the Poona development plans which are generated by the town planning department, a unit which is organisationally separate from the PMC and is administratively under the state government. It is located in the central building, distinct from the municipal corporation building which houses all the implementing divisions. Thus, the planning department does not have a direct line of information on the status of implementation of their plans. The implementing agency, the PMC, currently does not have computerised records for its building and engineering departments. The records are kept in registers that are both not readily available to researchers and kept in a form that would make it difficult to yield data that would allow for disaggregated wardwise analysis of revenue from, and expenditures on, physical infrastructure investments. The political considerations of elected municipal officials, chief engineers and site implementers (who can obtain non-regulated income from the discretionary power of their office) often complicate free access to information. Given this lack of readily available quantitative information on the nature and extent of the demand for infrastructure, and the rate, deployment and speed of its provision, we decided to obtain a more limited and focused source of empirical information through the instrument of a survey to be administered to some typical residential areas in the Kothrud area.

The survey was designed to reveal information on access to, and availability of, housing and physical infrastructure from the perspective of consumers of city services. This information would help us ascertain what aspects of the need for urban infrastructure in a rapidly growing city can be, and are, met by the existing public sector institutions, and to help us understand if differing mechanisms were used by differing elements of society in meeting their needs for urban amenities. Accordingly, three different residential communities in Kothrud were selected and surveyed. (1) Dahanukar Colony, one of the earliest, middle and upper middle class housing colonies, housing salaried professionals. It is one of the first colonies to be laid out and provided with water

FIGURE 1b: PUNE CITY DENSITY OF POPULATION (1971)
(Per sq km)

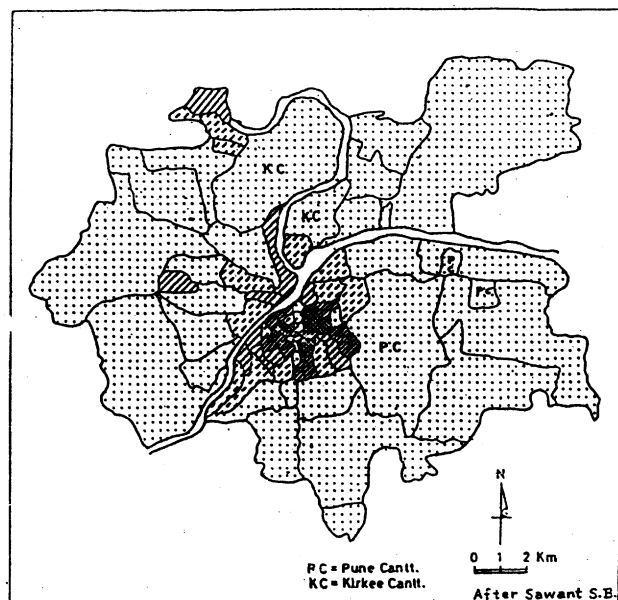
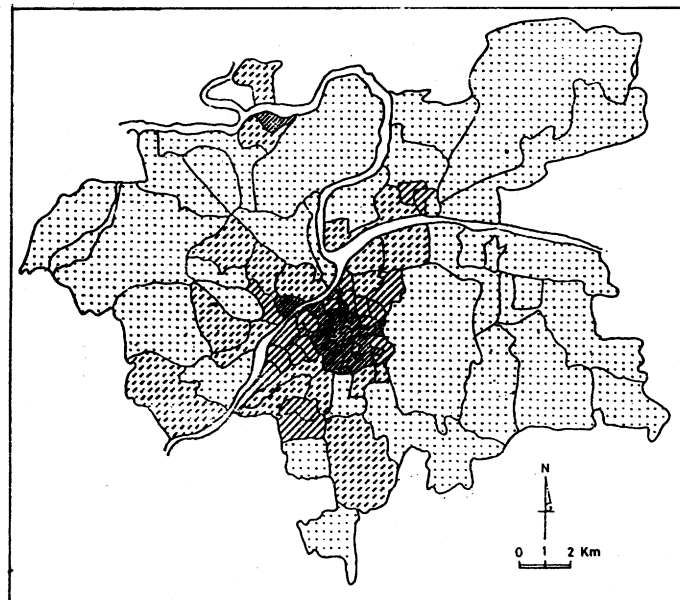


FIGURE 1c: PUNE CITY DENSITY OF POPULATION (1991)
(Per sq km)



Below 10,000 10,000 - 20,000 20,000 - 50,000 50,000 - 1,00,000 Above 1,00,000

from an adjacent industrial development in the Kothrud area. Availability of a source of water allowed early construction by individual plot owners. Currently the colony is close to fully utilise its area; (2) The original village of Kothrud, i.e., Kothrud gaathan, formerly a fringe village of Pune but now urbanised. It is an area that continues to display many characteristics of its village roots with narrow interconnecting alleys, traditional single and two storey housing interspersed with some new multi-storey construction; (3) The Jai Bhavani slum, a long established squatter settlement in Kothrud which was one of the earliest declared slum in the area and therefore became eligible for, and has been provided with, basic physical infrastructure by the PMC. The intent of the survey was to examine how three different population groups with differing socio-economic levels were managing to meet their needs for city services in a newly and rapidly urbanising context. We therefore selected three sites where the process of settlement of these three groups had been long-standing and one could observe what might be a long-term balance of activities and physical reality in each of the three locales. A survey of 1,515 households, 535 in Dahanukar Colony, 375 in the gaathan and 605 in the Jai Bhavani slum was carried out during September and October 1994.⁸ The surveyed households were predominantly Hindu with the largest Muslim population being 7 per cent in the gaathan. The assessment of surveying

teams of the social status of the respondents reveals that the Dahanukar Colony families were largely well-to-do, or upper middle class (88 per cent) whilst the Jai Bhavani slum had the fewest families in this category (5 per cent) and most families in the low status category (33 per cent). The caste composition of these households as assessed by the surveying team confirms a relationship between caste and status in that there are many brahmin (52 per cent) and maratha (24 per cent) families in Dahanukar Colony and only few scheduled castes families (4 per cent). Whereas in the Jai Bhavani slum only 2 per cent are brahmin; 57 per cent families are maratha and 12 per cent scheduled caste.

Survey findings: The questionnaire probed various aspects pertaining to Kothrud residents' access to city amenities and infrastructure, and their family income, occupation and modes and patterns of commuting. The survey gathered information on how residents in new city suburbs obtain needed housing, water, sewer, electricity, transport and other social services. The surveyed population of 1,515 households reflected a range of income, education, class, migration and residency status, and social/political connections. Dahanukar Colony has the greatest percentage of families with less than three members; 56 per cent have a family size of 3-5 members and only 9 per cent have families ranging from 5-10 members. The Jai Bhavani slum has the most densely settled configuration. Not only is the family

size larger (only 19 per cent) of households have less than 3 members; 59 per cent have 3-5 members, and 21 per cent have 5-10 members) but also, as is noted later in this paper, residential area in this settlement is on an average much smaller than other two locations.

Socio-economic characteristics of households: As regards earning members in a family, a majority of the households had only one earning member in the family. It was particularly high in Jai Bhavani slum with 74 per cent of families having only one breadwinner. In contrast, Dahanukar Colony has 59 per cent families with single earner and a higher percentage of families, than the other two groups, with 2 earners (34 per cent). Five per cent of its families also have 3 earning members. Also Dahanukar Colony has a population which is much more educated than the other two settlements. Forty per cent of Dahanukar Colony's population is either postgraduate, or has college or ITI training, while its equivalent in the Gaathan and in Jai Bhavani slum, is 13 and 4 per cent respectively. The economic advantage of having two or more earners in a family with higher education level is clearly manifested in the substantially larger and higher quality housing in the Dahanukar Colony and in the variety of household belongings to be noticed within these homes.

The fact that urban households tend to be nuclear families is corroborated across all social classes. Nuclear families consti-

FIGURE 2a: CITY OF PUNE: NUMBER OF CO-OPERATIVE HOUSING SOCIETIES IN (1961)

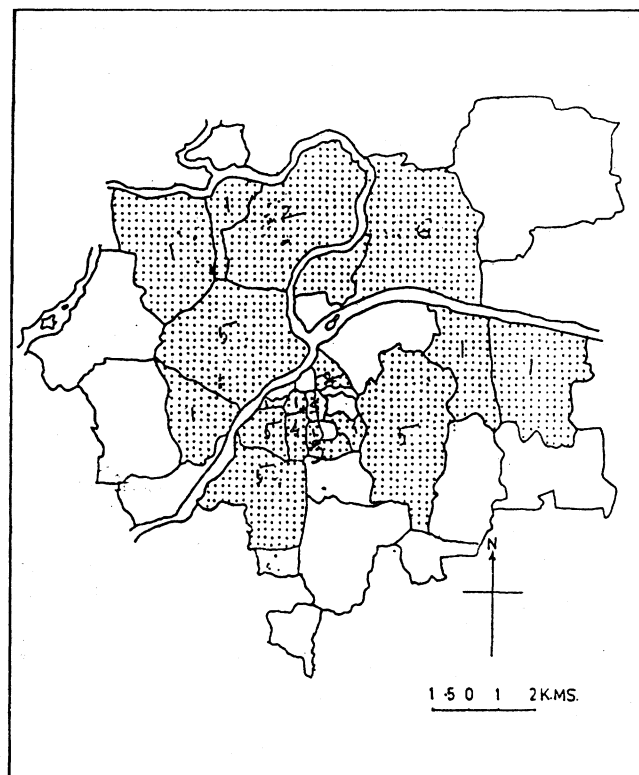


FIGURE 2b: CITY OF PUNE: NUMBER OF CO-OPERATIVE HOUSING SOCIETIES (1971)

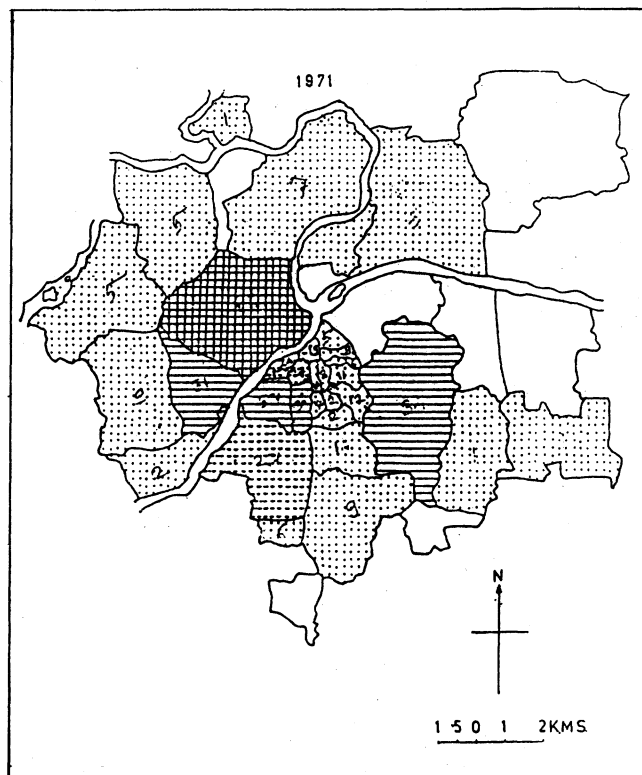


FIGURE 2c: CITY OF POONA: NUMBER OF CO-OPERATIVE HOUSING SOCIETIES IN (1981)

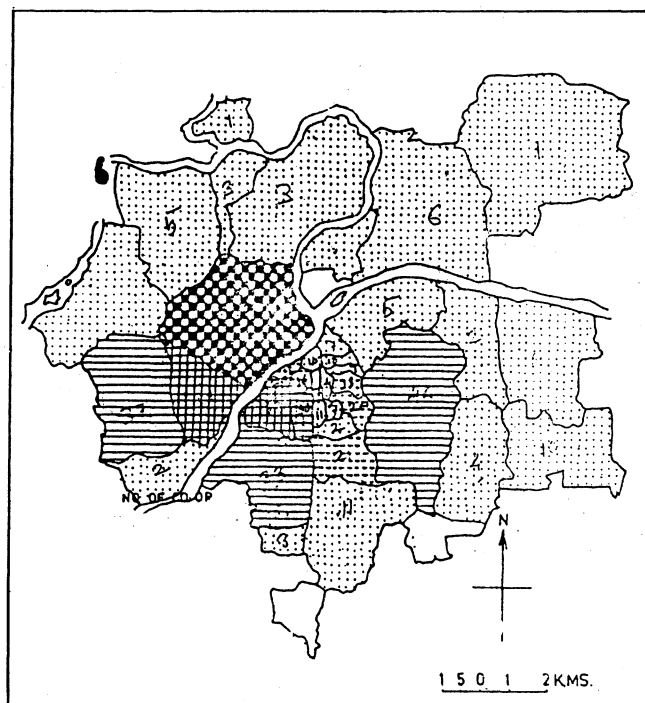
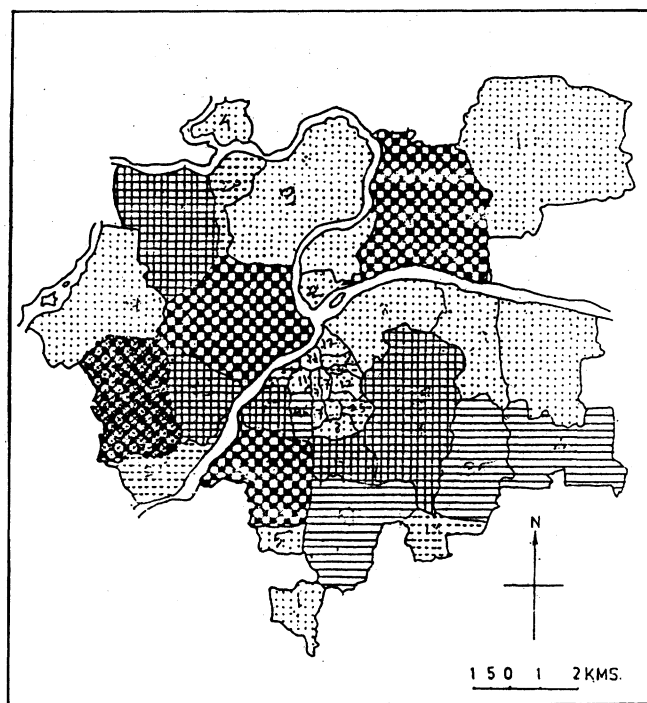


FIGURE 2d: CITY OF POONA: NUMBER OF CO-OPERATIVE HOUSING SOCIETIES (1991)



< 15
 15-30
 30-60
 60-120
 120-240
 > 240

tuted 61-63 per cent in all the three groups. The percentage of joint families was similarly ranging from 29-32 per cent in each group. One person families, comprised 7-8 per cent of the surveyed households.

The survey of the sample population's access to housing, city amenities and physical infrastructure, and the understanding of their differing commuting modes, shopping patterns and demands on services provides insights to the supply and demand for urban infrastructure disaggregated by socio-economic class. It also sheds some light on the political patronage at the municipal level to deliver housing and security of tenure to those in squatter settlements.

From where do suburban residents come? Almost half of the residents who are now settled in Kothrud were either living in Kothrud or in Pune city before moving to their present homes. In addition, another 27 per cent had moved from other parts of Pune district to their present homes. Thus, more than three-quarters of Kothrud's suburban dwellers have moved in from Pune district itself. Another 6 per cent have shifted in, from Mumbai, 15 per cent from other parts of Maharashtra, and only 7 per cent were from places outside Maharashtra. Thus, the survey indicates that Kothrud's population is largely local or is composed of regional migrants to the city.

Almost one-third (30 per cent) of Dahanukar Colony residents consist of individuals who resided in the core of old Pune city. The housing units available in the Dahanukar Colony satisfy the demand for housing emanating from the internal growth of city's population. It also presents an opportunity to cash on the higher land values of in the city's core and enables to buy more spacious residential space on the city's periphery. Another 27 per cent of Dahanukar Colony residents are from other parts of Pune city. Thus, more than half (57 per cent) of the Dahanukar Colony residents are residents of Pune city and almost 70 per cent are from Kothrud itself or from the Pune city proper. Close to 10 per cent of Dahanukar Colony residents hail from Bombay, corroborating our perception and reports from builders and architects that Kothrud attracts large investments in housing from Bombay. Also, with the rise in real estate prices in Bombay, Pune has come as a profitable proposition. Retired families have found that by selling their ownership units, or even tenancy rights, in Bombay, they can buy in Pune for the same price area twice or thrice that of Bombay and yet have money to invest and live on its interest.

More than 80 per cent of the Kothrud gaathan residents are from Pune city, with almost half from Kothrud itself. This is expected as the gaathan is a settlement of long time residents of the location. What is somewhat surprising, however, is the fact that almost 20 per cent residents of Jai Bhavani slum gave Kothrud as their previous place of residence before moving in to their present homes. Almost 70 per cent of the Jai Bhavani slum residents are from Kothrud or Pune city. The slum, among all the three locales, has the largest percentage of residents (20 per cent) who are from other parts of Maharashtra. But in all three locales the percentage of residents who are from outside Maharashtra is relatively small in the range of 6-7 per cent. Thus, Kothrud's growth is serving the needs of a predominantly local population of Pune and to some extent that of migrants from other regions of Maharashtra.

Why do they come to live in Kothrud? Forty per cent families in the gaathan and 46 per cent in Jai Bhavani slum say that they are living in Pune for the better opportunities that the city offers. Eleven per cent residents of Dahanukar Colony preferred Pune as a location good for post-retirement stage. They represented a constituency that has moved to Pune for its cultural offerings and good quality of amenities and lifestyle. On the other hand, 30 per cent of families in the Jai Bhavani slum admit that scarcity of land at their previous residence brought them to the city. But the reasons for choosing Kothrud as a place of residence vary significantly between the Jai Bhavani slum dwellers and the middle-class Dahanukar Colony residents. A sizeable section of Jai Bhavani slum (38 per cent) mentions low land value in the area as the grounds for selecting Kothrud. Whole 51 per cent residents of Dahanukar Colony value the relatively quiet environment of Kothrud, 26 per cent said that the opportunity to obtain a larger, spacious house made them opt for Kothrud. The quiet environment of Kothrud is a significant attribute for only 28 per cent of Jai Bhavani slum residents.

ATTRIBUTES OF HOUSING

What kind of home ownership does one observe? Almost 90 per cent of families in Dahanukar Colony and in the Jai Bhavani slum own their homes. In Kothrud gaathan, however, renters (52 per cent) and owners (48 per cent) were almost equal in numbers. This is because the Kothrud gaathan at the time of the survey was in transition. Many original residents had moved out and built houses just beyond the municipi-

pal corporation boundary and were renting out their residences in the gaathan, waiting to see how the municipal rules related to Floor Space Index (FSI), land-use, property taxes and utilities provided by the corporation would change over the next few years. Few of the tenants appeared to have paid any rental deposit. A quarter of the tenants informed that they had paid around Rs 10,000 as deposit – a relatively modest cost for to a rental unit.

Size of housing and economics of households in the three locations: The economic status of the three groups is reflected rather consistently in the size of the houses in the three settlements. Most of the Dahanukar Colony residents (96 per cent) own units that are larger than 400 sq ft with 19 per cent owning units larger than 3,200 sq ft. In contrast, 90 per cent of Jai Bhavani slum dwellers live in units less than 400 sq ft in the gaathan 72 per cent occupy houses of that size. Economic stratification is also apparent in the family belongings in these three groups. Although in all groups most families have at least one bed in the house, the contrast between Dahanukar Colony and Jai Bhavani slum is very apparent as regards expensive household items, which was as follows in respective settlements: refrigerator, 90 per cent and 2 per cent; dining table, 83 per cent and 1 per cent; sofa set, 87 per cent and 6 per cent; washing machine, 66 per cent and 1 per cent. Only exception is TV, which were owned by 73 per cent of households in Jai Bhavani slum, 81 per cent in the gaathan and 98 per cent in Dahanukar Colony. However, video players are not yet so pervasive; 27 per cent households in Dahanukar Colony owned one video player but only 5 per cent in the gaathan households and less than 1 per cent in Jai Bhavani slum. Convenience and utility items such as gas stove and fan were more equitably present in Dahanukar Colony, gaathan, Jai Bhavani slum as follows: gas stove, 99 per cent, 77 per cent, 55 per cent; fan, 98 per cent, 81 per cent, 58 per cent respectively.

Cost of housing and source of financing: Almost 40 per cent of the Jai Bhavani residents informed that they paid less than Rs 20,000 to buy their homes. Another 25 per cent revealed that they paid less than Rs 40,000 and 15 per cent claimed that they paid up to Rs 80,000. Only 7 per cent paid more than this for home ownership. In contrast few of the families in Dahanukar Colony (3 per cent) paid less than Rs 80,000 for their homes, 21 per cent paid Rs 80,000-1,60,000, while almost half (46 per cent) paid from 1,60,000 to 3,20,000. Another 18 per cent paid above

FIGURE 3a: CITY OF PUNE: NUMBER OF TENEMENTS IN CO-OPERATIVE HOUSING SOCIETIES IN (1961)

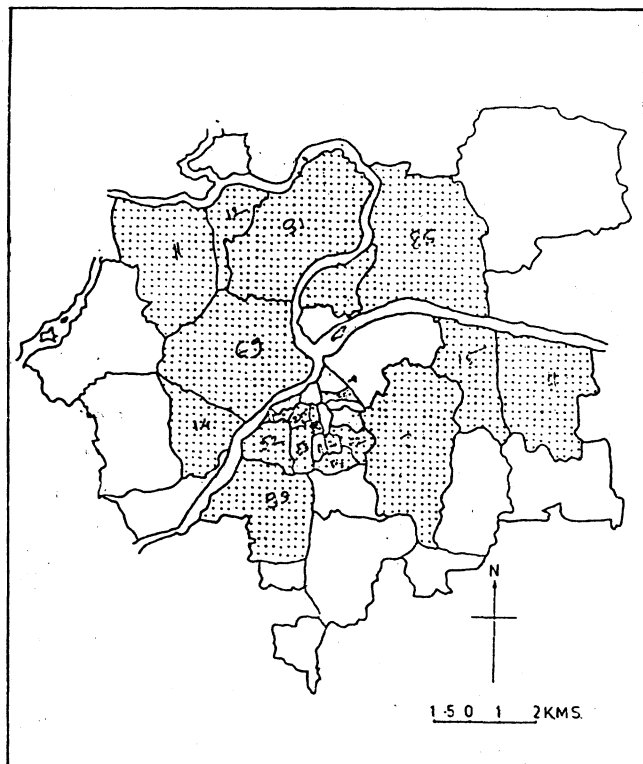


FIGURE 3b: CITY OF PUNE: NUMBER OF TENEMENTS IN CO-OPERATIVE HOUSING SOCIETIES (1971)

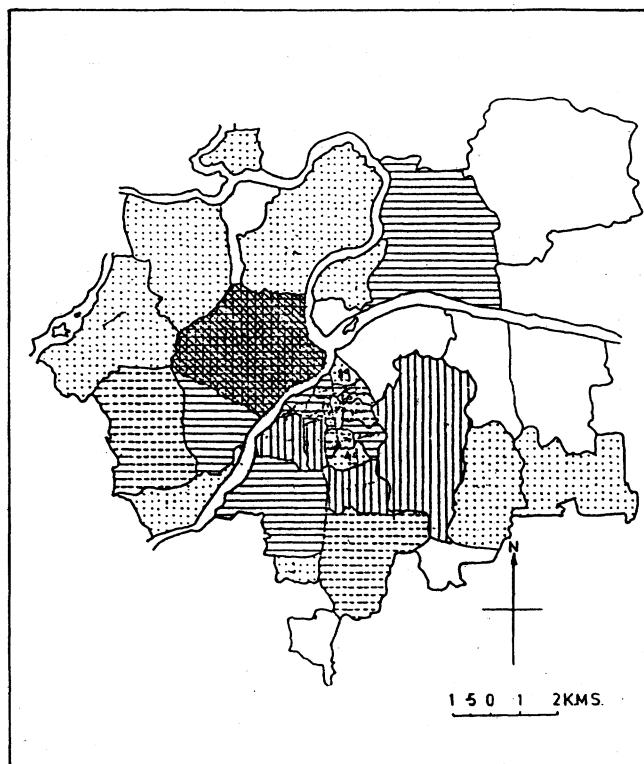


FIGURE 3c: CITY OF PUNE: NUMBER OF TENEMENTS IN CO-OPERATIVE HOUSING SOCIETIES (1981)

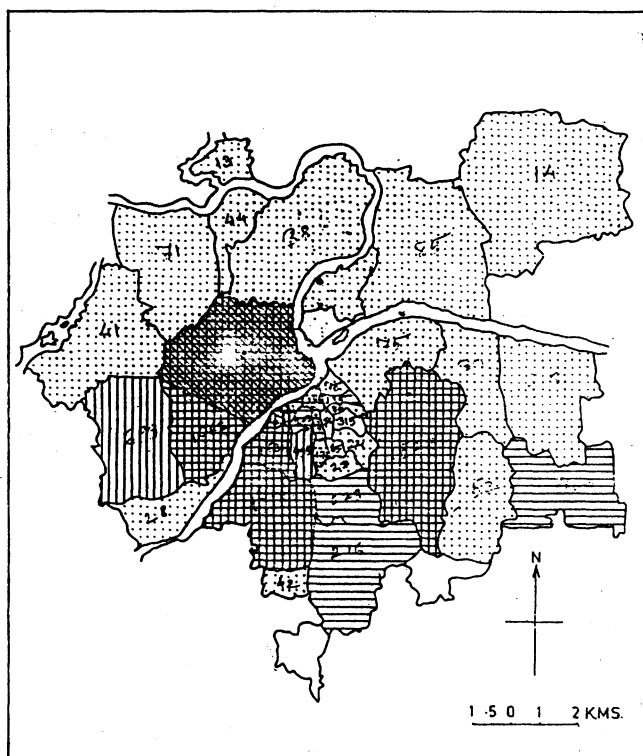
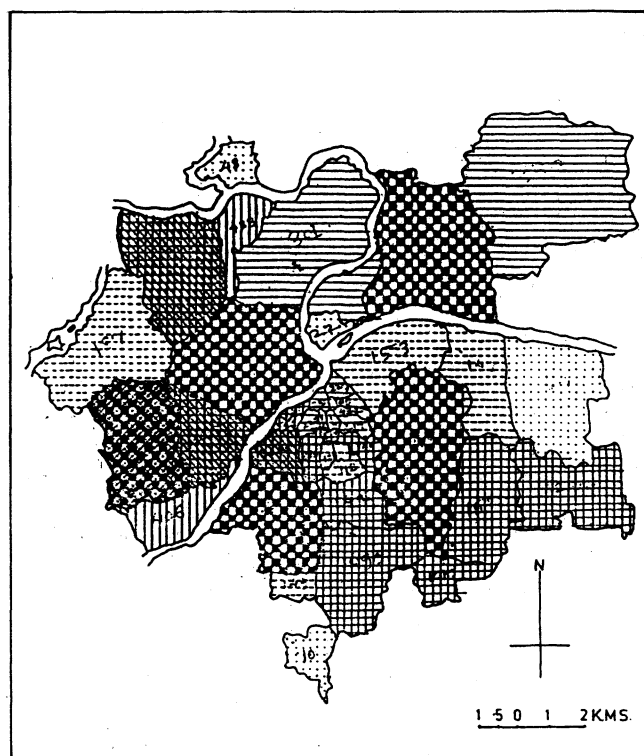


FIGURE 3d: CITY OF PUNE: NUMBER OF TENEMENTS IN CO-OPERATIVE HOUSING SOCIETIES (1991)



< 100
 100-200
 200-400
 400-800

800-1600
 1600-3200
 3200-6400
 > 6400

this amount. To finance their home expenditure, 62 per cent of the slum families drew resources from personal savings and an additional 4 per cent obtained them from private loans. Some of respondents (18 per cent) obtained finance in the form of loans from banks and a relatively small number of families (3 per cent) obtained mortgages from LIC, HDFC or MHFC. But in Dahanukar Colony, as is to be expected with individuals having access to formal sources of money, only 33 per cent of home purchases was financed by personal savings while 27 per cent was obtained from bank loans, 25 per cent from HDFC and another 5 per cent from LIC and MHFC. Thus, 30 per cent of families in Dahanukar Colony obtained mortgages from formal lending institutions offering home loans. The Dahanukar Colony data indicates that schemes to expand housing finance are having a positive impact in enhancing middle class families ability to pay for home ownership.

Agencies through which information on housing is obtained: Information regarding available housing is obtained primarily through relatives or friends and acquaintances in all these settlements. This is particularly true of the poorer residents of Jai Bhavani slum. Here 82 per cent of the families obtained their house through personal network; through friends (41 per cent) and through relatives (40 per cent). The corresponding figure for gaothan is 64 per cent and Dahanukar Colony is 57 per cent. For Dahanukar Colony households relatives are a less significant channel of information (20 per cent), relationships and contacts through work and business (18 per cent), and newspaper advertisements (16 per cent) play an equally important role. Thus, the survey indicates a rationalisation of the housing market in the upper income groups.

AMENITIES AND INFRASTRUCTURE

What kind of sewer, water and sanitation facilities are enjoyed by the suburban resident? Sewerage and drainage for the surveyed population is provided primarily by the PMC. All of Dahanukar Colony and 97 per cent of the gaothan and 93 per cent of the Jai Bhavani slum has the PMC sewerage system and 81 per cent of Dahanukar Colony, 75 per cent of the gaothan and 78 per cent of the slum has the PMC drainage system. The PMC provides common toilet facilities to practically all the Jai Bhavani slum families and to more than one-third of the families (35 per cent) living in the gaothan area. Most of the Jai Bhavani families (90 per cent) and gaothan families (89 per cent)

have private bathing areas in their homes but not all of these have pipe water connections. In the Jai Bhavani slum virtually all the water is obtained from PMC provided common pipes. In contrast, virtually all of the families in Dahanukar Colony have private toilets and bathrooms with piped water in their individual housing units. Thus, in aggregate almost half the families in the survey have their own water connection, another 43 per cent have access to common water taps provided by the PMC and over 95 per cent have access to PMC provided sewerage and almost 80 per cent to PMC drainage. Almost all the families had a separate electric connection in their homes.

Thus it seemed that basic services were available to most of the families in the survey. As was anticipated, given that they obtain water from PMC provided common water taps, most (98 per cent) of the Jai Bhavani slum dwellers did not pay the PMC for their water. Those that do pay, by and large pay directly to the PMC. Ten and 12 per cent of the colony and gaothan residents respectively pay the owner of the house they are living in. The rate at which the water use was charged also varied. A meter rate was paid by 67 per cent of the Dahanukar Colony residents, 54 per cent of the gaothan and only 12 per cent of the Jai Bhavani slum. Another 20 per cent and 25 per cent residents in the colony and the gaothan respectively paid a flat rate for their water.

The system of electric connection and payment is much more standardised and rationalised, perhaps because the company, Maharashtra State Electrical Board (MSEB), is a state government agency. The number of households that do not pay for electricity is lower, less than 1 per cent of respondents in Dahanukar Colony, 6 per cent in gaothan, and less than 9 per cent in the Jai Bhavani slum. A majority of those that pay are assessed by a meter measurement of consumption, their percentage being 99 per cent in the colony, 87 per cent in the gaothan and 79 per cent in the Jai Bhavani slum. By and large the payments are made directly to the MSEB office (98 per cent, 80 per cent and 82 per cent for the colony, the gaothan and the slum respectively). Predictably, the average payments by the Jai Bhavani slum households are much lower (less than Rs 40 per month for 55 per cent of its residents) than the colony where only 8 per cent pay less than Rs 40 per month while 76 per cent pay between Rs 80 and Rs 320 per month. In the gaothan 64 per cent of the population pay between Rs 20 and Rs 160 per month.

Garbage disposal is another service in which the survey reveals quite distinct patterns and differences between the three groups. Around 4 per cent of the Jai Bhavani slum respondents stated that they throw their garbage outside their house while the rate of this for the other two groups was less than 1 per cent. The PMC garbage dust bins are used by 95 per cent of the slum dwellers and gaothan residents but by only 22 per cent of the Dahanukar Colony residents, 77 per cent of whom subscribe to a private garbage collection agency which collects garbage door to door and disposes it of. The Dahanukar Colony residents pay less than Rs 10 per month for garbage collection whilst in the gaothan and Jai Bhavani slum most (9 per cent and 99 per cent) pay nothing for use of the PMC collection containers.

Redressing problems with services: Predictably, many of the slum dwellers (42 per cent) experience problems with sanitary facilities and find the space in their houses inadequate (44 per cent). The channels through which these three groups of city residents are able to get their problems in service delivery addressed tended to vary by their socio-economic strata. In the total surveyed population almost a quarter of the families reported that they have been able to solve their problems by going to their municipal corporator. However, in Dahanukar Colony this channel was used by only 4 per cent of the responding families, whilst in Jai Bhavani and gaothan it was 44 per cent and 23 per cent respectively. Thus, the perception that the 'patronage' of local corporators is quite significant in the slum is corroborated by our survey findings. Only 18 per cent of surveyed population approached the PMC for solutions, and here too 11 per cent of the Dahanukar Colony respondents opted for this choice whilst the percentages were 21 per cent and 22 per cent respectively for the gaothan and the Jai Bhavani slum. Few used the services of a neighbourhood middle-man to solve their service delivery problems, the figures being 2 per cent for the colony, 8 per cent for the gaothan and 5 per cent for the Jai Bhavani slum. Overall 13 per cent of the respondents claimed they were able to solve service problems with collective action within their settlement. However, this type of mobilisation and 'self-help' initiative was found largely in Dahanukar Colony where more than 28 per cent of problems were solved through collective action. Higher education levels and incomes in Dahanukar Colony have resulted in a great deal of community organisation. This has been facilitated by

FIGURE 4a: LAND VALUES IN PUNE CITY (1951)

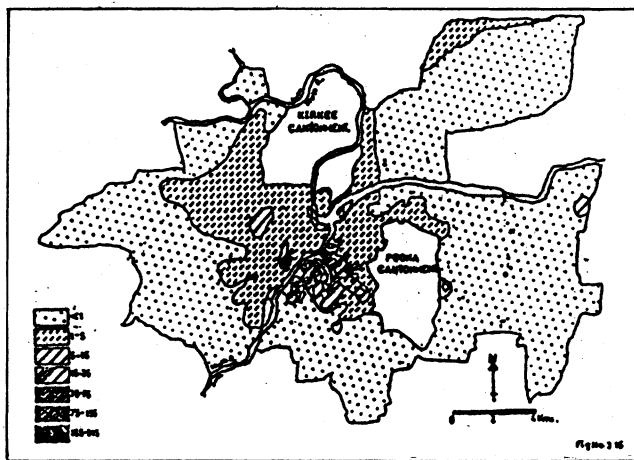
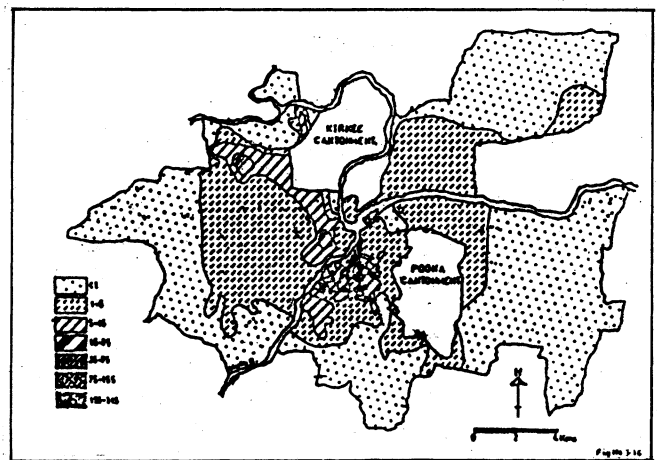


FIGURE 4b: LAND VALUES IN PUNE CITY (1961)



Source: Sub-Registrar's Office.

FIGURE 4c: LAND VALUES IN PUNE CITY (1971)

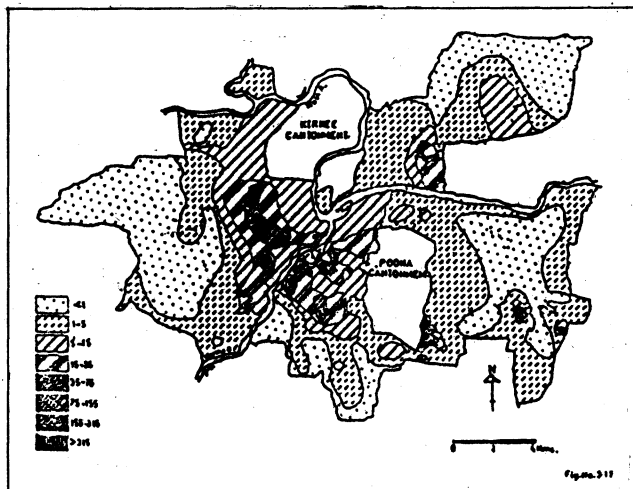
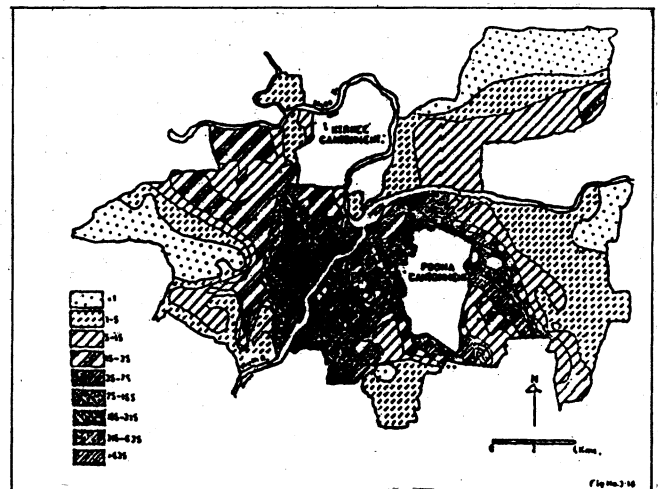


FIGURE 4d: LAND VALUES IN PUNE CITY (1985)



Source: Sub-Registrar's Office.

a colony newsletter produced on a volunteer basis. Dahanukar Colony has significant economic resources to collect money and buy services such as garbage collection. In the gaathan 9 per cent of respondents reported similar collective action whilst only 3 per cent reported it in the Jai Bhavani slum. The various means by which respondents attempted to solve their service problems appeared to be fairly satisfactory. When asked if they were successful in getting redress, 50 per cent of the Dahanukar Colony respondents, 51 per cent of the gaathan residents, and 61 per cent of the Jai Bhavani respondents said they were successful in getting their service delivery problems resolved.

QUALITY OF LIFE

Quality of housing and surrounding environment: As one would anticipate, the housing in Dahanukar Colony was at

the higher end of construction with several single family bungalows, a majority of walk up four storey apartments and some of the more recent units forming themselves into clusters of 'gated' communities with a watchman and a check point at the entry point to the cluster. Almost all the units in Dahanukar Colony are of reinforced concrete (92 per cent) or load bearing brick (7 per cent), and in 63 per cent of cases these units are approached by an asphalt or cement road. At the time of the survey 37 per cent roads were still untarred but subsequent site observations have noted a great deal of upgradation of these roads. In the Jai Bhavani slum one found a range of housing stock - at the low end some 2 per cent of dwelling of kachha huts, another 15 per cent of semi-pucca construction, 30 per cent pucca construction with cement mortar, 39 per cent of load bearing brick and some 13

per cent of housing being higher end reinforced concrete construction. The units were largely row housing with common partition walls. As the Jai Bhavani slum was a declared slum, the PMC's slum upgradation division had completed the work of upgrading 68 per cent of the approach lanes with a cement surface and 8 per cent were asphalted. But almost a quarter of the approach lanes remained untarred. In the gaathan, 69 per cent of the roads were asphalted, 14 per cent cemented and 17 per cent untarred. Thus, it was apparent that in all three contexts efforts to varying degrees had been put into upgradation and construction of housing units and road surfaces. Most (68 per cent) of the colony was classified as well drained while the remaining had water logging problem. In the gaathan and especially the slum, there were far fewer well drained and clean roads (21 per cent

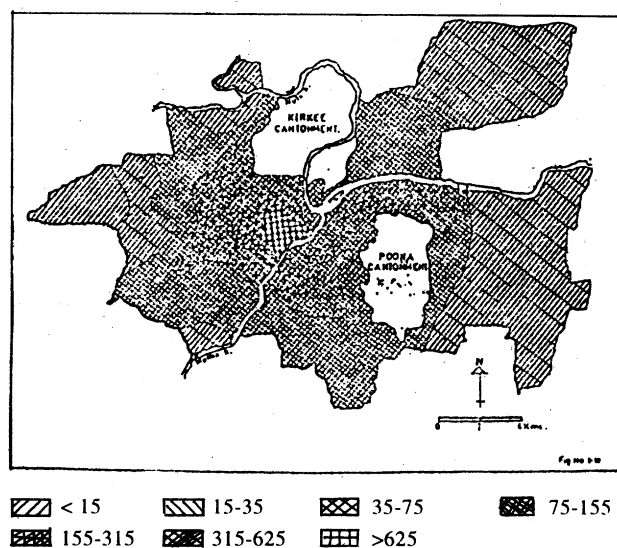
and 3 per cent respectively) and a high incidence of streets categorised as polluted with garbage and roaming animals (37 per cent and 47 per cent respectively). In addition some 2 per cent and 11 per cent respectively of the responding units were highly polluted with human and animal excreta.

The ambience in the Dahanukar Colony with respect to noise pollution was considerably better than in the other two sites with interviewers reporting in 49 per cent of cases no traffic noise. Remaining did face the traffic noise of two- or three-wheelers. Only in 5 per cent of cases was there noise of cars, trucks and buses. In contrast, and as is to be expected since the gaathan is located at the heart of cross traffic in Kothrud, only 14 per cent of units surveyed reported experiencing no traffic noise while 41 per cent suffered noise of two- or three-wheelers, and 39 per cent of car, truck and bus. In addition, 5 per cent of units were impacted by sounds of industries such as grain mills and light manufacturing plants. The Jai Bhavani slum was reported to have similar levels of noise pollution. The slum also had the highest level (10 per cent) of noise from small industries which can be attributed to the fact that some housing is much more dense and crowded, impact of noise carries over a greater number of units.

Shopping range: A significant observation across all three sites is that there is a range of shopping services to meet the demand for varying quality of goods. In all three localities, the respondents noted that they meet their every day needs either at the door or in the nearby street. One observes in the Dahanukar Colony various stores providing vegetables, sweets, groceries and other foodstuffs that the middle and upper middle-class residents demand. Similarly, in the central access lane of the slum a range of small huts and street vendors (in the evening) selling vegetables and provisions at a cheaper rate affordable to the slum dweller. A substantial number of residents report that they go to the city or other locations for periodic purchases of higher value goods such as appliances and jewellery. However, the stores in the Kothrud area are increasingly providing more and more sophisticated range of goods and services so that the extent of commuting to the city for services and shopping get considerably reduced in future.

Residents of all three locales were satisfied with the range of goods and the shopping facility available in the area. Most of the Dahanukar Colony residents (90 per cent) found the prices affordable

FIGURE 4C: LAND VALUES IN PUNE CITY (1951)



Source: Sub-Registrar's Office.

while the figures were lower for the gaathan (73 per cent) and the slum (64 per cent).

Commuting distances, modes and expense: Differences between the three residential areas are particularly apparent in the mode of transport used by their respective residents. A substantially greater number of families in the Dahanukar Colony (86 per cent) than in the other two groups own cars and motorised two wheelers which they park in designated spaces near their homes. The Jai Bhavani residents depend by and large on non-motorised bicycles. Most of the individuals surveyed travel less than 10 kms during the day. A larger percentage of the Dahanukar Colony residents (7 per cent) travel somewhat longer (10 to 20 kms) distance for work. Predictably, the Jai Bhavani slum dwellers walk or bicycle their way to their destinations. The use of Pune Municipal Transport buses is about equal between 14 per cent gaathan and the slum to 16 per cent Dahanukar Colony residents. If we add the use of the state transport buses we find that in all three settlements the use is about 18 per cent. Public transport is thus providing service in equal measure to all three social groups. The use by individuals of motorised two wheelers is substantially higher in the colony (18 per cent) relative to 7 per cent in the gaathan and the slum.

CONCLUSIONS

The survey on the housing and infrastructure status of three varied communities in the Kothrud suburb of Pune city serves to illustrate empirically various aspects of rapid urbanisation in metropolitan areas. This emerging suburb is quite

robust in the range of services and internal activity and growing more so with the passage of time. Large number of individuals (88-94 per cent) surveyed are not travelling more than 10 kms per day on any regular basis for work or education. A substantial section of those living in the gaathan and in the Jai Bhavani slum bicycle or walk to their place of work. The use of two wheelers is particularly prominent in the upper middle-class Dahanukar Colony residents. Those commuting longer distances, such as to industrial estates in Pimpri, Chinchwad and Bhosare, take two wheelers to the bus or railway station and continue further via public transport. Thus, commuting distance for the middle-class in this area is considerably less than for similar populations in mega cities like Mumbai. That's why cities like Pune are increasingly preferred by the middle class.

Interestingly, Kothrud has served to meet the emerging housing needs of the population belonging to the city proper and that the migration to the suburb has primarily been local and regional. The housing in the middle-class Dahanukar Colony and the working class Jai Bhavani slum has been largely financed through personal savings and private financial institutions. Thus, housing in the area is still within the reach of the average to middle-class family. There is considerable satisfaction with the quality of housing, the shopping, city services, and quality of life that exists in the area. Redress for failure in services are obtained through varied means. Appealing to the local corporator is seen as an effective means by those in the Jai Bhavani slum while collective organising and self-financing the required services

such as garbage collection is resorted to by those in the Dahanukar Colony.

Although we wished to look at the role of the town planning department and the PMC in shaping the growth and development of Kothrud, the paucity of information we were able to obtain from the PMC in terms of implementation expenditures and investment precluded making a cause-effect analysis of what was driving the suburban growth. We are therefore left with a more observational and anecdotal understanding obtained through our field work and our in-depth interviews of residents and builders. The PMC and development plans have played an indirect role in shaping the nature and type of growth. Given the fact that 40 per cent of the population does not pay property taxes one of the major sources of revenue for the PMC-resources of the PMC are quite limited.

However, the survey has enabled us to ascertain some, albeit limited, numbers and facts about the kind of housing, services and quality of life obtained in this emerging suburb of Pune. Some of these findings perhaps can be generalised to suburban growth in other metropolitan cities elsewhere in India. Additional comparative information about suburbs in Pune

and other suburbs in comparable cities such as Bangalore, would be useful to provide empirical data so as to decipher the internal dynamics unique to Indian cities.

Notes

[Since populations of these three localities were not equal and our resources and time were limited, representative samples were surveyed rather than taking a full census. Detailed sketches showing housing units in the gaathan and Jai Bhavani slum were prepared and for Dahanukar Colony, they were obtained. In Jai Bhavani slum every fifth house was surveyed, in the gaathan every second and in Dahanukar Colony every tenth.]

- 1 Census of India 1991, series 1, paper 2 of 1991, *Provisional Population Totals: Rural-Urban Distribution*, Provisional Population Table 4, Population of Urban Agglomerations, Cities and Towns, 1991, p 263.
- 2 For this purpose wardwise population figures were taken from census reports and maps showing censusward boundaries were taken from census officer. Areas of the wards were measured with the help of a planimeter. Population was divided by area to arrive at density of population for every ward. These densities were plotted on the maps showing census-ward boundaries for several decades.
- 3 As soon as a co-operative housing society is formed, it is registered with the registrar of co-operatives. The office of the registrar of co-operatives is the most reliable source of information on co-operative housing building activity within Pune city.

- 4 We assume in this mapping and interpretation that the intent to construct, as represented in the registration of the housing society, does result in actual construction.
- 5 Maps showing co-operative house building activity were prepared by Vilas Patil, PhD candidate, department of geography, Pune University, under the supervision of Shashikant Sawant.
- 6 Any land deal has to be registered with the office of the sub-registrar. In the registration form area and cost of the land is required to be given.
- 7 Maps showing land-values were taken from an unpublished MPhil dissertation entitled, 'Changing Land Values and Land-use of Poona City, 1951-1985' completed by Annuradha Datar under the supervision of Shashikant Sawant.
- 8 The survey was conducted under the supervision of Hemalata C Dandekar and Shashikant Sawant. Fifteen students in the MA geography class were trained in administering the survey and supervised as they completed the survey. Doctoral students helped in pre-survey preparation including developing sketch maps to enable us to establish a sampling frame. They also helped in supervision of students during field work. The questionnaire probed various aspects pertaining to Kothrud residents access to housing, city amenities and infrastructure and family income, occupation, commuting modes, shopping patterns and use of services in the area. Students were trained to complete the coding of data which had been collected by them. This was then professionally entered into computer readable files.

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