URBANIZATION AND HOUSING IN KARNATAKA

Dissertation submitted in partial fulfilment
for the degree of

MASTER OF PHILOSOPHY

K. R. NARENDRA BABU

CENTRE FOR THE STUDY OF REGIONAL DEVELOPMENT
SCHOOL OF SOCIAL SCIENCES
JAWAHARLAL NEHRU UNIVERSITY
NEW DELHI-110067

1986

JAWAHARLAL NEHRU UNIVERSITY

CENTRE FOR THE STUDY OF REGIONAL DEVELOPMENT
SCHOOL OF SOCIAL SCIENCES

Telegram : **JAYENU**
Telephones : **652282**
661444
661351
New Delhi-110 067

C E R T I F I C A T E

This is to certify that the dissertation entitled : "URBANIZATION AND HOUSING IN KARNATAKA", submitted by Mr. K.R. Narendrababu, in fulfilment of the six credits out of the total of twenty-four credits for the award of the Degree of Master of Philosophy (M.Phil.) of the University, is a bonafide work to the best of our knowledge and may be placed before the examiners for evaluation.

CHAIRMAN

(SUDESH NANGIA)
Supervisor
21.7.86

A C K N O W L E D G E M E N T S

I express my sincere thanks to Dr. Sudesh Nangia, Associate Professor in the Centre for the Study of Regional Development, for guiding this research work. Her constructive criticism and valuable suggestions have refined my ideas and the present work. I express my sincere thanks to Dr. Amitabh Kundu, Associate Professor in the Centre for the Study of Regional Development, for involving me in various other research activities. He facilitated my learning and brought confidence by refining and strengthening my ideas.

I express my special thanks to Canara Bank at my home town (Hiriyur) for financing my research in the crucial final year. I am grateful to my friends, Mr. Venkat, Indian Institute of Technology, Delhi, Mr. Ramachandra, CSRD, JNU, Mr. Pawar, Centre for the Study of Developing Societies, Delhi and many others, who have been kind and helpful to me during my research work. I appreciate Mr. Muniral Islam's cartographic skill and Mr. Sebastian's precision in typing.

NEW DELHI
21st July, 1986

(K.R. NARENDRABABU)

C O N T E N T S

LIST OF TABLES

LIST OF MAPS AND CHARTS

C H A P T E R I

I N T R O D U C T I O N

1.1 Statement of the Research Problem

Under the present circumstances of rapid urban growth and slow pace of urbanization, the housing scenario of India presents a dismal picture. Inconsistent attention as well as input-output notions of investors have discouraged allocation of adequate inputs into housing sector. Perhaps more dangerous is that the investment in housing is considered to be 'dead investment' that 'locks up resources' and hence it is less desirable. The typical biased investment can be attributed to the fact of multiplier effects on output in other areas of production and consumption. However, many a planning cells in the country do start keying brains when the urban living environment degrade into intolerable state.

The pros and cons of urban growth being clear today, the future is doomed to meet a much aggravted situation. A lack of proper understanding of urbanization in relation to the housing situation in urban areas at the micro level and a concern for the future urban living, call for systematic assessment and developing appropriate strategies. In this connection, various questions like patterns of urbanization, quality of housing, types of accommodation, migration patterns,

local urban economies, density factors, housing finance investment etc., have remained to be explored more in detail at the regional and micro-level.

Though it is acceptable that lack of demand for quality housing is deep rooted in the problems of general economic growth, employment, income distribution and levels of savings, a careful examination of investment patterns arouse a different thinking. For considerable amount of money and other resources are being regularly spent on slum clearance, upgradation, demolitions and so on by the government and local bodies. A casual observation of cementing lanes, cutting drainage, repairing blocked up public toilets etc. in the congested slums of cities, makes it clear that there is a kind of adhoc investment going on in upgrading urban settlements. Further, the households too keep spending certain proportions of their income on the maintenance of their dilapidated housing stock. In addition, large number of households part with their incomes for rent payments. Innovative schemes and policies could bring some solutions to the rent paying households.

All these drive out two facts. Firstly, considerable amount of resources are being invested on temporary patch up work to maintain the shelter. Secondly, the inevitability involved in this type of investment is too serious. Here it is understandable that a good house really requires huge

initial investment which many families cannot afford. Therefore, the exercise of policy making, developing appropriate strategies for reaching out a wide housing market and generating planned urban development, require a better understanding of the following aspects:

1. Integrated view of urbanization and housing conditions at the regional and local level.
2. Types of urban economies functioning at the town/city level.
3. Assessment of investment patterns and housing and urban development administration.

They become important in the efforts of improving the quality of urban life by providing, managing and maintaining adequate infrastructural facilities in urban areas. They help the exercises of whole urban residential planning. Keeping in view the above said issues in urban living and housing, this research work is an attempt towards measuring the magnitude of two broad phenomena at the micro-level with a title viz. "Urbanization and Housing in Karnataka".

However, some of the scholars have an argument that estimation of population and housing shortages in relation to the processes of urbanization do not really solve the basic problems. For they believe that it may keep us away from understanding the necessity of a desirable process leading to social change. Hence they argue in favour of strengthening urban economy first to generate employment and avoid the phenomenon of 'push back' effects in the urban

areas. Though it is aggreeable with this argument, it is essential to understand absolute increase in the urban population and consequent deterioration of living standards. Therefore, linking upof urbanisation and housing with the economic functions of towns may bring better understanding and suggest changes that can be brought about. Similarly, there has to come up a radical change in the attitude towards investment in housing. Perhaps more scientific way of understanding the urban living conditions and fresh-rethinking on housing are necessary for planned urbanization and better urban living.

Now turning to the regional profiles of the stated problem, Karnataka too is experiencing rapid urban growth. Though the state does not exhibit typical colonial type of city growth as in the case of a few states in the country, the cities in Karnataka are growing fast and are on the way to face the same problems what cities like Calcutta and Bombay have faced. Magnitude and severity may be different but long run prospects for healthy city growth seem poor. A few cities like Bangalore, Mysore, Mangalore and Hubli are becoming magnets and have given rise to intra-regional disparities in various respects. The districts which show higher proportions of urban population have had huge population concentrated in one or at the most, two urban centres.

In 1961, Karnataka with a size of 22 per cent urban

population shows a wide variation in the range of 10-54 per cent of urban population among the districts. Even among them as many as 13 districts have had urban population, varying between only 10-19 per cent. Same type of wide disparities in the levels of urbanization continue to exist, since the variations range between 12-55 per cent in 1971 and 13-64 per cent in 1981. At the macro-level, the increase in the proportion of urban population of the state has not been significant. The process seems to be rather slow since the urban population figures stand 22 per cent for 1961, 24 per cent for 1971 and 29 per cent for 1981. But in terms of urban growth/absolute increase the figures become alarming as they have increased from 5,266,493 in 1961 to 7,122,093 in 1971 and 10,729,606 in 1981. In 1981 alone there is 50 per cent increase over 1971. However, it has to be remembered that the process in the state as a whole is slow and inter-district variations are sharp, indicating faster growth of a few districts. To some extent, they also explain the reasons for the disappearance of small towns because higher proportions of urban population in those districts are contributed by one or two cities.

Now to look at shelter, the housing activity in the state is dismal. The contribution of housing to state income (NDP) is pretty low. The figures for income from housing stand to be 2.27 per cent in 1970-71 1.83 per cent

in 1974-75 and 3.13 per cent in 1978-79. Though there is a marginal improvement in 1978-79, the size of contribution reflects slow growth as well as the type of importance attached to the production and consumption of housing and real estate. Compared to the national figures of contribution from housing to national income (GDP), Karnataka's performance is again low. The national figures for the same years are 3.7 per cent, 3.1 per cent and 3.3 per cent respectively.

The phenomena of urban growth and house construction activity being clear, one can understand the possible imbalances in the availability of infrastructural facilities in the urban areas due to intensified developmental activities in a few urban agglomerations. Bangalore has continued to dominate the regional economic scene. The problems of shelter here have started worsening. Slum population has increased to 10 per cent of the city's population. The present rapid growth of other Class I cities like Hospet, Mangalore etc. seems to take the same path. Further, developments like Iron and Steel Plant at Hospet, oil refinery and all weather port at Mangalore are bound to accentuate the housing crisis, unless proper investments are earmarked. Small town economies would definitely face problems of unemployment and income if they are left out of an urban system. Therefore, taking regional economy as a whole,

an examination of urbanization and shelter problem becomes crucial.

1.2 The Region and Units of Analysis

The state of Karnataka, located in the southern India, is surrounded by neighbouring states of Maharashtra in the north, Andhra Pradesh in the east, Tamil Nadu and Kerala in the south and Arabian Sea in the west. The total area of 1,91,791 km^2 comprises 19 districts with a total size of 37,135,714 population in the year 1981 (Map 1.1). Being one of the highly urbanized states in India, it has an urban population of 10,729,606 living in an area of 3683 km^2 in the same year.

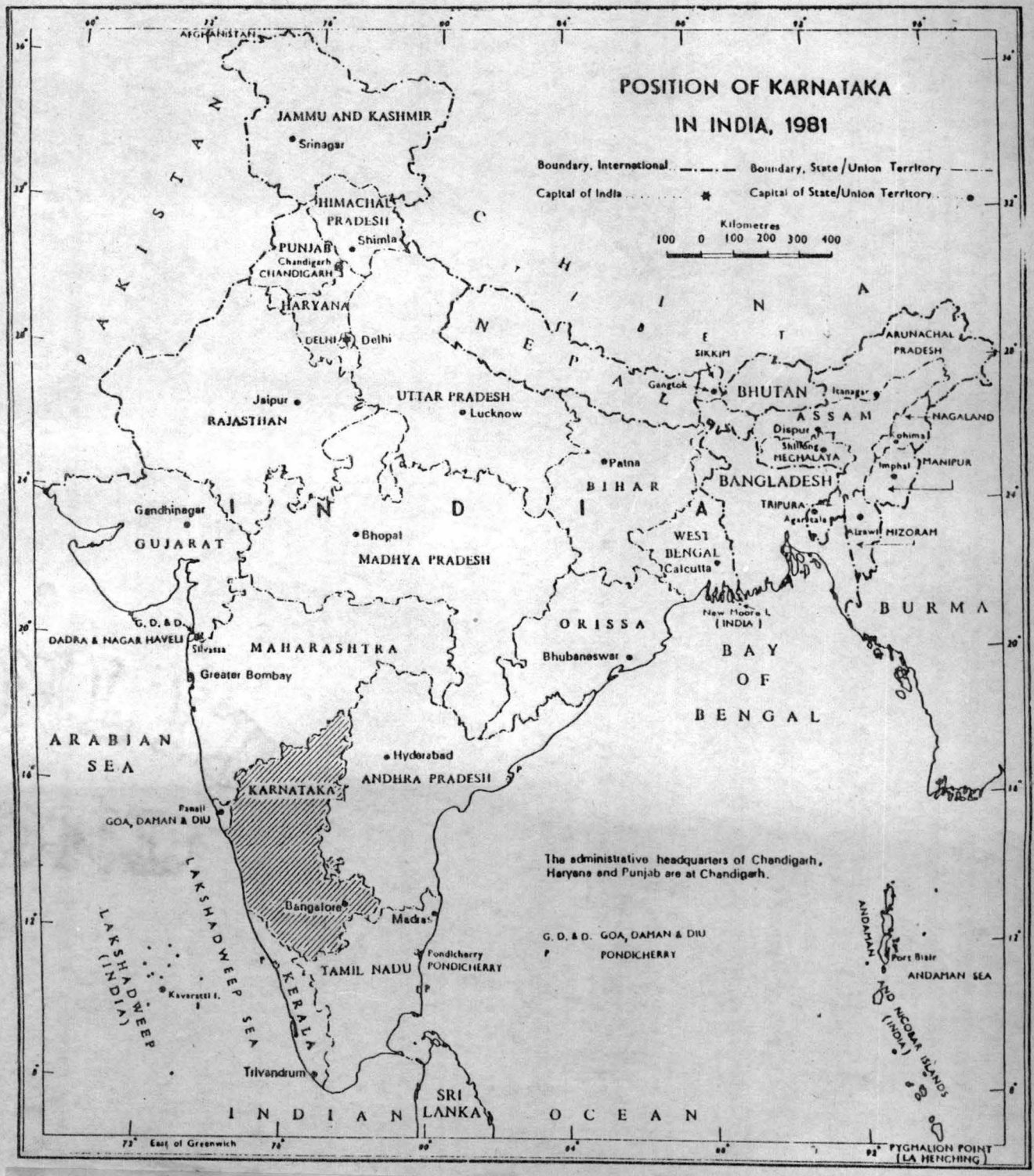
Units of Analysis:

Before the units of analysis in this work are explained, it is necessary to explain a difference between the regionalization of Karnataka by census authorities[1] and Learmonth and Bhat.[2] While the census authorities have given a more generalized regions of Karnataka based on the administrative boundaries of the districts, the study by Learmonth and Bhat provides a more accurate regionalization

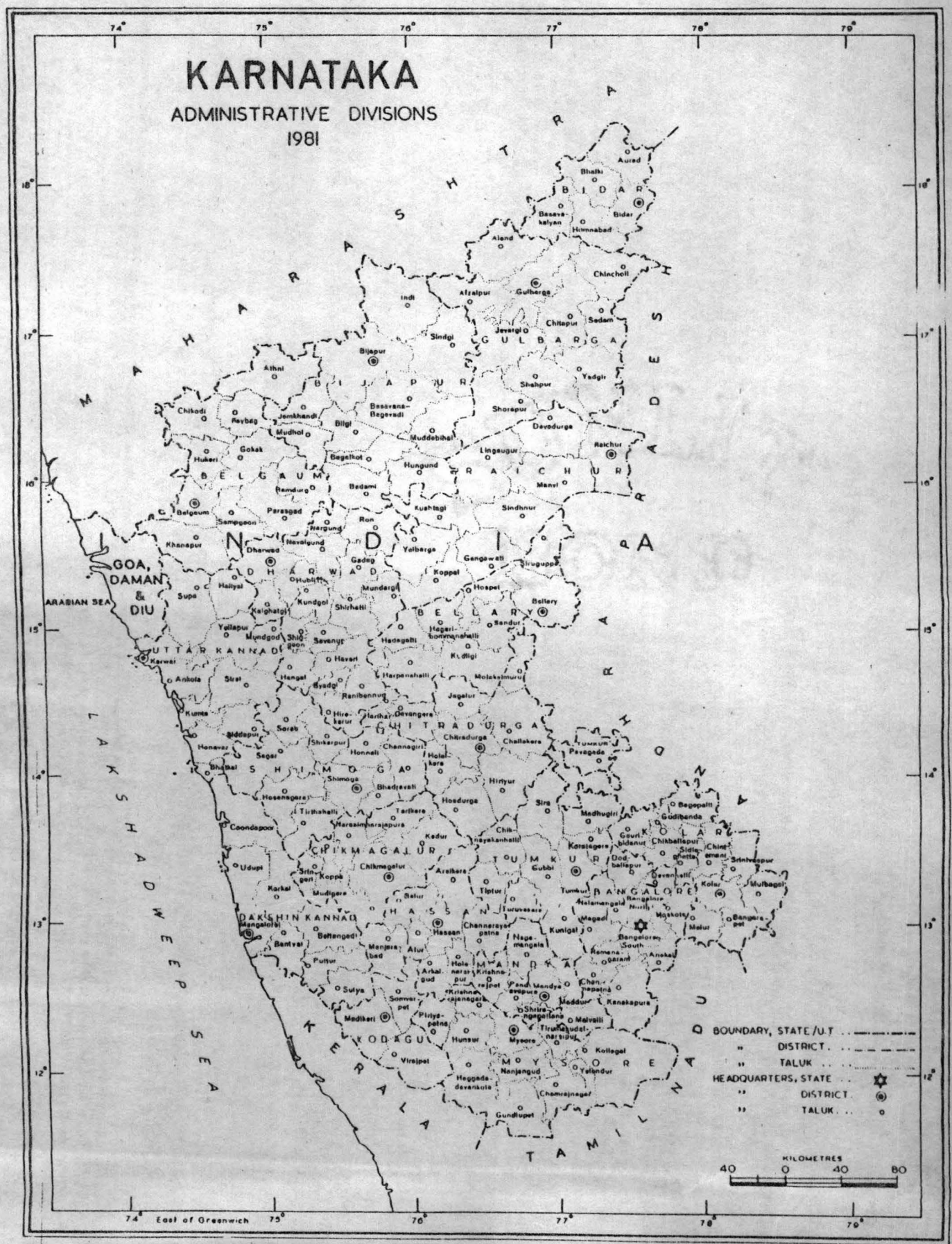
---

1. India Census, 1971, Mysore :General Report, Part IA, vol. 1, p. 7

2. A.T.A. Learmonth and L.S. Bhat, (eds.), Mysore State: An Atlas of Resources, vol.1 (Asia Pub. New York, 1961), p. 84.



Source: India Census, 1981, Karnataka: General Population Tables, Part II-A.



Source: India Census, 1981, Karnataka: General Population Tables, Part II-A.

based on the administrative boundaries of the tehsils.

The census regionalization is as follows:

1. Coastal region	: South Canara
2. Malanad region	: Chikmagalore, Coorg, North Canara and Shimoga
3. Northern Maidan	: Belgaum, Bellary, Bidar, Bijpur, Dharwar, Gulbarga, and Raichur.
4. Southern maidan	: Bangalore, Chitradurga, Hassan, Kolar, Mandya, Mysore and Trinkur.

The analysis in the following chapters conforms with census regions. The secondary data used to analyse the characteristics of urbanization and housing in the state refer to macro, meso and micro areal units. At the macro-level, the state level data on urban Karnataka, at the meso level, district level data and at the micro level, the city-level data (cities common to 1961 and 1971 census years) have been used. The district level analysis has been made extensively, since they form viable units for planning and implementation Also the administrative machinery has been organized at the district level. In this case the question of boundary overlapping and adjustments in data disappear. Therefore for the purpose of district level comparisons, inter-district variations have been taken into account.

1.3 State of the Economy*

The argument made in favour of increased investments in housing sector, should take into account the general economic situation of the study region. The magnitude of state domestic product (SDP) and distribution of incomes would determine the magnitude of investment in housing. A review of general economic situation in Karnataka reveals certain basic impediments in boosting both state and household investment for economic development in general and housing in par-ticular.

The growth rate of Karnataka's economy which was 4 per cent till 1974 has declined seriously in the aftermath to 1.7 per cent causing serious decline in the real (per capita) incomes. Contrary to an expectation that the growth of industry and agriculture should be harmoneous, they have started growing in a dissimilar fashion. Definitely this has a longrun implication of industry suffering from dearth of agriculture's support in the overall increment of SDP. The investment in agriculture is said to have not resulted in increased productivity and output. But the industry has grown appreciably showing an average growth rate of 6 per cent

---

* Most of this part is a synthesis of economic issues discussed in Five Year Plan and other documents related to the economy.

in industrial incomes during 1978-83 as against an average rate of 3.3 per cent in the previous years. Probably this is due to large scale central investment in the public sector enterprises located in Karnataka and an inter-state import mechanism for agricultural support must be helping increase in Karnataka's industrial incomes.

The per capita income at the district level being not satisfactory, have had other facets too. There are inter-district variations reflecting intra-regional disparities[3] and high poverty situation (Rural = 49.38, urban=43.97 and combined = 48.93 per cent of population in 1977-78)[4] reflecting serious inter-personal disparities in income distribution.

Another hurdle in the slow economic development and low growth rate is that of lower productivity of savings, though the savings rates are growing appreciably.

Percentage of Savings, 1961-82

1961-62	1966-67	1971-72	1976-77	1981-82
5.5	11.3	12.2	17.4	18.2

Source: Karnataka Government, Draft Seventh Five Year Plan, 1985-90.

---

3. See Appendix I for a complete table on district per capita, sectoral and urban per capita incomes and method of estimation.

4. Source: India Government, Hand Book of Housing Statistics: 1982-83 (NBO, New Delhi, 1984), p. 118.

An examination of the employment scene does not show significant improvement, despite increase in the employment opportunities. There has been a decline in the per worker income in the non-agricultural sector.

Income per worker in Non-agriculture sector, 1971-81

Year	Karnataka	India
1971	3085	4145
1981	3016	4633

Source: Ibid.

This is due to the rapid growth of low paid employment in unorganized sector during 1977-80. The annual rate of employment in unorganized sector has been 12.3 per cent as against 3.6 per cent in the organized sector. Therefore, the continued existence of higher poverty levels in the state seems also due to under-employment i.e. low paid/less continuous jobs.

A look at the patterns of economic development in the state exhibit serious intra-regional disparities. The industrial policy resolution - 1983, has been a highly non-successful instrument in generating balanced development through industrial dispersal. And the same old argument that inter-industry and inter-region linkages are causing industrial concentration, continues to prevail in the planning circles.

The argument continues on the same plane to hold that rigorous application of dispersal policy has caused movement of investment to neighbouring states. Though there has been an acceptance that the dispersal policy is also non-successful due to lack of physical infrastructure in other nodal cities of Karnataka, the planners seem to emphasize more on the former two reasons.

A compisite index of development prepared by the planning department of the state shows the levels of development as follows (Table 1.1)

I. Overall Development

sl.no.	Levels of Development	Districts
1.	Highly developed	Bangalore and South Canara
2.	Developed	Chitradurga, Coorg, Kolar Mandya, Mysore, Shimoga and North Canara
3.	Backward	Belgaum, Bellary, Bidar, Bijpur, Chikmagalore, Dharwar Hassan, Raichur and Tumkur.
4.	Highly backward	Gulbarga

II. Agricultural Development

Sl.No.	Levels of Development	Districts
1.	Highly developed	Bangalore, Chikmagalore, Chitradurga, S. Canara, Hassan, Coorg, Mandya, Mysore, Shimoga, and N. Canara.
2.	Developed	Bellary, Kolar and Tumkur
3.	Backward	Belgaum, Bidar, Dharwar and Raichur
4.	Highly backward	Bijpur and Gulbarga

III. Industrial Development

Sl. No.	Levels of Development	Districts
1.	Highly developed	Bangalore
2.	Developed	S. Canara, Dharwar and Mysore
3.	Backward	Bellary, Chitradurga, Kolar and Shimoga
4.	Highly backward	Belgaum, Bidar, Bijpur, Chimagalore, Gulbarga, Coorg, Mandya, Hassan, Raichur, Tumkur, and North Canara

IV. Infrastructure Development

Sl. No.	Levels of Development	Districts
1.	Highly developed	Bangalore, South Canara, Mandya, and Shimoga
2.	Developed	Belgaum, Chitradurga, Coorg, Kolar, Mysore and N. Canara
3.	Backward	Bellary, Bijpur, Chikmagalore, Dharwar, Hassan, Raichur and Tumkur
4.	Highly backward	Bijpur and Gulbarga

Source: Karnataka Government, Draft Sixth Five Year Plan - 1980-85, pp. 68-76.

In addition to the factors of intra-regional disparities, one of the most important impediment, causing lower output and overall impact on SDP, is the energy crisis. Probably the industrial production of Karnataka would have

Table 1.1 Karnataka: Composite Index of Development, 1960-61 to 1979-80

Sl. No.	Districts	1960-61 Index	1960-61 Rank	1974-75 Index	1974-75 Rank	1979-80 Index	1979-80 Rank
1.	Bangalore	218.00	2	206.01	1	198.57	1
2.	Belgaum	91.12	12	94.18	11	91.97	12
3.	Bellary	89.23	14	86.42	15	94.98	11
4.	Bidar	64.28	17	82.81	16	82.11	17
5.	Bijpur	71.66	16	76.62	18	87.02	15
6.	Chikmagalore	123.74	7	94.14	12	90.16	14
7.	Chitradurga	100.24	11	99.93	10	101.36	9
8.	Coorg	124.15	6	108.63	7	105.84	7
9.	Dharwar	118.54	8	102.45	8	96.28	10
10.	Gulbarga	60.10	19	67.04	19	65.77	19
11.	Hassan	90.03	13	90.62	13	91.91	13
12.	Kolar	136.53	4	110.79	6	103.81	8
13.	Mandya	114.70	10	112.36	5	118.87	5
14.	Mysore	124.60	5	116.81	4	124.45	3
15.	N. Canara	118.24	9	100.09	9	106.00	6
16.	Raichur	63.04	18	79.72	17	80.72	18
17.	Shimoga	180.15	3	125.28	3	120.44	4
18.	S. Canara	230.21	1	181.01	2	176.69	2
19.	Tumkur	84.54	15	88.11	14	85.91	16
20.	State	100		100		100	

Source: Karnataka Government Sixth Five Year Plan Draft - 1980-85, p.67

been much more tremendous had there been no frequent cut in the power supply to the extent of more than 50 per cent of power consumption.

1.4 Objectives and Hypotheses

The problems of urban areas being serious and conspicuous, the research exercise in urbanization and housing remains to be the examination of the magnitude of problems. Therefore, the basic thrust in this work is on the measurement of the magnitude of various problems relating to the disparities in urbanization and housing. Hence, the following objectives have been formulated for a detailed understanding of the current two urban phenomena:

1. Study of the trends and processes of urbanization: spatial and temporal.
2. Appraisal of urban housing conditions in terms of stocks, quality, density, deficits and public utilities.
3. Classification of the types of urban economies in operation on the basis of workforce employment.
4. Appraisal of policies and programs implemented, solve the problem of urban shelter.
5. Appraisal of Housing Administration, Organization, Management, Planning and Implementation.
6. Appraisal of the present patterns of investment and resource constraints in urban housing.
7. Projection of urban population and estimation of urban housing deficits upto the year 2001 A.D.

The following are the important hypotheses which

have been tested in the light of empirical evidence gathered:

1. There exist serious inter-district variations in the degree of urbanization, due to the growth and developmental activities taking place in a few districts. The process of urbanization triggered, a few decades ago in these districts has continued to facilitate their growth and speedier transformation of rural into urban in the study region.

2. The above said phenomenon of persisting higher degrees of urbanization in only a few districts is again due the growth of one or two important urban centres in those districts and they have caused greater concentration of urban population at these centres. This may be true to other less urbanized districts as well to some extent, due to greater population concentration at the district headquarter.

3. Greater impetus to urbanization being only in a few districts and increasing industrial and tertiary activities at a few urban centres have caused greater concentration of migrants in those areas. Precisely, the movement of migrants in the state is restricted to a few districts of high urbanization to indicate inter-district disparities in employment generation and income earning.

4. Although the process of urbanization in the study region may be a result of tertiarization and industrialization, there should be significant influence of mere growth of population in some settlements to qualify them become 'urban'. This phenomenon of urban growth is evident from the proportion of towns having agricultural economic bases which are typically rural.

5. Further the functional specializations of towns/cities being too high, there are serious structural imbalances in the local economies, indicating non-diversified state of workforce employment.

6. Higher degree of urbanization manifests concentration and larger number of economic activities. Therefore, the highly urbanized districts would have lesser stock utilization for residential purposes, to cause greater housing shortage/housing below standard/over crowding.

7. The highly urbanized districts being the areas of prime attraction to the migrants, it would be difficult for the migrants to build own houses. Therefore, there is a greater possibility of highly urbanized districts having greater proportions of rented households/lesser proportions of owner households to indicate higher speculation of housing stocks in highly urbanized areas.

8. Since highly urbanized districts receive large number of migrants, there should be a urban phenomenon of 'low key construction - rapid urban household growth'. Also because of high cost of housing in highly urbanized areas, the total shortages and different levels of urbanization should have a relationship to indicate deteriorating quality of urban living.

1.5 Methodology

This is a case study of Karnataka attempting mainly to measure and analyse the inter-district variations in the levels of urbanization and housing conditions. The phenomenon of inter-district variations has been explained using standard deviation in the distribution of values for various variables. The measurement of urban processes like degree of urbanization and tempo of urbanization, has been made using several techniques explained as follows. The reasons for choosing a particular technique for the measurement of a phenomenon have been explained right in the chapter before detailed analyses are presented. Several minor computations have also been shown right in the course of discussion. The important statistical techniqes that need explanation are -

(a) Degree of Urbanization:

(i) Percentage of urban population to the total population:

$$P_u^t = \frac{U}{T} \times 100$$

where P_u^t is percentage of urban population, U is total urban population and T is total population of the district.

(ii) Number of urbanites per thousand rural population:

$$r^t = \frac{U}{R} \times 1000$$

where r is urban-rural ratio at t year, U and R are urban and rural population figures respectively.

(iii) Locality size of median inhabitant:

$$M_I = Q_i + (Q_{i+1} - Q_i) \frac{50 - PP_i}{PP_{i+1} - PP_i}$$

MI = Locality size of median inhabitants

PP_i = Cummulative per cent of population for locality size category just below 50 per cent.

PP_{i+1} = Cummulative per cent of population for next locality size category.

Q_i = Upper limit of locality size i.

Q_{i+1} = Uppter limit of locality size i + 1.

Indian Census Classification of Size Class of Towns.

Sl. No.	Class	Locality size category	Percent of population
1.	I	100000 +	
2.	II	50000 - 99999	
3.	III	20000 - 49999	
4.	IV	10000 - 19999	
5.	V	5000 - 9999	
6.	VI	Below 5000	

(b) Tempo of Urbanization:

(i) Annual growth rate of urban population:

$$TA = \frac{1}{n} \left(PU^{t+n} - PU^{t} \right)$$

Where TA is tempo of urbanization, PU is per cent of urban population at t and t + n years and n is number of years.

(ii) Annual Rate of Exponential change in the urban-rural ratios per thousand population:

$$W = \frac{1}{n} \log n \frac{UR^{t+n}}{UR^{t}} \times 1000$$

where W is annual rate of exponential change in the ratio; UR is urban-rural ratio at t and t + n years and n is number of years.

(c) Functional Classification of Towns:

Functional classification of towns is a technique applied to identify the economic function/specialization as reflected in the workforce employment. This technique has been applied by many scholars with their own methods of computation. In this study, Asok Mitra's method of computation has been followed. Though Mitra's works (1974 and 1981) provide functional classification of towns of India, the data used refers to 1961 in the first work. In the second work, he has repeated the exercise to the same towns of 1961 in 1971 to examine the shifts in the functions of Indian towns. Therefore there happen to be several omissions of towns in 1971. With an objective of utilising the latest data for all the towns and to avoid the adjustment calculations to get comparable data for 1961 and 1971, only thedata for 1971 have been utilized. Hence the aspect of examining shifts in the functions is not considered.

Application of Mitra's method lies in the exploitation of equilateral triangle, which provides an appropriate geometrical situation to plot towns and identify their functions. The two lateral lines of the triangle facilitate plotting a combination of three variables (whose total percentage accounts to 100) and easily reflects the workforce participation rates. By drawing circles around centroid of the triangle, the degree of diversification also could be

identified. The diversification would be more balanced, when a town's position is found near to the centroid. The census classification of industrial workers in 1971 and the series of computations are as follows:

Census Classification of Industrial Workers, 1971

Category No.	Brief Description	Signs
I	Cultivators	a
II	Agricultural Labourers	b
III	Workers engaged in livestock, Forestry, Fishing, Hunting, Plantations, Orchards and allied activities	c
IV	Mining and Quarrying	d
V	Manufacturing, Processing, Servicing Reparis and Household Industry	e
VI	Construction of building, canals, electrical and water supply installations etc. including their maintenance	f
VII	Trade and Commerce	g
VIII	Transport and Storage	h
IX	Other Services	i

Total workers $T_1 = (a + b + c \ldots\ldots + i)$

Total workers $T_2 = T_1 - (a + b)$

Before the actual classification exercise begins, a preliminary distinction between the agricultural towns and non-agricultural towns has been made. For this purpose, a town that has more than half of its workforce engaged in agricultural activities has been termed as agricultural towns. Naturally a town with more than half of its workforce in non-agricultural activities would become non-agricultural towns. The calculation is

$$\text{I.} \quad Agt = \frac{(a + b)}{T_1} \times 100$$

where Agt is agricultural town; a & b are workers in the first two census categories; T_1 is the summation of the figures for all the nine census categories.

II. Now for further classification, only the non-agricultural towns are taken. Here a summation of urban workers (T_2) is arrived at, by excluding workers in agricultural and allied labour activities. As explained earlier it would be, $T_2 = T_1 - (a + b)$. The identification of specialization follows by clubbing the figures of different census categories as follows:

(1) Manufacturing $(f_1) = c + d + e + f$

(2) Trade and Transport $(f_2) = g + h$

(3) Services $(f_3) = i$

$$P_m = \frac{f_1}{T_2} \times 100$$

$$P_t = \frac{f_2}{T_2} \times 100$$

$$P_s = \frac{f_3}{T_2} \times 100$$

P_m , P_t and P_s refer to the percentages of manufacturing, trade and transport and services to the total non-agricultural workers (T_2). An examination of the percentage share of each sector specified above would show the predominant function (highest value) followed by the other two sectors. The three values obtained thus make up a combination for plotting on the triangle.

Once the values of each sector of a town are plotted on the triangle, the town's position reflects two aspects:

(i) Functional Diversification

(ii) Functional Specialization[5].

Functional Diversification:

1. C_1 - Highly diversified (FHD).
2. C_2 - Moderately diversified (FMD).
3. C_3 - Predominant function accentuated (PFA).

---

5. For detailed information on methodology for functional classification, see A. Mitra and others, Shifts in the Functions of Cities and Towns of India, (Abhinav Pub. New Delhi, 1981), pp. 2-23.

4. Out of C_3 - predominant function highly accentuated (PFHA).

FUNCTIONAL SPECIALIZATION:

$\Delta 1$ - Low industry, Medium trade and Transport and high service (LI, MTT, HS).

$\Delta 2$ - Low trade and transport, medium industry and high service (LTT, MI, HS).

$\Delta 3$ - Low trade and transport, medium service and high industry (LTT, MS, HI).

$\Delta 4$ - Low service, medium trade and transport and high industry (LS, MTT, HI).

$\Delta 5$ - Low service, medium industry and high trade and transport (LS, MI, HTT).

$\Delta 6$ - Low industry, medium service and high trade and transport (LI , MS, HTT).

Fixation of radium for the circle to be drawn in the triangle requires another calculation. Counting circles from inner most one (from the centroid).

We have three circles, C_1, C_2 and C_3 for which r_1, r_2, and r_3 are required. The C_1 would have a radius of $6\frac{2}{3}$ of the base of the triangle; C_2 and C_3 would have a radium of $11\frac{2}{3}$ and $16\frac{2}{3}$ of the base respectively. Keeping a base of 15 cms for an equilateral triangle we obtain -

$$r_1 = \frac{15}{100} \times 6.66 = 0.99 \text{ cms}$$

$$r_2 = \frac{15}{100} \times 11.66 = 1.75 \text{ cms}$$

$$r_3 = \frac{15}{100} \times 16.66 = 2.5 \text{ cms}$$

(d) Housing Shortages:

(i) Direct shortages are derived by -

$$D_s^t = \frac{H_h - R_h}{H_h} \times 100$$

where D_s is to direct shortages; H_h is to total number of households in urban areas and R_h is to total number of occupied residential houses at t years.

(ii) Total shortages are derived by -

$$T_s^t = \frac{D_s + N_s}{H_h} \times 100$$

T_s is total shortages; D_s is direct shortages; N_s is non-useable housing stocks; H_h is total households at t years.

(e) Population Projections Based on Exponential Curve:

$$Y = P_o.e^{\bar{r}t}$$

$$r_1 = \frac{1}{t} \log n \frac{P_{71}}{P_{61}}$$

$$r_2 = \frac{1}{t} \log n \frac{P_{81}}{P_{71}}$$

$$\bar{r} = \frac{r_1 + r_2}{2}$$

where Y is projected population; P_o is population of latest census year i.e. 1981; $\bar{r}$ is average trend rate of population growth in the previous decades.

or the same $\bar{r}$ can be directly derived by -

$$\bar{r} = \frac{1}{2t} \log n \frac{P_{81}}{P_{61}}$$

This can be used only when time period of two series of data are same.

Therefore the projected population would be -

$$Y_{86} = P_{81} \cdot e^{\bar{r}5} \quad ; \quad Y_{91} = P_{81} \cdot e^{\bar{r}10}$$

$$Y_{96} = P_{81} \cdot e^{\bar{r}15} \quad ; \quad Y_{2001} = P_{81} \cdot e^{\bar{r}20}$$

(f) Projection of Households and Housing Stocks:

Using the same formula explained above (d), the projection of households and housing stocks have been derived, using the figures of total urban households (h) and total urban residential stocks (s). Therefore

(i) The projected number of households would be:

$$Y_{86} = h_{81} \cdot e^{\bar{r}5} \quad ; \quad Y_{91} = h_{81} \cdot e^{\bar{r}10}$$

$$Y_{96} = h_{81} \cdot e^{\bar{r}15} \quad ; \quad Y_{2001} = h_{81} \cdot e^{\bar{r}20}$$

(ii) The projected number of housing stocks would be:

$$Y_{86} = S_{81} \cdot e^{\bar{r}5} \quad ; \quad Y_{91} = S_{81} \cdot e^{\bar{r}10}$$

$$Y_{96} = S_{81} \cdot e^{\bar{r}15} \quad ; \quad Y_{2001} = S_{81} \cdot e^{\bar{r}20}$$

Now once the projected number of households and projected number of housing units have been obtained, it would be possible to compute the projected shortage of housing as follows:

$$(a) \quad P_s^t = P_h - P_u$$

$$(b) \quad P_u = \frac{P_n}{100} \times K$$

(a) where P_s is projected housing shortage; P_h is projected households and P_u is the projected number of useable stocks.

(b) where P_u is projected useable housing stocks; P_n is projected total stocks and K is percentage of useable stocks in the year 1971 assumed to be constant upto the year 2001.

For the purpose of examining the possible relationship between urbanization and housing, multiple correlation matrix has been prepared by using a set of variables for 1971.

1.6 Review of Literature

A review of existing academic research, mainly policy/planning oriented, reveals significant and adequate contributions in the field of urbanization. However, there are serious gaps in the field of inter-disciplinary research on urban economic systems at the micro-level and housing situation in the urban areas of the state. In the field of urbanization, the works by Prakasarao & Bhat (1960) on readjustment of district boundaries for planning; Learmonth & Bhat (1961) on resources of Mysore State and Prakasarao (1964) on the towns and regional disparities in urban concentration, are prominant and pioneering. Their data base being obsolete today, the field of urbanization requires new explorations. The issues relating to general economic development, fiscal policy, administration and

resource mobilization for five year plans are dealt by Ramachandrarao (1962). A study by NCAER* (1965) brings out regional distribution of resources for industrial and economic development of Karnataka. An excellent work for metropolitan planning has been made by Prakasarao & Tewari (1979). This work by making a detailed study of Bangalore - a fast growing city, provides a comprehensive perspective planning. A treatisic work on overall economic development and regional profiles, can be found in the work of Puttaswamaiah (1980). An attempt has been made by Hanumappa (1981), understand the dynamics of urbanization in a case study on Hospet, a medium town in Bellary district. A set of two volume by Karnataka Government (1982) i.e. Karnataka State Gazetter, provides detailed information on the state. The background papers on urbanization by Karnataka Government (1983) shows an attempt towards assessing overall situation of urbanization in the state at macro-level and draw some policy guidelines. Again a recent study by Prakasarao (1983) brings out spatial dimensions of urbanization in India with special reference to Karnataka and Bangalore city. The problems of regional disparities in economic development of recent times have been studied by Hemalata Rao (1984) with greater methodological precision. The Karnataka Governments (1984) Draft Seventh Five Year

---

* National Council for Applied Economic Research

Plan (1985-90) also makes a detailed discussion on urbanization. The most recent work on Karnataka's urbanization is by NIUA* (1985) which again makes a macro-level assessment and leaves the study of local urban economies for further research.

As stated earlier there has been a serious gap in the areas of local urban economies and urban housing (with package of urban infrastructure). A few of the studies reviewed in the preceding analysis, do speak about housing. However, there exists a serious lack of scientific understanding of urban housing situation in relation to urbanization. It is in the sense that there have been no serious and specific attempts to measure the magnitude of the supply and deficits of urban housing, urban infrastructure and basic impediments in the way of investment in housing at different levels of urbanization.

1.7 Chapter Scheme

After a detailed introduction to the research problem, the study region and methodological aspects of this work in the first chapter, an attempt has been made to analyse the processes of urbanization at the direct level in the Second Chapter. By using several indicators

---

* National Institute of Urban Affairs

and techniques, both spatial and temporal aspects of urbanization have been analysed in detail to obtain an overall picture of urbanization in the state. The analysis of degree of urbanization has been supplemented with a brief on tempo of urbanization. To support the arguments made on the inter-district variations in the levels of urbanization, patterns of migration to urban areas have been examined. For the identification of sectoral linkages with the levels of urbanization, a detailed functional classification of towns has been presented by observing structural aspects of workforce employment in each town. The third chapter deals with a detailed assessment of urban living. An attempt has been made to assess the supply of housing and a package of public utilities to depict the poor housing situation in urban areas. The analysis here continues to explore the possible relationship between urbanization and housing. Several aspects like stock utilization, tenure status, types of accommodation, wall and roof material, privacy etc. have been analysed, to derive systematically estimated housing shortage in the urban areas. The fourt chapter presents the total system of housing and urban development in Karnataka. The main objective here is to assess the efforts being made to solve the problem of urban shelter. A careful assessment of supply and demand of housing and related public utilities depends upon sound institutional infrastructure developed. Therefore, a

comprehensive analysis has been presented on the aspects of housing and urban policy, organization and management, planning, implementation and target beneficiaries. In addition, an appraisal of housing finance market and investment patterns in housing sector have been presented in the fourth chapter. These are followed by a concluding chapter which tries to present the whole suty in a nut shell. A table of correlation factors has been presented to support the arguments made in the previous chapters at different places. A summary of findings preceds the above said table, with empirical evidence to understand regional profiles of urbanization and housing together. After a brief discussion on the future of urbanization and housing in Karnataka, several policy implications have been identified for the augmentation of efforts to deal with future crisis.

1.8 Data Base

The following volumes published by the Census of India, Government of India and Government of Karnataka provide secondary data:

1. India Census, 1961, Mysore: General Population Tables, Part II-A.
2. India Census, 1961, Mysore: Cultural and Migration Tables, Part II-C.

3. India Census, 1961, Mysore: Report on Housing and Establishments, Part IV-A & B.

4. India Census, 1971, Mysore: General Report, Part I-A, Vol. 2.

5. India Census, 1971, Mysore: General Population Tables, Part II-A.

6. India Census, 1971, Mysore: Migration Tables, Part II-D.

7. India Census, 1971, Mysore: Report on Housing, Part IV.

8. India Census, 1971, Mysore: District Census Handbooks, Part X - A&B.

9. India Census, 1981, Karnataka: General Population Tables, Part II-A.

10. India Census, 1981, Karnataka: Tables on Houses and Disabled Population, Part VII.

11. India Government, 1984, Handbook of Housing Statistics: 1982-83. National Building Organization, New Delhi.

12. Karnataka Government, 1978-79, Statistical Abstracts of Karnataka, Bureau of Economics and Statistics, Bangalore.

13. Karnataka Government, Annual Reports of the Department of Housing and Urban Development: 1982-85, Bangalore.

14. Karnataka Government, Annual Reports of Karnataka Housing Board (KHB): 1982-85, Bangalore.

15. Karnataka Government: 1985, A Brief Note (Housing) KHB, Bangalore.

16. Karnataka Government, 1985, Seventh Five Year Plan: 1985-90 and Annual Plan: 1985-86 (Housing) KHB, Bangalore.

17. Karnataka Government, 1985, Review of Physical and Financial Progress of State Plan Schemes (Housing) KHB, Bangalore.

1.9 Key Concepts

Some of the important concepts that need definitional explanation are 'urban', 'census house' and 'census households'. The Census of India, from whose reports most of the data has been collected for this work, defines them as follows at different time points:

I. Urban Areas:

In the year 1961 -

(i) All the municipalities, cantonments, notified areas and other places enjoying a recognised local administration like 'civil lines' etc. were treated automatically towns.

(ii) Any other place with pronounced urban characteristics and amenities and considered to be a town by the superintendent of census operations at his discretion.

(iii) For others the criteria are:

(a) Population not less than 5000.

(b) Density not less than 1000 per mile^2.

(c) At least 3/4 of the male working population in non-agricultural activities.

In the next two census publications, i.e. in 1971 and 1981 the definition of 'urban area' remains the same except for a minor variation in the year 1981. The variation occurs[6] in the case of accounting "75% of the working male

---

6. See India Census, 1981, Karnataka: General Polulation Tables, Part II-A.

population" in non-agriculture activities. In the years 1961 and 1971, the activities like Live Stock, Forestry, Fishing, Logging were treated as non-agricultural activities. The same have been excluded in 1981 for counting 75 per cent of male workers in non-agricultural activities.

II. Census House:

The definition of 'Census House' remains unchanged during the censuses of 1961-81. Basically being an independent building or a part of it, the 'Census House' represents a separate unit in the total housing stocks. The census of 1981 defines it as ".... a building or part of a building having a separate main entrance from the road or common courtyard or stair-case etc. used or recognised as a separate unit. It may be occupied or vacant. It may be used for residential or non-residential purposes or both."

III. Census Household:

The 'Census Household' being primarily a socio-economic unit, the definition remains unchanged during all the three census years of 1961-1981. In the year 1981 the definition is -

> "A household is a group of persons who commonly live together and would take their meals from a common kitchen unless the exigencies of work prevented any of them doing so."

1.10 Summary

Urbanization, a process of socio-economic change in the human settlements, is also a source of several urban problems. These problems are issues for serious debate today because the increasing concentration of people at a few settlements has posed serious threat to better living. Urban housing is one of these issues demanding careful attention to make urban life standard, better and more comfortable.

A common understanding that urbanization is leading to worsened living would not suffice to draw conclusions and policies. Therefore, this research work is an attempt towards measuring the recent trends in urbanization and housing. Hence it becomes an indepth and problem specific research in urban housing. Some of the key issues examined and analysed in the light of latest available data are, inter-district variations in the degree of urbanization, urban concentration, concentration of migrants, housing conditions, supply of public utilities, housing shortages and housing and urban development administration.

Some of the important statistical techniques that are going to be applied in this research work are, percentage of urban population, urban-rural ratio, locality size

of median inhabitant, annual growth rate of urban population etc... The application of Asok Mitra's method for functional classification is assumed to throw light on structural aspects of urban workforce employment. The future of urbanization and housing could be understood by using calculations based on exponential curve votes. The state, district and city being the units of analysis, existing secondary data should suffice to generate better mirco-level understanding of urbanization and housing in a more scientific fashion.

CHAPTER II

TRENDS AND PROCESSES OF URBANIZATION

2.1 Introduction

In understanding the process of urbanization at the regional level, this chapter is an attempt to analyse five important dimensions. They are, the general urban scenario, degree of urbanization, tempo of urbanization, migration to urban areas and functional classification of towns. The brief on Karnataka's urban scene presents a comparative picture of state and national averages of three indicators, viz., Density factors, Population distribution and Growth of towns. The degree of urbanization has been measured using three different techniques. The percentage of urban population to the total population and ratios of urban-rural populations have been computed to make a direct explanation of the degree of urbanization. Another technique viz., 'city size of the median inhabitant' has been used to measure the degree of urbanization based on the urban concentration.

Some of the basic assumptions examined while analysing degree of urbanization are - (a) There exist serious inter-district variations in the degree of urbanization. This is mainly because of growth and developmental activities being generated at a few places like Bangalore, Hubli-Dharwar etc., and so the process of urbanization triggered a few decades

ago at these places, have continued to facilitate only their growth. (b) The above said phenomenon of persisting higher degrees of urbanization in only a few districts is due to the growth of a few urban centres in those districts. Precisely high degree of urbanization is caused by one or two important cities in a district. This can be true to other less urbanized districts also to some extent, because of greater share of urban population being concentrated at the district headquarter.

To supplement the aspect of degree of urbanization, tempo of urbanization has been discussed using two techniques. The first one, 'annual growth rates of urban population' explains the speed at which different districts are experiencing the process of urbanization. The second technique, 'annual rates of exponential change in the ratio of urban-rural population' explains change in the number of urbanites to the rural population. The patterns of migration to urban areas has been analysed observing inter-district variations in movement of four types of people viz., migration from rural to urban and urban to urban areas originating within and outside Karnataka. One of the important assumptions examined in this section is that, the movement of people in the state is towards only a few districts experiencing large scale developmental activities and there is a concentration of migrants in some districts. The concentration of migrants has been measured by obtaining proportion of migrants in a district to the total

migrants in the state.

The process of urbanization and development are closely related to the types of local urban economies in operation. The generation of developmental activities in urban areas bring greater complexities and they are manifest in the structural patterns of workforce employment. "India's developing economy the nature and volume of her investments in the non-agricultural sector,..... the fast developing economic and social situations favouring migration of population from one area to another, from country to the town and from one town to another, ... the common mind between industrialization and urbanization"[1] demand functional classification of towns. The classification also helps in finding the possible influence of agriculture, industry and service sectors on the urbanization process. The dual advantages of examing a town's functional specialization as well as degree of diversification in the local urban economy, make Mitra's technique of functional classification preferable. Thus the whole chapter is to analyse urban processes and explain possible reasons, later to prepare a ground for discussion on the housing aspects. For ultimately the demand for housing does arise out of a strong market system assuring employment and income. The

---

1. A. Mitra and others, Shifts in the Functions of Cities and Towns of India, 1961-71 (Abhinav Pub., New Delhi, 1981), p.1.

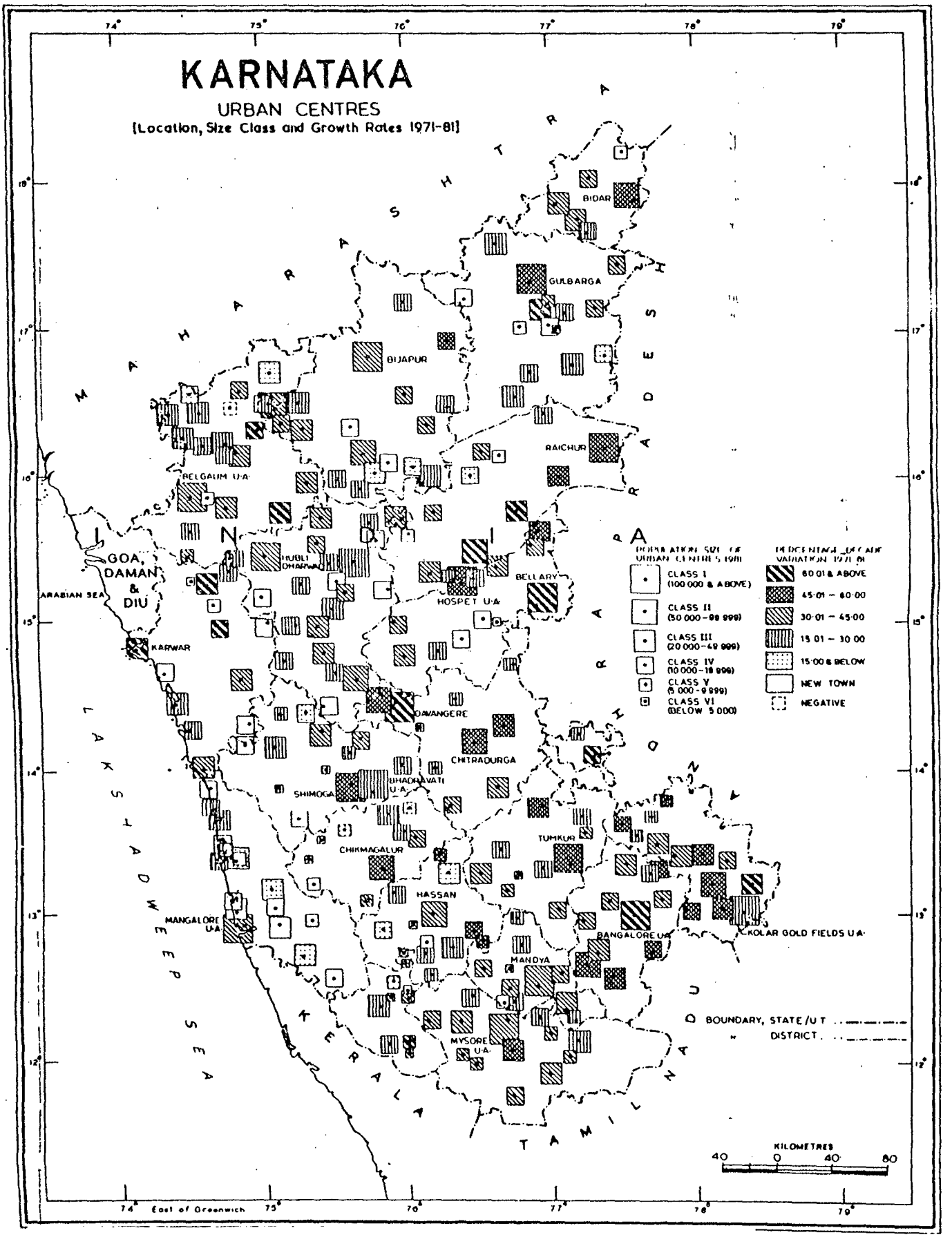
local economies exhibiting imbalances in sectoral employment and adequate potentials for growth and development can be identified.

2.2 The Urban Scenario

Karnataka having an urban population of 28.89 per cent in the year 1981, falls in the category of highly urbanized states of India. It stands nineth among the states in the country. It is below Maharashtra, Tamil Nadu and Gujarat having urban population of 35,33 and 31 per cent respectively in 1981. The neighbour states of Kerala and Andhra Pradesh are less urbanised than Karnataka. A pretty higher level of urbanization in Karnataka than the national averages during the decades of 1961-81 give a notion that it is also one of the developed states. There are altogether 17 cities, 75 medium towns and 158 small towns in the state in 1981 (Map 2.1). A classwise comparative analysis of urban areas between the state and national averages depict several similarities and dissimilarities.

Density Factors:

The density figures in the cities of Karnataka being 3052/km^2 in 1961 and 6651/km^2 in 1971 compared to the national averages of 5393/km^2 and 5330/km^2 for the same years, suggest



Source: India Census, 1981, Karnataka:General Population Tables, Part II-A.

a higher intensive growth of cities in Karnataka and also higher intensive use of urban land in 1971 over 1961. This can be attributed to a significant reduction in the urban land of cities from 23.22 percent in 1961 to 20.23 per cent in 1971 for Karnataka as against a gradual increase in the land for Indian cities. The density averages for medium towns of Karnataka also suggest a slightly more intensive use of land compared to the national averages due to the same reasons. A larger share of urban land is available in the class IV towns of Karnataka and so they indicate less intensive use of land compared to the national averages in the same class. The situation in the class V and VI towns of Karnataka is similar to that of cities and medium towns suggesting more intensive use of urban land due to the same phenomenon of lesser share in the net urban land.

Population Distribution:

In the classwise distribution of population there seem no significant contrasts between the state and national sizes, excepting marginal differences. In the case of class I cities of Karnataka, the share of urban population looks stabilized at 51 per cent in 1971 and 1981 after a significant hike from 41 per cent in 1961. At all India level, the share has grown steadily from 56 to 60 per cent during the same period. The share of urban population in class II towns of Karnataka shows a marginal improvement in 1981 after a significant fall in 1971 over 1961 as against a stabilised

share of 11 per cent at India level. The decline pattern in the share of urban population in class III towns of India is not observed in Karnataka for the towns of same class. However the decline pattern of urban population of smaller towns of India is observed for Karnataka too. The overall picture is that the classwise distribution of urban population in Karnataka look slightly even, compared to national pattern. Relatively higher share of urban population in class III and IV can be regarded a healthy trend in Karnataka.

The pattern of classwise urban population distribution, marginal reduction in the urban land of certain size classes in Karnataka as against a gradual and proportionate increase in land for Indian cities and towns, confirm the view that cities and towns of Karnataka have grown more intensively than the national patterns. Perhaps this gives us an insight into the problem of relative scarcity of urban land for housing and possible congestion in urban Karnataka.

Growth of Towns:

The growth in the number of towns of Karnataka and India as a whole depicts certain similarities and dissimilarities. The growth of cities in Karnataka has picked up only after sixties as against a gradual increase for India. This is because of the growth already attained in the country. The growth rate of cities in Karnataka is slightly sharp

after sixties since the percentage share of cities to total number of towns goes up by 4 from 2.66 in 1961 to 6.8 in 1981 as against 2 per cent increase for India, from 4.6 to 6.66 per cent during the same period. A significantly lower percentage of class II towns in Karnataka compared to India show a marked difference. Perhaps this is due to a faster rate of shift of the class II towns into class I cities and slow rate of growth in class II towns to become class II towns. The growth of class I cities in Karnataka supports this view. An increasing trend in the growth of class III and IV towns of Karnataka and India is similar but the growth of towns in these two classes of Karnataka is slightly more rapid. Another similarity is that the growth of class V and VI towns has declined in both the cases significantly. The share of class V towns reduces by almost 10 per cent, from 26.38 to 16.81 per cent for Karnataka and by 8 per cent, from 30.9 to 22.87 per cent for India during 1961-81. The share of class VI towns have declined rapidly in Karnataka and by 1981 there are almost same proportion of towns in both the cases. This supports the assumption that the small towns are disappearing fast either into next size in the heirarchy or getting declassified.

2.3 Degree of Urbanization

Karnataka's fairly higher level of urbanization has had significant inter-district variations. This would be evident from the varying levels of urbanization and related

developmental activities as well as the urban growth taking place in various districts. The dgree of urbanization, often referred to as levels of urbanization, has been measured for a period of three decades during 1961-81 (Table 2.1 and Map 2.2).

During the period of reference, all the districts show a pattern of increasing urbanization, whether marginal or significant excepting Coorg where the size of urban population is stagnant. Shimoga and Kolar experience a slump in 1971 but pick up in 1981. Bangalore, the district of state capital is the highly urbanised district in the state. Obviously this is due to the tremendous urban growth that the Bangalore metropolis is experiencing. Though the growth rate of Bangalore is not conspicuous during 1961-71, it is during 1971-81, since the urban population of the district has increased by 9 per cent from 55.44 to 69.54 per cent. The phenomenon of urban growth in Bangalore district could also be attributed to the levels of urbanization prior to sixties as well, mainly because of Bangalore city's growth. Today the whole urban policy of the state seems to be explained and directed with reference to the developments in Bangalore district in general and so called emerging metropolis of Bangalore in particular. Good number of studies and papers confined to the growth patterns of Bangalore city support this view.[2] Added to the advantages

---

2. V.L.S. Prakasa Rao and Tewari, Structure of Indian Metropolis: A Study of Bangalore. (Allied Pub., New Delhi, 1979).

Table 2.1 Karnataka: Degree of Urbanization (Urban Areas, 1961-81)

Sl. No.	Districts	1961 UP	1961 R	1961 Rank	1971 UP	1971 R	1971 Rank	1981 UP	1981 R	1981 Rank
1.	Bangalore	54.20	1183	1	55.44	1244	1	64.54	1820	1
2.	Belgaum	18.10	219	8	20.54	258	8	22.52	290	11
3.	Bellary	22.56	291	6	27.15	372	3	33.04	493	3
4.	Bidar	12.24	139	16	14.46	168	16	17.81	216	14
5.	Bijpur	18.87	232	7	21.21	269	6	24.09	317	8
6.	Chikmagalore	14.97	176	13	15.62	185	13	17.53	212	15
7.	Chitradurga	17.37	210	11	20.25	253	10	23.50	307	9
8.	Coorg	13.22	152	15	15.51	183	14	15.51	183	17
9.	Dharwar	26.89	367	2	31.51	460	2	35.24	544	2
10.	Gulbarga	16.17	193	12	17.78	216	11	22.86	296	10
11.	Hassan	12.00	136	17	13.55	156	18	14.62	171	18
12.	Kolar	22.73	294	5	20.65	260	7	22.45	289	12
13.	Mandya	11.12	125	18	13.76	159	17	15.52	184	16
14.	Mysore	24.82	330	4	25.47	341	4	27.41	377	4
15.	N. Canara	17.52	212	10	17.72	215	12	25.35	339	6
16.	Raichur	14.59	170	14	15.36	181	15	19.26	238	13
17.	Shimoga	25.59	343	3	23.61	309	5	25.72	346	5
18.	S. Canara	17.92	218	9	20.27	254	9	24.47	323	7
19.	Tumkur	10.16	113	19	11.71	132	19	13.76	159	19
20.	State	22.31	287		24.31	321		28.89	406	

Note: Measured as share of urban to total population and urban-rural ratio.

UP : Percentage of urban population.
R : Urban-rural ratio.

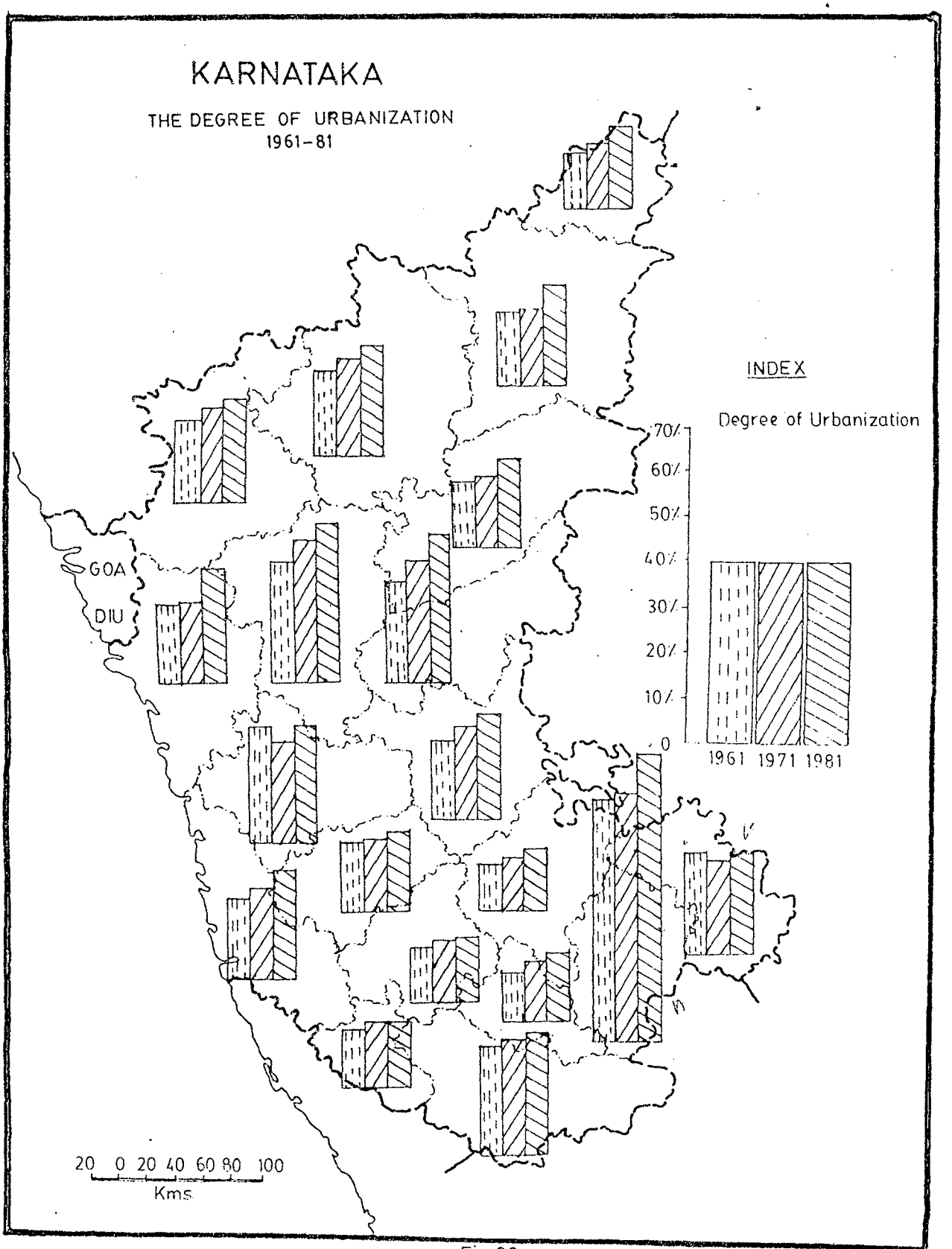

KARNATAKA
THE DEGREE OF URBANIZATION
1961-81
INDEX
Degree of Urbanization
70%
60%
50%
40%
30%
20%
10%
0
1961 1971 1981
GOA
DIU
20 0 20 40 60 80 100
Kms

Fig. 2.2

of being the district of state capital, the establishment of key public sector undertakings and premiere institutions of Research and Development in Science and Technology in the much acclaimed Air-conditioned city, have contributed to the emergence of Bangalore as a highly urbanised district. Therefore the whole gamut of problems in the preparation of an urban policy regarding dispersal, development and planning in the state come to be centred round on a sound policy for Bangalore district and the still growing Bangalore metropolis. The growing share of Bangalore district in the net urban population of the state from 25.77 per cent in 1961 to 26.19 per cent in 1971 and then to 29.76 in 1981, confirms the hypothesis that urban concentration in Bangalore is on the increase and calls for a serious concern. For all other districts, the levels of urbanization range between 10.16 to 26.89 per cent, 11.71 to 31.51 per cent and 13.76 to 35.24 per cent minimum for Tumkur and maximum for Dharwar respectively during 1961-81. Next to Bangalore, Dharwar in the northern maidan has continued to urbanize as a second highest urbanized district in the state. Probably Dharwar is the only district showing a phased fashion in urban growth, from 26.89 per cent in 1961 to 31.51 per cent in 1971 and then 35.24 per cent in 1981. It has been able to grow faster than Mysore, due to the growing primacy of Hubli-Dharwar urban agglomeration in the northern maidan after sixties. Tumkur has continued to grow at a slow pace

and remain least urbanized district with sizes of urban population that are less than state average as well as India averages during all the three decades. The phenomenon of law paced urbanization in Tumkur can be hypothetically explained by two factors. Perhaps proximity of Tumkur to the growing metropolis has caused huge migration to Bangalore rather than to the urban areas in the district itself. In addition, Tumkur has an important national highway running through the whole district to connect Bangalore city in the south and Poona in the north. The district headquarter of Tumkur (Tumkur town) has had a railway connection too. May be this well connected transport network has facilitated movement of people to the urban areas outside the district i.e. to Bangalore city in particular. The phenomenon of least urbanisation i.e. less than national average is seen in Bidar, Chikmangalore, Coorg, Gulbarga, Hassan, Mandya and Raichur in 1961. The reasons for lesser urbanization in the Maland districts of Chikmagalore and Coorg can be explained as a result of smaller size total population, lack of better transport in the hilly areas and the existence of huge spiece and commercial plantations. Their persisting phenomenon of lesser urbanization even in 1971 and 1981 can be attributed to its intermediate position between two important cities i.e. Bangalore and Mysore which were dominating the urban scene during late fifties. Another reason is that Mandya is an agricultural district and can easily obtain urban

benefits from Bangalore and Mysore cities. Also the migrants may move to Bangalore or Mysore, rather than to the urban centres within the district, as in the case of Tumkur. The cases of Bidar, Gulbarga and Raichur in the northern maidan, can be explained as a result of relative backwardness in agriculture, lack of infrastructure needed for urban areas like Bangalore, Mysore in the south, Hyderabad (Andhra Pradesh) in the eastern side and Poona in the north-west during the pre-independence years. However Gulbarga's pace has picked up during 1971-81 due to the growth of textile industries in household as well as factory sector and also several mineral based industries. The recent establishment of a university for higher education and further growth of industrial activities may contribute to a rise in the degree of urbanization. The districts of Belgaum, Bellary, Bijpur Chitra durga, North Canara and South Canara are the ones showing degree of urbanization above the national average but below the state average in 1961. The district of Dharwar, Kolar, Mysore and Shimoga are highly urbanized districts showing higher percentage of urban population than the state average in 1961.

Mysore's higher level of urbanization can be attributed to its importance prior to the independence days and upto the beginning of sixties. Large scale mining activities in the districts of Kolar and Shimoga have boosted urban

growth in these districts. However they experience slump in the urban growth in 1971 probably because of decline in the employment opportunities in the two mining cities - Kolar Gold Fields and Bhadravati, located in Kolar and Shimoga respectively. The decadal rate of decline is around 2 per cent for both the districts. Hwever the urban growth in these two districts has picked up during seventies to show higher urban population in 1981. Obviously the establishment of public sector undertaking like Bharat Earth Movers Ltd., at Kolar Gold Fields, rise in the prominance of other towns like Bangarpet, Chikballapur in Kolar district; establishment of several forest-based and agro-based industries like paper and sugar in Bhadravati area, in Shimoga district, must have helped in the urban growth during the seventies.

In 1971 excluding Bangalore, the range of inter-district variation in the degree of urbanization is 11.71 per cent minimum (for Tumkur) and 35.51 per cent maximum (for Dharwar). Again Bidar, Chikmagalore, Coorg, Gulbarga, Hassan, N. Canara, Raichur and Tumkur are the nine districts showing levels of urbanization below national average. The districts of Bidar, Chikmagalore, Coorg, Hassan, Mandya and Tumkur have continued to remain below the national average in 1981 too. This indicates how the process of urbanization has continued to intensify in the core urban areas of the state like Bangalore, Mysore, Hubli-Dharwar,

Shimoga and Belgaum. Only Gulbarga has moved to reach nearer to the state average. One of the districts that needs special mentioning in 1971 is Bellary for its significant urban growth. The urban growth in this district is definitely due to the growth of two important towns, vis. Bellary and Hospet. This district, which was 6th highest urbanized in 1961 leaps to usurp the 3rd place of Shimoga in 1971. Increase in the mining activities and growth of several agro-based industries, specially sugar manufacturing must have helped urban growth. Further it would also be evident in the following analysis as to how agricultural towns have also influenced the dgree of urbanization in the district. The Tunga-Bhadra river project, regulated market and warehousing facilities in Bellary district seem to have helped the growth of agricultural towns. Therefore, Bellary exhibits greater potential for growth and development in the long-run for parts of northern maidan and help towards a reduction in disparities in the levels of urbanization between northern and southern maidan. Coorg is the only district that has shown no change in the size of urban population in 1981 over 1971.

In 1981 apart from Bangalore, Bellary and Dharwar, there are no other districts showing higher levels of urbanization. Despite Bangalore's persisting urban growth, the process of accentuated urban growth seems to have triggered in Bellary and Dharwar in a larger scale. In these

two districts as we find in the functional classification, the urban growth can be explained as a result of two factors like increased industrial activities at certain nodal centres as well as growth of agricultural towns in larger number. Further, the emergence of Gadag-Betageri as a class I town in Dharwar would probably balance the concentration or urban population in the district and also intensify urbanization. Improvement in the case of S. Canara's urbanization can be mainly due to the growth of Mangalore as an important port city in the state. Manufacturing of roof tiles in the non-household and tobacco beedies in the household sector being the traditional activities in Mangalore, they contribute to urban employment and growth. Establishment of port trust, fertilizers industry and oil refinery have accentuated urban growth and would accentuate further. Creation of a national highway along the coastal line and a new rail connection between Bangalore city and Mangalore city has already reduced the 'isolation'[3] of coastal region with the mainland. Further growth in the traffic on these transport net-works hold better promise for the growth of several important towns of lower order.

However, to make a comment on the growth prospects for northern maidan as against southern maidan, there are

---

3. A.T.A. Learmonth and L.S. Bhat (eds.), Mysore State: An Atlas of Resources, vol. 1 (Asia Pub. New York, 1961), p. 233.

better chances. Compared to the levels of urbanization in the districts of northern maidan during previous decades, now they show greater potentials for the intensification of the process. The development of regional centres like Gulbarga, Bijpur, Bellary, Raichur and Dharwar would definitely reduce the disparities in the levels of urbanization. The upper Krishna river Project and emergence of large scale spinning mills in Bijpur district hold better prospects. It is difficult to predict urban growth prospects for the Malmad districts of Chikmagalore, Coorg and N. Canara. The coastal parts of North Canara already show an improvement in the number of towns and their population.

To supplement the discussion on the levels of urbanization, we can also examine another simple index showing the ratios of urban-rural population in a district. The index explains the number of urbanites available per thousand rural population in a district. The ranking made on the basis of the percentage of urban population to the total population do not differ with this index and the levels of urbanization that can be inferred from this index is in consonance with the previous index. Therefore there arises no need for further explanation of possible factors influencing the levels of urbanization once again.

Now it is evident that it has not been possible to infer any idea regarding urban concentrations in a district. To support the argument made earlier that the levels of

urbanization in a district are directly influenced by the growth of one or two prominent urban centres, an analysis can be made using the technique viz. "locality size of median inhabitant". With this technique, it would be possible to explain the levels of urbanization by taking urban concentrations into account. Applications of this technique projects slightly a different picture in the levels of urbanization, though not a completely divergent phenomenon. The advantage here is that it helps in understanding a peculiar dimension of urban concentration as well. The basic assumption of this technique is that larger the locality size of median inhabitant, higher would be the level of urbanization. Once again it should be remembered that the levels of urbanization to be discussed now do not exactly conform with the ones discussed earlier (Table 2.2).

According to this technique Bangalore, Mysore, Kolar and south Canara are the four districts having larger locality sizes of median inhabitants in 1961 with concentrations of more than half of the district's urban population in one city. Bangalore is an extreme case of concentration with more than 80 per cent of the district's urban population in Bangalore city. The cities of Kolar Gold Fields, Mysore and Mangalore have had concentrations ranging between 50-61 per cent in their respective districts. Now though one is not concerned about the level of urbanization, the striking point would be to note the magnitude of urban concentrations

Table 2.2 Karnataka: Degree of Urbanization (Urban Areas, 1961-81)

Sl. No.	Districts	Locality size of Median Inhabitant 1961	Rank	1971	Rank	1981	Rank
1.	Bangalore	(1093798)	1	(1653779)	1	(2921751)	1
2.	Belgaum	28828	11	34730	11	43553	2
3.	Bellary	62830	6	79125	5	82112	5
4.	Bidar	17929	12	39566	8	44640	10
5.	Bijpur	36802	9	36697	9	44620	11
6.	Chikmagalore	16181	15	22003	15	25730	18
7.	Chitradurga	40940	7	79729	4	95177	4
8.	Coorg	7403	19	7628	19	10482	19
9.	Dharwar	90992	5	379166	2	(527108)	2
10.	Gulbarga	39519	8	47251	7	46620	9
11.	Hassan	12946	18	20964	16	31759	16
12.	Kolar	(146811)	3.	33016	13	48155	8
13.	Mandya	13319	17	18700	18	38378	13
14.	Mysore	(253865)	2	(355685)	3	(479081)	3
15.	N. Canara	17064	13	22390	14	27694	17
16.	Raichur	15611	16	35995	10	59917	7
17.	Shimoga	35354	10	58341	6	76524	6
18.	S. Canara	(141591)	4	32412	12	34283	14
19.	Tumkur	16482	14	19617	17	35821	15

Note: Measured as 'Locality Size of the Median Inhabitant'. The figures in parenthesis indicate actual size of population.

from the point of view of urban land, housing, services, infrastructure and urban congestion that may arise due to heavy concentration. The districts of Dharwar, south Canara and Bellary are the next highly urbanised districts in 1961 with locality sizes ranging between 62,000 - 90,000 population. The magnitude of this concentration also indicate that these districts are on their threshold of becoming districts of larger concentrations. 'Rest of the districts in 1961 show smaller locality sizes ranging between 7403 - 40,000 meaning lesser urban concentration and an absence of one town influence on the levels of urbanization.

In 1971, Bangalore and Mysore continue to exist as districts of heavy urban concentrations. The districts of Kolar and south Canara disappear as districts of heavy urban concentration and made a slash fall to 13th and 12th ranks in locality sizes. One possible explanation for the decline of Kolar may be, a serious decline in the employment opportunities at Kolar Gold Fields, the then class I city of major mining activity in the state, also rise in the prominance of other towns like Kolar town, Bangarpet and their population significantly. Though the locality size for Kolar improves in 1981, the district shows a clear dispersal of population in other towns. The case of south Canara may be explained as a result of the emergence of Kundapur and Udipi along the coast line as class III towns in 1971. The level of urbanization in terms of urban

concentration further declines for south Canara in 1981. In addition to the continuance of Kundapur and Udipi as class III towns, a good number of class III towns like Bantwal, Karkal, Puttur and Surathkal have prevented urban concentration at Mangalore city alone. The districts referred to be on their threshold of transformation into districts of larger concentration comes true to Dharwar in 1971. Obviously, the concentration in this district is at Hubli-Dharwar city, whose vigorous growth has displaced Mysore as a 2nd larger locality size in the state. Mysore continues to hold 3rd place in locality size in 1981 too because of continuing primacy of Hubli-Dharwar city as a 2nd largest concentration. The emergence of Gadag-Betagari, a manufacturing town in 1971 as class I city in 1981 seem to have made little influence on the dispersion of urban concentration and consequent reduction in the locality size of Dharwar district. However in the long run, the intensification of growth at Gadag-Betageri may stop further concentration at Hubli-Dharwar city, depending upon the structural changes in its economy. For the other districts the locality sizes of median inhabitant range between 7,628 (for Coorg) and 79,729 (for Chitradurga). In 1971, we find no district to be exactly on the threshold of drastic change to become districts of larger locality sizes. The districts of Bellary and Chitradurga seem to take more time to become districts of larger locality sizes.

The same districts of Bangalore, Dharwar and Mysore continue to exist as highly urbanised in 1981 due to urban growth in their respective cities named earlier. The district's urban population has come to be concentrated in these cities to the extent of 62-82 per cent in 1981. The districts of Chitradurga and Bellary now show the signs of quicker transformation into larger locality sizes. Their locality sizes in 1981 are 95,177 and 82,112 respectively. Though we can speculate that Davangere city in Chitradurga district and Bellary city in Bellary district may enhance urban concentration and lead to a larger locality sizes, they may not. For Hospet has emerged as a class I city in Bellary district and may arrest further urban concentration at Bellary city. The strong reasons for this is the rise in the degree of agro-based and non-agro-based industrial activities in and around Hospet. The Tungabhadra river project has already given stimulus to urban growth. Greater influx of people to Hospet area is predictable within a shortrun.[4] The much awaited Vijaynagar steel plant is suppoed to provide further boost to the urban growth of Hospet city.

Therefore a larger locality size in Bellary may not arise. The present developments in the manufacturing and

---

4. H.G. Hanumappa, Urbanization Trends in India: Case Study of a Medium Town (Ashish Pub., New Delhi, 1981).

trade activties in Davangere city of Chitra-durga district seem to have brought the district to the threshold of greater change in locality size. In this case, the industrial activities of Kirloskar Companies and polyfibres production of Birlas at Harihar, a class II town may prevent further concentration at Davangere. The proximity of Harihar and Davangere to each other may of course give rise to the creation of twin city administration as in the case of Hubli-Dharwar city. In addition to the existing agro-based industries like cotton mills, oil mills and sugar mills, trading may develop in a big way at Davangere. Thungabhadra river basin, national highway and a rail connection already existing are bound to change Davangere's economy into a complex urban agglomeration. Further speculation on greater developmental activities at Davangere, can be based upon its central location and most favourable regional accessibility. The city of Davangere being close to the 'Geometric Centre'[5] Harapanahally, (decided using 'centroid method') shows greater potential for becoming an important nodal place in the state. Now reversing back to the analysis of urbanization based on locality sizes, we find rest of the districts with locality sizes, ranging between 76,524 for Shimoga and 10,482 for Coorg. A significant difference in this index is, we find

---

5. A.T.A. Learmonth and L.S. Bhat, (eds.), Mysore State: An Atlas of Resources (Asia Pub., New York, 1961), vol. 1, p. 236.

Coorg to be least urbanized district instead of Tumkur. However a comparison of their ranks under all types of techniques used so far confirm that both are not significantly urbanized.

2.4 Tempo of Urbanization

Tempo of urbanization relates to the growth in the size of urban population during a period of time. However, the rates of tempo being derived from the same figures computed to measure the levels of urbanization, they tend to explain same patterns of urbanization due to the various reasons discussed in the preceding analysis. The patterns of increase and decline and the phenomenon of inter-district variations in the level of urbanization are again reflected in the concordant rates of urbanization. To illustrate, we can observe a slow growth of urban population during 1961-71 in the district of Bangalore. However Bangalore's leading situation in the levels of urbanization persists and smaller growth rates would suffice to explain the magnitude of actual increase in the population size because of the size of urban population already attained in the year what we used for computation. Significant change in the urban population of Bangalore, both in terms of rate and actual magnitude, is evident from the hike at an annual growth rate of 0.91 per cent per annum. The case of Dharwar

Table 2.3 Karnataka: Tempo of Urbanization (Urban Areas, 1961-81)

Sl. No.	Districts	Annual Growth Rates		Urban - Rural Ratio	
		1961-71	1971-81	1961-71	1971-81
1.	Bangalore	0.14	0.91	5.02	38.05
2.	Belgaum	0.25	0.19	16.38	11.69
3.	Bellary	0.41	0.58	24.55	28.16
4.	Bidar	0.24	0.33	18.94	25.13
5.	Bijpur	0.22	0.28	14.79	16.41
6.	Chikmagalore	0.06	0.19	4.98	13.62
7.	Chitradurga	0.32	0.32	18.62	19.34
8.	Coorg	0.25	-	18.56	-
9.	Dharwar	0.45	0.37	22.58	16.77
10.	Gulbarga	0.17	0.50	11.25	31.50
11.	Hassan	0.15	0.10	13.73	9.18
12.	Kolar	-0.23	0.18	-12.28	10.57
13.	Mandya	0.27	0.17	24.05	14.05
14.	Mysore	0.04	0.19	3.27	10.03
15.	N. Canara	-0.02	0.76	1.40	45.53
16.	Raichur	0.03	0.39	6.26	27.37
17.	Shimoga	-0.23	0.21	-10.43	11.30
18.	S. Canara	0.22	0.42	15.28	24.03
19.	Tumkur	0.17	0.20	15.54	18.61
20.	State			11.19	23.49

Note: Measured as Annual growth rates of urban population and Annual rate of exponential change in urban-rural ratio/1000 rural population.

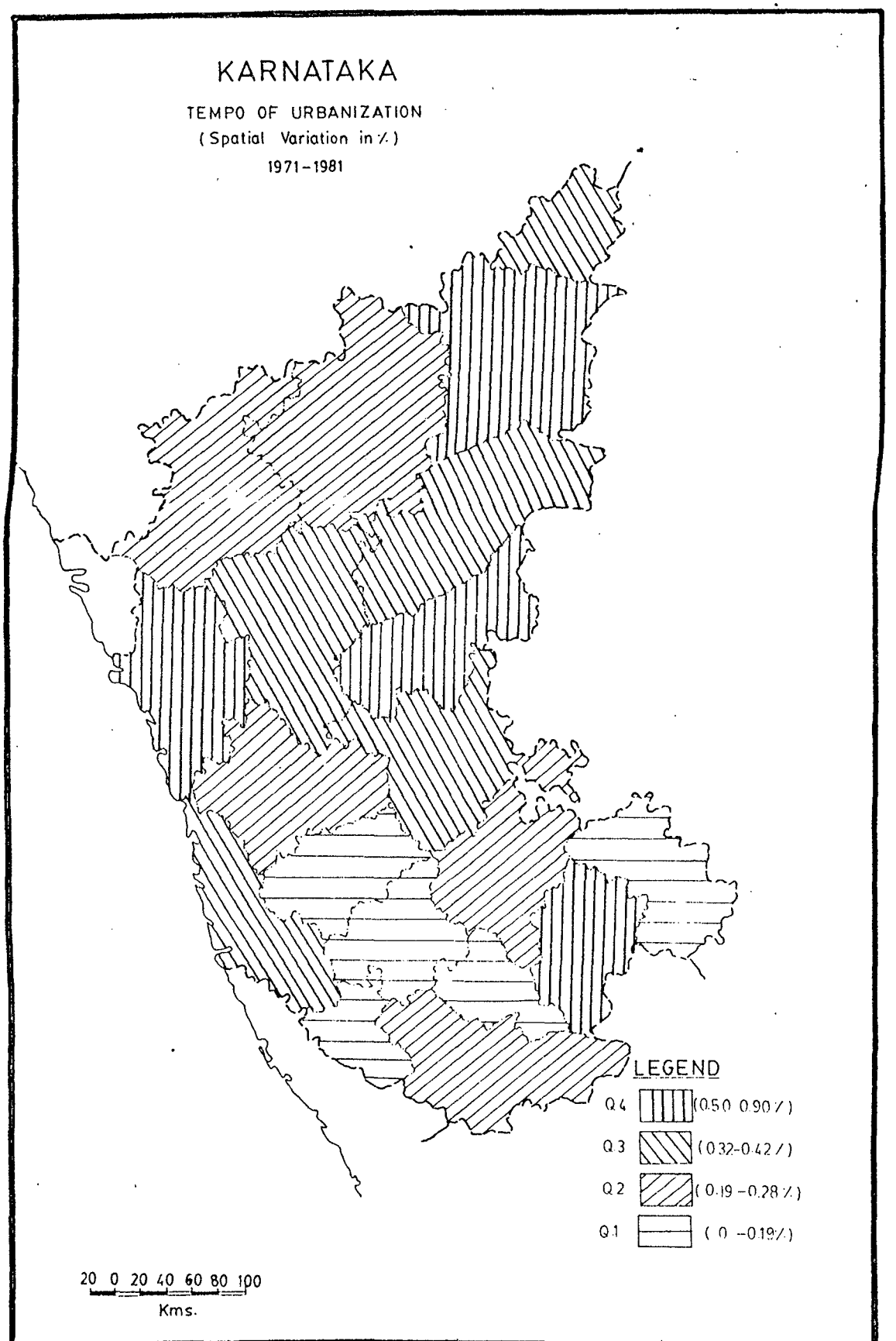

KARNATAKA
TEMPO OF URBANIZATION
(Spatial Variation in %)
1971-1981
LEGEND
Q4 (0.50 0.90 %)
Q3 (0.32-0.42 %)
Q2 (0.19 -0.28 %)
Q1 (0 -0.19%)
20 0 20 40 60 80 100
Kms.

Fig. 23

explains a quantum jump during 1961-71 compared to the magnitude of change during 1971-81 where the tempo has receded significantly (Map 2.3). The annual rates of exponential change in the urbanites per thousand rural people tend to explain the same situation. A drastic change in rate or urban-rural ratio for North Canara should be due to a significant rise in the number of towns, from 8 in 1971 to 13 in 1981 and a relative lesser growth of rural population durin the same period (Table 2.3).

2.5(a) Migration Patterns

A clear relationship appears between the levels of urbanization and the magnitude of migrant population absorbed by different districts in their respective urban areas. Taking the percentage of migrants in the urban areas of a district to the total migrants in the state, we can identify the concentration of migrants (Table 2.4).

$$C = \frac{\text{Urban Migrants of the district}}{\text{Urban Migrants of the state}} \times 100$$

Bangalore as a district of administrative node and industrial agglomeration, has shared 27.53 per cent of the total migrants in the state in 1961, followed by Dharwar, Mysore and Shimoga. Bangalore appears to be the only district attracting large sizes of different types of migrants. Obviously the growing metropolis of Bangalore has thrown open increasing opportuni-

Table 2.4 Karnataka: Migration to urban Areas (District Level, 1961 and 1971)

Sl. No.	Districts	Total Migrants in the District 1961	1971	Concentration 1961	1971
1.	Bangalore	41.5	35.9	27.5	26.1
2.	Belgaum	35.1	30.0	6.1	5.8
3.	Bellary	39.9	30.5	4.0	3.6
4.	Bidar	23.6	25.5	0.9	1.1
5.	Bijpur	36.3	36.3	5.6	5.9
6.	Chikmagalore	43.3	41.5	1.9	1.8
7.	Chitradurga	43.6	41.0	4.5	4.5
8.	Coorg	57.2	51.9	1.1	1.1
9.	Dharwar	37.9	37.2	9.7	10.7
10.	Gulbarga	33.6	29.3	3.7	3.5
11.	Hassan	44.0	41.3	2.3	2.4
12.	Kolar	31.4	31.6	4.5	3.8
13.	Mandya	44.2	41.6	2.1	2.5
14.	Mysore	30.9	31.1	6.2	6.4
15.	N. Canara	42.4	44.1	2.5	2.5
16.	Raichur	30.6	29.2	2.4	2.4
17.	Shimoga	58.7	45.3	7.4	5.4
18.	S. Canara	32.4	31.4	4.4	4.3
19.	Tumkur	39.5	41.7	2.6	3.1
20.	State	38.3	36.0	100	100

Note: Percent of total migrants to the district urban population and total migrants in the state i.e. concentration.

ties and scope for employment including better metropolitan services. The magnitude of migrant population heading towards other districts ranges between 0.93 per cent for Bidar and 9.73 per cent for Dharwar. The distribution of migrants among the districts also suggest that migrants are heading towards a few districts causing urban growth only in those districts. Perhaps this pattern also indicates the growth potential being generated in a few districts . For once we accept the argument that highly developing districts attract more number of migrants, the personal knowledge about the important cities in those districts lead to a conclusion that within those districts, there are few urban centres attracting migrants in a large scale. This can be supported further when we analyse migrants to cities in particular.

The migration pattern follows a similar fashion in 1971 with a marginal difference. The difference is a marginal decline in the percentage of migrants attracted by Bangalore as against a marginal increase in the case od Dharwar. The decadal decline for Bangalore is by 1.36 per cent as against a hike for Dharwar by 1 per cent. However the existing wide gap between the percentage share of Bangalore and Dharwar indicate that Bangalore still continues to exist as a district of hope for employment and prime attraction. Small variations in the percentage share of

migrant population among all other districts suggest that they still lack greater employment opportunities. Therefore facilitating urban growth and employment in other district would become dependent largely upon generating growth and exploiting the potentials of other districts. Excluding Bangalore, Dharwar and Mysore, the percentage share of other districts in the total migrant population varies between 1.18 per cent for Bidar (Coorg also) and 5.82 per cent for Belgaum.

A cross-section examination of thetypes of migrants heading towards different districts would further reveal their origin and also where the migrants are heading to. The categories of migrants can be Intra-state rural to urban, Intra-state urban to urban, Inter-state rural to urban, Inter-state urban to urban and international migrants to urban areas in the district. The percentage share of each category is derived by -

$$P_i = \frac{\text{Number of i category of migrants}}{\text{Net migrants in the district}} \times 100$$

There has been a significant variation in the sizes of migrants coming from rural areas to urban areas. In 1961, Bangalore, Bellary, Kolar and Shimoga are the districts which have drawn less than 40 per cent of migrants from intra-state rural areas whereas other districts have drawn intra-state rural migrants in a large scale. The lesser

percentage share in the intra-state rural migrants to the urban areas of the above mentioned districts seem to have been compensated by a larger share in the inter-state rural to urban migrants. The districts of Bangalore and Bellary have received considerably bigger sizes of inter-state urban migrants as well.

An assumption that the intra-state rural-urban migration would consist of largely inter-district rural to urban but not intra-district rural to urban, would allow us for a separate explanation about the intra-state rural to urban migration in Bangalore, Bellary, Kolar and Shimoga. Based on this assumption we can hold that intra-state rural to urban migrants in these districts are quite smaller compared to the other districts because, these were the districts well developed during 1961 and had better transport network. Also due to the proximity to urban centres and easy commuting distance, there does not arise a need to change a person's rural residence to urban residence though one is working in an urban centre. The greater magnitude of inter-state rural to urban migrants in the above mentioned all districts and inter-state urban to urban migrants in Bangalore and Bellary, can be explained as a result of state reorganization in fifties and also growing employment opportunities. The districts of Bangalore and Kolar being border districts to Tamil Nadu and Bellary

to Andhra Pradesh the reason for larger size of inter-state migrants is understandable. However in the case of Shimoga it is difficult to explain the probable causes for inter-state rural to urban migrants to the extent of 23 per cent. However ruling out the cause of state reorganization, the only practical explanation for larger inter-state rural to urban migration in Shimoga district would be the growth of industrial activities, specially mining (Bhadravati Iron and Steel Factory) in Shimoga district.

The percentage of intra-state rural to urban migrants in all other districts ranges between 43.15 - 65.92 per cent. This suggest that excluding Bangalore, Bellary, Kolar and Shimoga, the rest of the districts did not have prominant urban centres attracting inter-state rural to urban migrants and so have been able to draw mainly intra-state rural to urban migrants. These are the same districts which again show greater number of intra-state urban to urban migrants unlike Bangalore-Bellary set of districts. This results in a lesser percentage share of inter-state migrants for all other districts and leads to conclusion that the districts other than Bangalore, Bellary, Kolar and Shimoga did not possess greater dynamism and opportunities. Thus the whole composition of migrant population in 1961 among the districts excluding Bangalore, Bellary, Kolar and Shimoga is made up of intra-state rural to urban followed by larger shares

of intra-state urban to urban. The composition of migrants in the districts mentioned is a blend of intra-state and inter-state consisting both rural to urban and urban to urban in significant sizes. Therefore there appears a greater inter-district variation in the distribution of inter-state migrants among the districts since they are found in large number in a few districts. The movement of international migrants (a small number of unclassifiable migrants are clubbed into this group in 1961) to various districts show a high variation between 0.12 - 2.36 per cent. The district of Bidar shows 2.36 per cent of international migrants which is maximum in the state. However this figure does not seem to reflect an actual situation. Based on the larger size of total migrants in Bangalore district, we can infer that, 1.6 per cent of international migrants in Bangalore form larger group and large number of international migrants have moved to Bangalore district.

In 1971 again, we find most of the districts drawing migrants largely from intra-state rural areas, excepting Bangalore, where they form slightly more than 30 per cent of the net migrants in the districts (Map 2.4). In fact the share of intra-state rural to urban in Bangalore has declined in 1971 over 1961 meaning an increase in the other types of migrants. Otherwise we find large number of intra-state rural to urban and urban to urban migrants in other districts. The districts of Bellary, Chikmagalore, Coorg, Kolar, Mysore, and Shimoga are the districts showing intra-

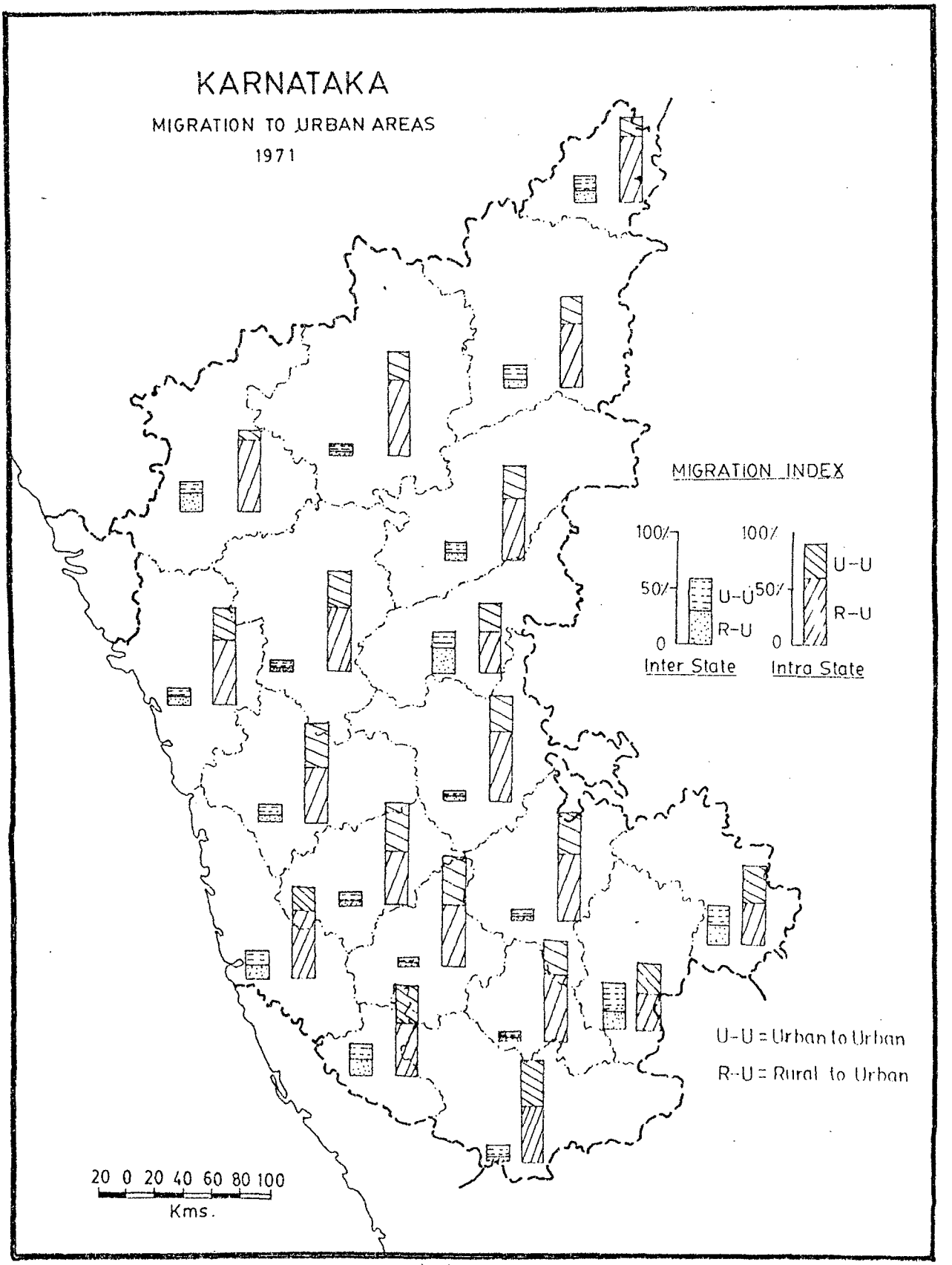


Fig. 2·4 (f) International Migrants form Negligible Size. The range is 004-115%.

state rural to urban migrants in the range of 36.75 - 49.07 per cent. The rest of the districts show more than half of the net migrants to be intra-state rural to urban. The lesser share of intra-state rural to urban migrants in Bangalore, results in a mixed composition of all the four types of migrants. Next to Bangalore, Bellary is the one showing greater flexibility in receiving both intra-state and inter-state migrants to make a mixed composition in 1971. The districts of Coorg, Chikmagalore, Kolar, Mysore and Shimoga show larger shares in intra-state urban to urban migrants. The decline in inter-state migrants to Kolar and Shimoga in 1971 indicate that they are no more attractive to inter-state migrants. An increase in intra-state urban to urban migrants indicate that they are no preferred by intra-state urbanites may be because of established infrastructure and facilities.

Inter-state rural to urban migration is comparatively significant in Belgaum, Coorg and Kolar (despite a marginal decline). Belgaum city's existence just on the border line of Maharashtra and being quite nearer to Goa attract people from these states. Coorg receives plantation workers from neighbouring Kerala to its small towns.

The inter-district variations in the intra-state urban to urban migration appear comparatively lower. The variations in the inter-state urban to urban migration are higher. In short, the migration phenomenon in 1971 appears

similar to that of 1961 showing a few districts of mixed composition of all four categories, supporting that still only a few districts in the state hold better promises for employment. Even in 1971 the international migrants have moved to a select number of districts like Bangalore, Mysore, Belgaum and Gulburga.

The overall fashion for both decades is quite similar. There are high inter-district variations in the inter-state migrant categories, lesser but significant variations in the movement of intra-state migrants and very high variations in the movement of international migrants.

2.5(b) Migration to Cities

The rates of migration to the cities in Karnataka confirm one of the arguments made in the early part of this chapter that the whole phenomenon of the levels of urbanization of several districts, is highly influenced by urban growth of particular cities. We can obtain the size of migrants moving into a particular city as follows for inter-city comparisons (Table 2.5).

$$Sm = \frac{(\text{Net migration - city})^t}{(\text{Net migration-District})^t} \times 100$$

Bangalore district is an extreme case where, we can conclude that its levels of urbanization is completely govered by the growth of Bangalore agglomeration. Perhaps it is also

Table 2.5 Karnataka: City-ward Migration, 1961 and 1971

Sl. No.	Cities	Percent of migrants to city's population		Percent of city migrants to total District migrants	
		1961	1971	1961	1971
1.	Bangalore U.A.	42.1	37.7	81.7	92.9
2.	Mysore city	32.6	31.8	64.4	68.6
3.	Hubli-Dharwar	38.9	38.5	33.5	53.2
4.	Kolar Gold Fields	32.4	27.7	51.6	32.6
5.	Belgaum U.A.	36.5	39.0	42.6	55.8
6.	Mangalore U.A.	34.1	33.8	53.5	58.3
7.	Gulbarga city		32.0		50.5
8.	Ballary city		28.6		38.0
9.	Davangere city		40.2		42.5
10.	Bijpur city		38.7		26.2
11.	Bhadravati		49.9		36.0

U.A. : Urban Agglomeration

possible that in other districts where there are no cities, the levels of urbanization is influenced by the growth of district headquarters or any other single large town. In 1961, the levels of urbanization in the districts of Mysore, south Canara and Kolar also seem to have been purely govered by the growth of cities like Mysore, Mangalore and Kolar Gold Fields, since more than half of the net migrants in their districts hage moved to these cities. A same trend follows in 1971 for the cities of Bangalore, Mysore and Mangalore. Migration to Kolar Gold Fields city declines in 1971 due to the reasons explained elsewhere in this chapter. The cities of Hubli-Dharwar, Belgaum and Gulbarga are the ones which have received more than half of the net migrants in the district in 1971 (Map 2.5).

Regarding the origin of migrants and their size to the total migrants in the city, we can classify them as earlier and obtain the size from

$$Si = \frac{\text{Total migrants of i category in city}}{\text{Net migration in the city}} \times 100$$

The cities of Kolar Gold Fields and Bangalore are the ones which have received more than half the migrants from outside the state in 1961. It is true that during the late fifties these were the only two cities in the state showing greater dynamism and avenues for livelyhood for the migrants.

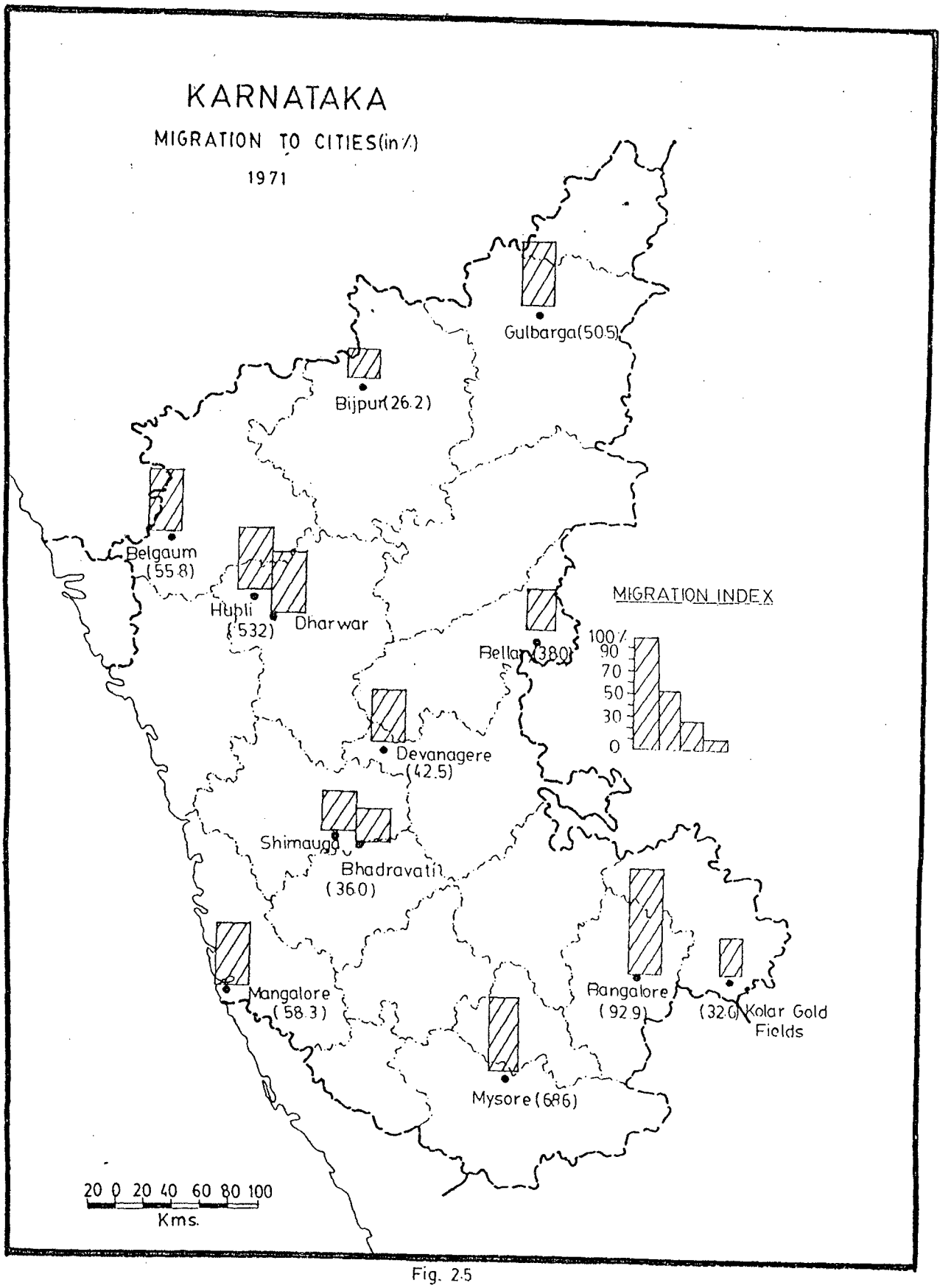

KARNATAKA
MIGRATION TO CITIES(in %)
1971
Gulbarga(50.5)
Bijpur(26.2)
Belgaum
(55.8)
Hubli
(53.2)
Dharwar
Bellary (38.0)
MIGRATION INDEX
100%
90
70
50
30
0
Devanagere
(42.5)
Shimauga
Bhadravati
(36.0)
Mangalore
(58.3)
Bangalore
(92.9)
(32.0) Kolar Gold
Fields
Mysore (68.6)
20 0 20 40 60 80 100
Kms.

Fig. 2.5

Otherwise we find larger shares of intra-state migrants and smaller shares of inter-state migrants in other cities of 1961. Again in 1971, Kolar Gold Fields and Bangalore are the only two cities which have received comparatively smaller intra-state migrants. The sizes of intra-state migrants to Kolar Gold Fields and Bangalore city are 34.67 per cent and 56.21 per cent as against a percentage range of 69 - 91 per cent intra-state migrants in all other cities. Therefore we can conclude that the levels of urbanization is largely governed by single large towns, at least in the districts, which have cities within their boundaries.

2.6 Functional Classification of Towns*

A functional classification of towns based on workforce employment in the state reveals that the phenomenon of urbanization has been a result of significant influence of industrialization, closely follwed by tertiarization and urban growth of agricultural towns. Primarily, 40.6 per cent (93) towns are of industrial base followed by 36.4 per cent (84) of towns with service sector base. This suffices to conclude that urban process in Karnataka is influenced by industry and service. To some extent, it has also been influenced by mere urban growth of settlements in terms of population and density parameters without

---

* Workforce data relates to the year 1971.

structural changes in the workforce employment. For we observe a significant number of towns with agricultural base. A significant size of 20.4 per cent (47) towns support the view that urbanization is also a consequence of urban growth. The phenomenon of urban growth in the agricultural settlements is observed in class IV, V and VI towns indicating that some settlements of lower order have qualified to become 'urban' by satisfying population, density or administrative status criteria. There seem to have been no scope for the growth of towns specialised in the functions of trade and transport. Obviously they are complementary functions to other specializations and they are found as sub-type functions with others (Table 2.6).

Most of the cities in Karnataka are in high service group with medium industry and low trade and transport. The class I cities generally being the administrative headquarters in the district, the combinations of workforce employment tend to be dominated by high services. The class III towns again are dominated by service sector because they are the administrative headquarters at the tehsil level without much of industrial growth. The class II towns are dominated by high industry with other combinations.

The functional diversification of towns in terms of workforce employment do not depict an impressive picture, since there are no sufficient number of towns showing balanced

Table 2.6 Karnataka: Functional Specialization of Towns by Size Class, 1971

Sl. No.	Size Class	FUNCTIONAL SPECIALIZATION							TOTAL
		Service Towns		Industrial Towns		Trade & Transport Towns		Agril.Towns	
		LI,MTT HS	LTT,MI HS	LTT,MS HI	LS,MTT HI	LS, MI HTT	LI, MS HTT		
1.	100000+	0 -	8 (66.6)	3 (25)	1 (8.3)	0 -	0 -	0 -	12 (100)
2.	50000-99999	0 -	2 (22.2)	4 (44.4)	3 (33.3)	0 -	0 -	0 -	9 (100)
3.	20000-49999	1 (2.6)	22 (57.8)	12 (31.5)	2 (5.2)	0 -	0 -	1 (2.6)	38 (100)
4.	10000-19999	2 (2)	28 (28.2)	28 (28.2)	10 (10.1)	1 (1)	1 (1)	29 (29.2)	99 (100)
5.	5000 - 9999	2 (4.3)	13 (28.2)	12 (26)	7 (15.2)	2 (4.3)	2 (4.3)	8 (17.3)	46 (100)
6.	Below 5000	3 (11.5)	3 (11.5)	5 (19.2)	6 (23)	0 -	0 -	9 (34.6)	26 (100)
7.	Total	8 (3.4)	76 (33)	64 (28)	29 (12.6)	3 (1.3)	3 (1.3)	47 (20.4)	230 (100)

Note: Figures in parenthesis show percentage.

Refer Section on Methodology for abbreviations of Functional Specializations.

pattern of diversification. The group of towns in highly diversified category, which are assumed to indicate balanced employment structure, is too small. An healthy trend of harmoneous functioning of industry and service sectors backed up by trade and transport is observed for 14.7 per cent (34) of towns. Around 40 per cent (94) of towns show non-diversification and indicate structural imbalances. Most of the towns in different size-classes, are structurally imbalanced except a number of towns in class I and class II categories. However there arises a doubt that the towns in these two classes now being observed as diversified may soon become towns of one function domination. Therefore a process of stabilizing and maintaining the same diversified atmosphere in these towns becomes necessary (Table 2.7).

Functional specialization of towns at the district level reveals a few reasons for different levels of urbanization, reasoned in the early part of this chapter. In 1971 as well as 1981, Dharwar and Bellary are the highly urbanized districts next to Bangalore. In the case of these two districts we can hold that the process of urbanization is largely due to the urban growth phenomenon in agricultural settlements. Exactly half of the towns in Dharwar and more than half of the towns in Bellary are agricultural settlements which have qualified to become towns on the basis of population parameters. And probably this would suffice to explain the significant deviation from industrialization-urbanization

Table 2.7 Karnataka: Degree of Functional Diversification by Size Class of Towns, 1971

Sl. No.	Size Class	DEGREE OF FUNCTIONAL DIVERSIFICATION					TOTAL
		FHD	FMD	PFA	PFHA	Agril. Towns	
1.	100000+	3 (25)	4 (33.33)	3 (25)	2 (16.66)	0 -	12 (100)
2.	50000-99999	1 (11)	4 (44.4)	4 (44.4)	0 -	0 -	9 (100)
3.	20000-49999	6 (15.7)	6 (15.7)	11 (28.9)	14 (37)	1 (2.6)	38 (100)
4.	10000-19999	12 (12)	23 (23)	17 (17)	18 (18)	29 (29)	99 (100)
5.	5000 - 9999	9 (20)	12 (26)	10 (22)	7 (15.2)	8 (17.3)	46 (100)
6.	Below 5000	3 (12)	6 (23)	2 (8)	6 (23)	9 (34)	26 (100)
	Total	34 (14.7)	55 (23.9)	47 (20.4)	47 (20.4)	47 (20.4)	230 (100)

Note: FHD : Functions Highly Diversified; FMD : Functions Moderately Diversified
PFA : Predominant Function Accentuated; PFHA: Predominant Function Highly Accentuated.

Figures in parenthesis indicate percentage.

Table 2.3 Karnataka: Functional Specialization by Degree of Diversification of Towns, 1971.

Sl. No.	Degree of Diversification	FUNCTIONAL SPECIALIZATION						TOTAL
		Service Towns		Industrial Towns		Trade & Transport Towns		
		LI,MTT HS	LTT,MI HS	LTT,MS HI	LS,MTT HI	LS, MI HTT	LI, MS HTT	
1.	FHD	2 (5.8)	7 (20.5)	13 (38.2)	8 (23.5)	3 (8.8)	1 (2.9)	34 (100)
2.	FMD	2 (3.6)	18 (32.7)	21 (38.1)	14 (25.4)	0 -	0 -	55 (100)
3.	PFD	0 -	19 (40.4)	22 (46.8)	5 (10.6)	0 -	1 (2.1)	47 (100)
4.	PFHA	4 (8.5)	32 (68)	8 (17)	2 (4.2)	0 -	1 (2.1)	47 (100)
	Total	8 (4.3)	76 (41.5)	64 (34.9)	29 (15.8)	3 (1.6)	3 (1.6)	183 (100)

relationship in the highly urbanised districts of the state. The districts of Raichur and Chitradurga too support this view because of significant share in the number of agricultural towns. A tertiarization-urbanization relationship can be observed in the cases of Bangalore and south Canara where service sector dominates with medium industry backing. The districts of Coorg, Hassan and North Canara seem to show industrialization-urbanization relationship. In terms of non-household activities these districts first of all do not have large scale manufacturing industries. However it is possible that household industries in the small and medium towns of these district are leading to industrialization-urbanization relationship. The spice and cofee processing industries and agro-based industries and plantations in Coorg and Hassan must have influenced their level of industrialization. The forest based industries in household as well as non-household sectors in North Canara seem to strengthen the industrialization-urbanization relationship. However it would be surprising to note that in terms of the size of urban population to the total population, these are the districts which are less urbanized. Perhaps this is due to the existence of plantation workers in large number. But contrasting the cases of Dharwar-Bellary type of urbanization with Coorg-Hassan-North Canara type of urbanization may provide clues to the differences between industrial urbanization and urban growth phenomenon.

The districts of Kolar, Shimoga, Belgaum and Bidar also support industrialization-urbanization relationship to some extent. Large scale mining and agro-based industries in Shimoga have lead to urbanization. Gold mining and Heavy Engineering works at Kolar Gold Fields have affected urbanization in Kolar (Table 2.9 and 2.10).

Functional diversification of the towns at the dis trict level indicate significant variations. The districts of Bellary, Chitradurga, Dharwar and Raichur have had less number of diversified towns. This is because more number of towns are found in agricultural category. The districts of Chikmagalore, Hassan, North Canara and Shimoga have had good number of highly and moderately diversified towns. In general we find a small number of towns being highly diversified as against slightly significant number of towns being moderately diversified. And many non-diversified towns. Therefore the issue to be remembered is that of accentuation of specialization in the developing towns, which may lead to disparities and also cause unhealthy growth of settlements as highly specialized settlements. Because highly specialized settlements, and their localization in a few districts are bound to cause infrastructural disparities. It is in the sense that highly specialized settlements tend to draw greater investments and deprive many other districts of investments, infrastructure and employment potential. The growth of

Table 2.9 Karnataka: Distribution of Towns by Functional Specialization (District Level, 1971)

Sl. No.	Districts	FUNCTIONAL SPECIALIZATION						TOTAL
		Service Towns	Industrial Towns			Trade & Transport Towns	Agri. Towns	
		LI,MTT HS	LTT,MI HS	LTT,MS HI	LS,MTT HI	LS,MI HTT	LI,MS HTT	
1	2	3	4	5	6	7	8	9	10
1.	Bangalore	0 -	10 (71.4)	2 (14.2)	0 -	0 -	0 -	2 (14.2)	14 (100)
2.	Belgaum	0 -	7 (38.3)	6 (33.3)	0 -	0 -	0 -	5 (27.7)	18 (100)
3.	Bellary	1 (9)	3 (27.2)	0 -	0 -	0 -	0 -	7 (63.6)	11 (100)
4.	Bidar	0 -	1 (20)	2 (40)	2 (40)	0 -	0 -	0 -	5 (100)
5.	Bijpur	0 -	7 (41.1)	4 (23.5)	1 (5.8)	0 -	0 -	5 (29.4)	17 (100)
6.	Chikmagalore	0 -	3 (33.3)	3 (33.3)	3 (33.3)	0 -	0 -	0 -	9 (100)
7.	Chitradurga	0 -	4 (33.3)	1 (8.3)	2 (16.6)	1 (8.3)	0 -	4 (33.3)	12 (100)
8.	Coorg	0 -	3 (27.2)	5 (45.4)	1 (9)	0 -	0 -	2 (18.1)	11 (100)
9.	Dharwar	0 -	4 (22.2)	5 (27.7)	0 -	0 -	0 -	9 (50)	18 (100)

Contd...

1	2	3	4	5	6	7	8	9	10
10.	Gulbarga	2 (16.6)	6 (50)	2 (16.6)	2 (16.6)	0 -	0 -	0 -	12 (100)
11.	Hassan	0 -	1 (9)	1 (9)	7 (63.7)	1 (9)	0 -	1 (9)	11 (100)
12.	Kolar	0 -	3 (23)	5 (38.4)	2 (15.3)	0 -	1 (7.6)	2 (15.3)	13 (100)
13.	Mandya	1 (10)	0 -	3 (30)	3 (30)	0 -	1 (10)	2 (20)	10 (100)
14.	Mysore	0 -	6 (46)	4 (30.7)	0 -	0 -	0 -	3 (23)	13 (100)
15.	N. Canara	1 (12.5)	1 (12.5)	5 (62.5)	1 (12.5)	0 -	0 -	0 -	8 (100)
16.	Raichur	0 -	1 (10)	3 (30)	1 (10)	0 -	1 (10)	4 (40)	10 (100)
17.	Shimoga	0 -	3 (25)	7 (58)	1 (8.3)	1 (8.3)	0 -	0 -	12 (100)
18.	S. Canara	1 (7.1)	9 (64.2)	2 (14.2)	1 (7.1)	0 -	0 -	1 (7.1)	14 (100)
19.	Tumkur	2 (16.6)	4 (33.3)	4 (33.3)	2 (16.2)	0 -	0 -	0 -	12 (100)
20.	State	8 (3.4)	76 (33)	64 (27.3)	29 (12.6)	3 (1.3)	3 (1.3)	47 (20.4)	230 (100)

Table 2.10 Karnataka: Distribution of Towns by Functional Diversification (District Level, 1971)

Sl. No.	Districts	DEGREE OF FUNCTIONAL DIVERSIFICATION					TOTAL
		FHD	FMD	PFA	PFHA	Agril. Towns	
1.	Bangalore	1(7.1)	4(2.8)	3(21.4)	4(28.5)	2(14.2)	14 (100)
2.	Belgaum	4(22.2)	3(16.6)	1(5.5)	5(27.7)	5(27.7)	18 (100)
3.	Bellary	1(9)	1(9)	1(9)	1(9)	7(63.6)	11 (100)
4.	Bidar	0	1(20)	3(60)	1(20)	0	5 (100)
5.	Bijpur	0	4(23.5)	3(17.6)	5(29.4)	5(29.4)	17 (100)
6.	Chikmagalore	3(33.3)	3(33.3)	3(33.3)	0	0	9 (100)
7.	Chitradurga	2(16.6)	2(16.6)	3(25)	1(8.3)	4(33.3)	12 (100)
8.	Coorg	0	4(36.3)	1(9)	4(36.3)	2(18.1)	11 (100)
9.	Dharwar	0	1(5.5)	3(16.6)	5(27.7)	9(50)	18 (100)
10.	Gulbarga	0	5(41.6)	2(16.6)	5(41.6)	0	12 (100)
11.	Hassan	5(45.4)	3(27.2)	1(9)	1(9)	1(9)	11 (100)
12.	Kolar	2(15.3)	3(23)	4(30)	2(15.3)	2(15.3)	13 (100)
13.	Mandya	2(20)	4(40)	2(20)	0	2(20)	10 (100)
14.	Mysore	2(15.3)	5(38.4)	3(23)	0	3(23)	13 (100)
15.	N. Canara	2(25)	3(37.5)	1(12.5)	2(25)	0	8 (100)
16.	Raichur	1(10)	1(10)	2(20)	2(20)	4(40)	10 (100)
17.	Shimoga	3 (25)	4(33.3)	4(33.3)	1(8.3)	0	12(100)
18.	S. Canara	3(21.4)	1(7.1)	4(28.5)	5(35.7)	1(7.1)	14 (100)
19.	Tumkur	3(25)	3(25)	3(25)	3(25)	0	12 (100)
20.	State	34(14.7)	55(23.9)	47(20.4)	47(20.4)	47(20.4)	230 (100)

TERNARY DIAGRAM

FUNCTIONAL CLASSIFICATION OF CITIES

(After A. Mitra's Method)

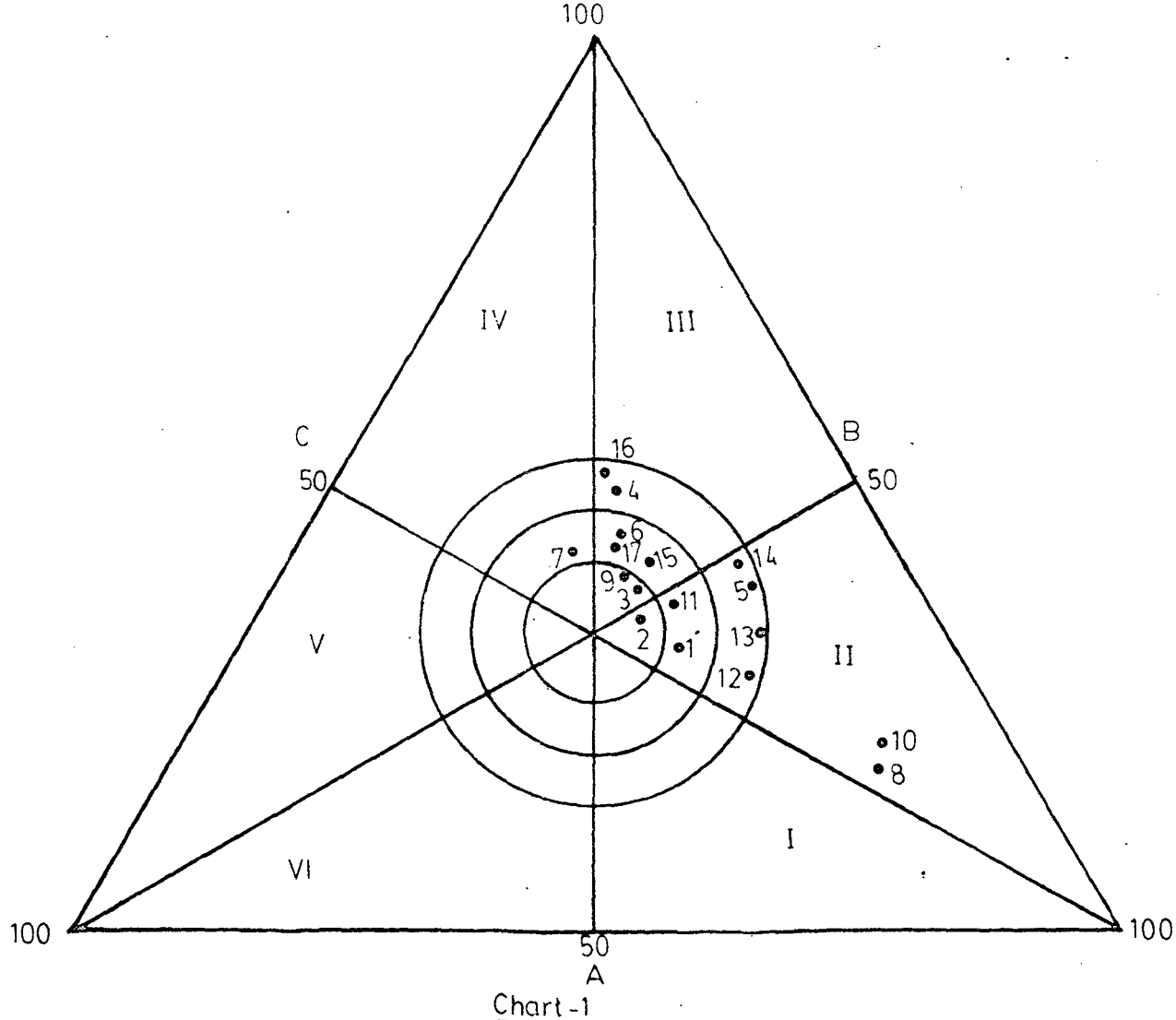


Chart-1

Chart 1. Karnataka: Functional Classification of Cities 1971

1. Bangalore urban agglomeration U.A.
2. Belgaum U.A.
3. Bellary city
4. Bijpur city
5. Davangere city
6. Hubli-Dharwar U.A.
7. Gulbarga city
8. Kolar Gold Fields city
9. Mysore U.A.
10. Bhadravati city
11. Shimoga city
12. Mangalore U.A.
13. Hospet city
14. Gadag-Betagere city
15. Mandya city
16. Raichur city
17. Tumkur city

The first 12 cities are class I and the rest are class II since 1971. The cities 13th onwards are class I since 1981.

high specialization and population concentration in a settlement generally do not match the magnitude of infrastructure and service facilities available. Therefore there arises a greater need for transforming the highly non-diversified and developing towns into highly diversified urban settlements. Probably the districts of Bellary, Chitradurga, Dharwar and Raichur provide better chances of transforming their urban settlements into a set of diversified towns, since there are many agricultural towns, where industrial activiescan develop.[6]

2.7 Summary

The degree of urbanization in Karnataka is above national averages during 1961-81. The data on density averages during 1961-71 suggest intensive growth of urban areas. Higher density averages also suggest more intensive use of urban land in all classes of towns excepting class IV towns. The class-wise population distribution is quite similar to the top heavy situation in the country. More than half of the urban population in Karnataka live in cities. The urban population concentration in cities, a reduction in the proportion of urban land indicate that there is a scarcity of urban land and also problem of congestion. In Karnataka, the growth of towns and cities is slightly rapid

---

6. See A Glossary of Functionally Classified Towns: Appendix III.

after sixties. Specially the Class II towns are fast turning into class I towns. However, the growth of class II towns is rather slow. Karnataka too is experiencing a decline in the growth of small towns alike the national experience.

The measurement of the degree of urbanization reveals serious inter-district variations. Bangalore's urbanization is quite tremendous mainly due to the growth of Bangalore metropolis i.e. state capital. The serious inter-district variations in the state confirm the hypothesis that a few districts are experiencing persisted urbanization. During all the three decades (1961-81) we find a clear influence of heavy concentration on the degree of urbanization of some highly urbanized districts. The 'city size of the median inhabitant's in these districts is quite huge. Some of the districts like Chitradurga and Bellary are on the way to become districts of high concentration.

Regarding the concentration of migrants, Bangalore is the only district receiving larger size of migrant population in the state. This suggests that Bangalore is the only district which has greater attraction in the state. The districts of Dharwar and Mysore are the next two important areas receiving significant sizes of migrant population in the state.

The corss-section examination of different categories of migrants show that only highly urbanized dis tricts

have mixed composition of inter-state and intra-state migrants. Otherwise most of the districts have received intra-state rural to urban migrants and here even the intra-state urban to urban migration is not significant.

The functional classification of towns based on workforce employment suggest that the state's urbanization is a result of industrial and tertiary specializations. Significant number of towns exhibit industrial base closely followed by tertiary base. Around 20 per cent of towns do have agricultural base. The agriculture and urbanization relationship is found to be strong in Dharwar and Bellary where more than half of the towns have agricultural base. A tertiarization-urbanization relationship is quite conspicous in the districts of Bangalore and South Canara. The workforce employment in the districts of Coorg, Hassan and North Canara supports industrialization-urbanization relationship.

An examination of the functional diversification of towns reveals a poor balanced pattern of workforce employment. A small percentage of towns are found to be highly diversified indicating more balanced pattern of employment structure. The existence of around 40 per cent of towns in a non-diversified situation shows serious structural imbalances in the local urban economies. Especially the structural imbalances are found serious in Bellary, Dharwar, Chitradurga and Raichur districts.

CHAPTER III

HOUSING CONDITIONS AND SHORTAGES

3.1 Introduction

A common assumption, that urbanization and deteriorating quality of urban living environment are closely related, requires a systematic assessment and evaluation of housing in the urban areas. There have been perpetual shortages of housing and a package of urban services and supply management is becoming increasingly complex. The rising urban concentration and vain efforts of people to adjust with scarce urban necessities are leading to unimaginable urban living. The forced adjustment situations in the urban environment have had strong impact on socio-psychological behaviour of people. The adverse impact parameters of urban living like slums, poverty, urban crime and many other urban social problems need no special explanation. Basically a very small section of the urban population has been able to enjoy adequate supply of standardised packages. In fact the problem is not only of supply management but demand as well. The size of urban population which cannot afford urban services is increasing faster. We have not been able to create an urban system where effective demand for urban packages is generated. In the light of this commonly understood situation, it would be pertinent to assess the existing inadequacies. The alarming situation of infrastructural facilities in cities like

Bangalore and Hubli-Dharwar etc., and continued urban growth at a faster rate than the rate of service provision, call for serious concern.

Therefore keeping in view the availability of data housing conditions have been analysed in terms of quality and quantity. However, the main emphasis is on supply side of urban packages, so that demand side aspects could be visualized. The qualitative aspects like type of building structure, privacy, basic amenities; the quantitative aspects like housing stocks, stock utilization, tenure status etc., have been measured and assessed. The basic amenities included here are protected water, toilet facilities, system of sewerage and drainage, system of human waste collection and disposal and number of domestic electric connections.

The section on urban living examines the state of urban life in Karnataka and India as a whole by taking a few common variables. Housing stock utilization analysis provides a picture of housing stocks being used for residential, commercial and social purposes in the districts of Karnataka at various levels of urbanization. The patterns of stock utilization in cities have also been analysed. Tenure status analysis presents the inter-district variations in the proportions of owner and non-owner households in urban areas as well as cities. The section on accommodation measures the proportions of households housed in different sizes of

houses. Quality of housing has been assessed by taking wall and roof material of the housing stocks into account. This is followed by analysis of direct shortages and degree of privacy available in various districts. Here the number of persons per household, per room and size of the house have been used as indicators of degree of privacy in urban areas and cities.

An assessment of the supply of public utilities follows with reference to a package of urban services like protected water supply, toilet facilities, system of human waste disposal and number of domestic electric connections. Finally total housing shortages have been computed and analysed to examine whether there exists any relationship between the magnitude of shortages and different levels of urbanization. The direct shortages and non-useable stocks form the total shortages. The question of higher urbanization - higher shortages has been examined by correlation values. Therefore the housing shortages have been examined in relation to urbanization in two ways, (a) correlation between, percentage of urban population to the total population and percentage of total shortages to the total urban household, (b) correlation between, percentage of district urban population to the state urban population and percentage of district housing shortage to the state total shortages.

Data constraints for wall and roof material cross-classification and basic amenities in 1961 make us rely on

1971's data. This prevents us from examining the decadal improvement. However, 1971's data for all the variables mentioned should suffice to project a comprehensive picture of urban living in the districts and cities of Karnataka.

3.2 Urban Living

A comparison of figures for certain variables relating to housing in urban Karnataka and urban India reveal marginal differences at the regional and national level. Major part of housing stock in Karnataka and India is utilized for residential purposes. Around 71 per cent of stocks in Karnataka are used for residential and residence-cum-commercial purposes as against 74 per cent of stock utilization for the same purposes in India. In India, the stock utilization for purely commercial and social purposes, is also of more or less similar magnitude. Approximately 19 percent of stocks are utilized for non-residential purposes in Karnataka as well as India. The housing stocks that have been recorded as vacant at the time of house listing are found to be slightly more in Karnataka in 1961. Again in 1971, the situation of stock utilization has continued on the same plane, showing similarity between Karnataka and India. An approximate magnitude of 75 per cent of stocks under residential and 17 percent of stocks under non-residential utilization in Karnataka and India suggest a continued similarity

in stock utilization.

The percentage share of households living in owned and rented houses reveal alarming situation of housing concentration in the hands of small section of house owners. More than half of the households of Karnataka and India have lived in rented houses in 1961 and 1971. A marginal reduction in the rented house dwellers in Karnataka indicate a slight improvement in the share of owner households in 1971. However, it is not quite significant. There is a marginal increase in the rented households in India indicating a decline in owner households.

In terms of quality of housing in 1971, Karnataka reflects a poor situation with 51 per cent of permanent stocks compared to 63 per cent of permanent stocks in India. The share of semi-permanent stocks in Karnataka is significantly greater than India. The share of non-useable i.e. serviceable temporary and non-serviceable temporary stocks in Karnataka being greater than India, the state tends to depict a dismal picture of urban housing. The total non-useable urban stocks in Karnataka are around 27 per cent as against an approximate 20 per cent in India.

A comparison of indicators like number of persons per room and per household tend to show a similar degree of privacy available in Karnataka and India. In both the cases, more than two people have shared a room in 1961 and the same situation continues in 1971 too. There is an apparent shortage of rooms

for private living. An observation of a larger proportion of total household living in single room accommodation in 1961 and 1971 confirm the notion that large section of population is deprived of adequate privacy.

3.3 Stock Utilization

All the three decades during 1961-81, major part of the housing stocks is utilized for residential purpose. In the year 1961, there appears a significant inter district variation due to a smaller proportion of residential stock in Coorg. A proportion of 36 per cent residential stocks creates a scene of serious interdistrict variation in the utilization of stocks for dwelling purpose. Otherwise we find all other districts using 62-74 per cent of stocks for residential purpose. Here it is probable that figures for Coorg in 1961 are misleading to some extent. In this year, Coorg has had 7708 actual number of housing units in 'other uses' like Granaries, Garages, Temples and places of worship etc. But in 1971, the stocks in this category drops to 1245 units. Then there has been a significant increase in the residential houses from 7132 in 1961 to 10,265 in 1971 and also the places of worship and temples become separate category in 1971. Therefore, there should have been either a drastic conversion of Garages, Granaries etc. into residential housing or some errors in accounting of housing units (Table 3.1).

Table 3.1 Karnataka: Housing Stock Utilization (Urban Areas & Cities, 1981)

Sl. No.	Districts	Residential	Commercial	Community Utility	Vacant Stocks	Other purposes	City Code	COLUMN 3-7 REPEATED FOR CITIES				
1	2	3	4	5	6	7	8	3	4	5	6	7
1.	Bangalore	79.00	11.41	0.55	4.34	4.16	1	79.69	11.24	0.48	4.64	3.91
2.	Belgaum	71.19	12.29	1.02	6.64	8.83	2	72.20	15.19	0.66	4.55	7.36
3.	Bellary	75.25	8.23	1.34	6.93	7.62	3	75.56	10.19	1.18	6.37	6.66
4.	Bidar	75.24	14.61	0.92	5.31	4.39						
5.	Bijpur	72.74	11.21	1.40	7.93	6.67	4	72.56	11.04	1.06	9.48	5.83
6.	Chikmagalore	72.58	10.91	1.20	8.47	6.81						
7.	Chitadurga	75.92	11.73	0.91	6.12	5.28	5	76.46	12.37	0.63	5.73	4.78
8.	Coorg	68.23	12.56	0.78	6.61	11.78						
9.	Dharwar	73.02	10.41	1.45	6.93	8.16	6	76.65	10.50	0.38	5.78	6.15
10.	Gulbarga	73.83	11.07	1.33	7.54	6.21	7	76.02	13.63	0.97	5.61	3.74
11.	Hassan	67.20	13.10	1.33	8.48	9.86						
12.	Kolar	72.45	11.95	0.91	7.89	6.78						
13.	Mandya	75.70	11.77	1.13	7.17	6.26						
14.	Mysore	75.17	11.78	0.90	6.44	5.68	8	76.57	11.80	0.79	5.79	5.02
15.	N. Canara	71.64	11.32	0.83	8.06	8.11						
16.	Raichur	75.58	9.93	1.16	7.41	5.89						
17.	Shimoga	74.90	10.30	0.66	7.70	6.42						
18.	S. Canara	64.20	13.15	1.80	6.58	14.27	9	66.64	13.97	1.45	6.26	11.66
19.	Tumkur	70.15	13.55	0.88	8.53	6.86						
20.	State $\bar{X}_1$	74.28	11.40	0.99	6.50	6.65		69.75	12.21	0.90	6.02	6.12
21.	State $\bar{X}_2$	75.31	11.13	0.32	7.46	5.20		74.35	11.78	0.89	7.24	5.13
22.	State $\bar{X}_3$	74.64	10.65	1.20	7.23	6.23		72.19	11.08	0.86	8.07	7.61

Note: $\bar{X}_1$, $\bar{X}_2$ and $\bar{X}_3$ refer to state and city averages in 1981, 1971 and 1961 respectively.

City Codes: Bangalore U.A. - 1, Belgaum U.A. - 2, Bellary city - 3, Bijpur city - 4
Davanagere city - 5, Hubli-Dharwar city - 6, Gulbarga city - 7,
Mysore U.A. - 8, Mangalore U.A. - 9.

Then contrary to the assumption that highly urbanized districts would have lesser stocks under residential use, Bangalore and Shimoga show more than 70 per cent of stocks in this category. The utilization of stocks for shop-cum-residential use, show significant variations. The housing stocks utilized purely for commercial purposes seem to show no relationship between the levels of urbanization and scale of commercial activities. Besides, the highly urbanized districts like Bangalore, South Canara, Mysore and Kolar, which have 8 - 15 per cent of commercial stocks, we find less urbanised districts like Coorg, Bidar and Tumkur with 9-15 per cent of commercial use stocks in 1961. The stocks as a whole show small inter-districts variation in the utilization of stocks for commercial purposes. Therefore, we can infer that commercial activities tend to be on a same scale despite differences in the volume of production and distribution of goods and services in highly urbanized and less urbanized districts.

Considerable variation exists in the stock utilization for recreation and community purposes since Coorg and South Canara have more than 1 per cent stocks under the said category as against less than 1 per cent in other districts. All 'other purpose' stocks which include Garages, worship places etc. have ranged between 6-13 per cent among the districts, excepting Coorg. As mentioned earlier Coorg has an unusual percentage of housing stocks under other uses. The share of vacant houses in the total stocks of different districts has

ranged between 5-13 per cent in 1961. Interdistrict variations in this category are less significant. Any conclusion regarding 'vacant houses' can not be drawn since the reasons for vacancy are not presented in the census tabulations. Although there could be reasons like 'Dilapidation' 'under construction' or 'repair' etc. lack of tables pertaining to exact reason, prevent us from drawing conclusions.

Almost a same pattern of stock utilization continues in 1971 and 1981 among the districts. Major proportions of stocks are found being utilized for residential purposes followed by commercial and social purposes. The unusual proportion of 38 per cent at 'other uses' in 1961 drops to 8 per cent in 1971 and residential use increases for Coorg. Considerable variations are again found in the utilization of stocks for workshop-cum-residence purpose. This variation is caused by Bijpur, Gulbarga and South Canara. This could be because of more household activities of handloom weaving in the former two districts and beedi production in the latter district. Therefore, it can be concluded that there has been no significant shifts in the pattern of stock utilization since 1961 uptill 1981 (Map 3.1).

Stock Utilization in Cities

The pattern of stock utilization in the cities of Karnataka depict the same picture discussed earlier for the period of 1961-81. The stock utilization is dominated by

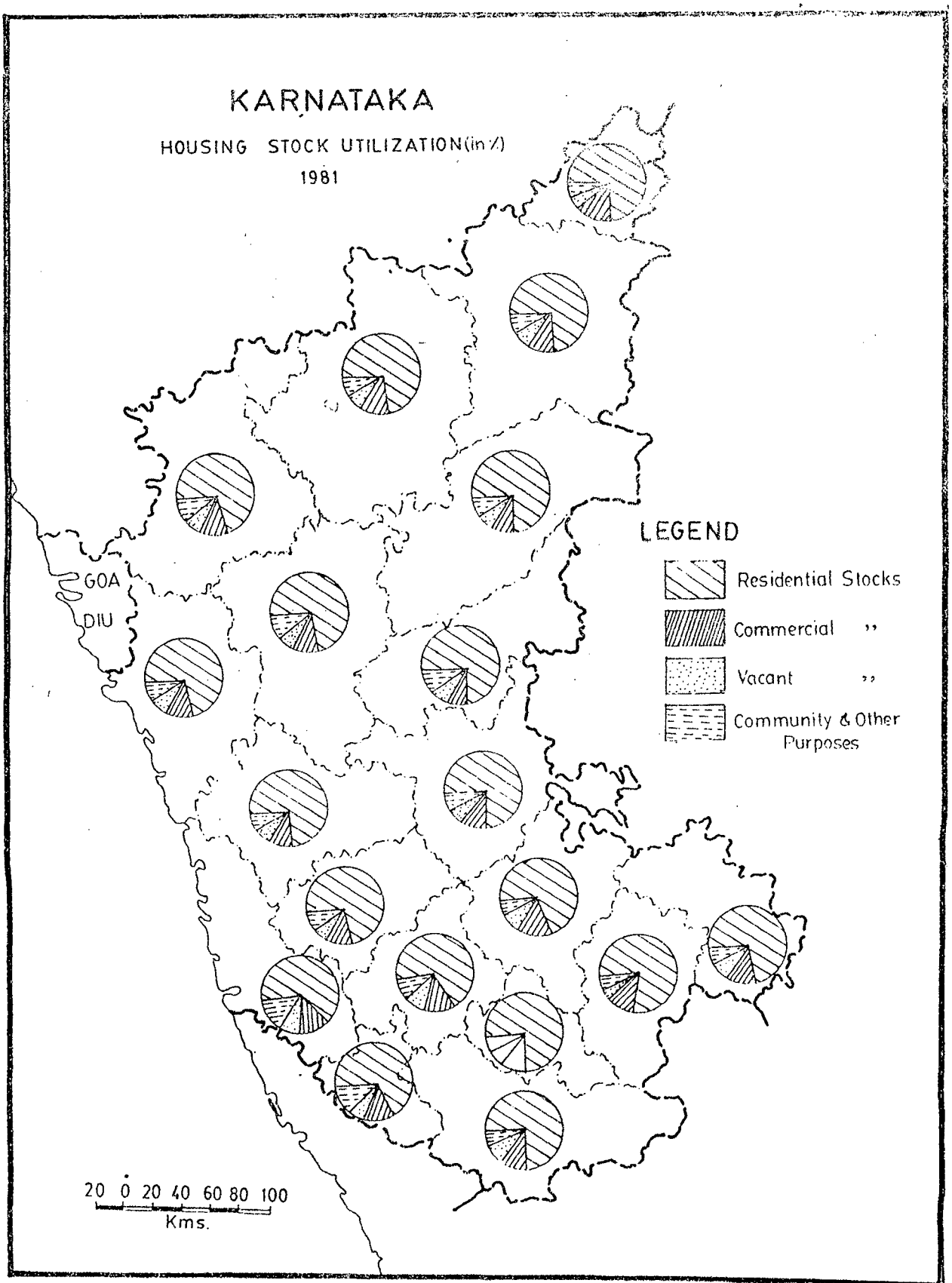

KARNATAKA
HOUSING STOCK UTILIZATION(in %)
1981
GOA
DIU
LEGEND
Residential Stocks
Commercial ,,
Vacant ,,
Community & Other Purposes
20 0 20 40 60 80 100
Kms.

Fig. 3.1

residential purposes followed by commercial purposes. The share of recreation and religious pruposes is almost of the same magnitude observed for urban areas as a whole. Only Mangalore city is an exception in 1931 where we notice a slump in the share of purely residential stocks. This has been made up in the category of workshop-cum-residence and so the overall share of houses used for residential purposes remains around 67 per cent. Perhaps the intensifying manufacturing activities in the city of Mangalore should be giving boost to household industry in addition to the traditional production of beedies in houses.

The magnitude of vacant houses in 1961 has ranged between 5.25 - 10.55 per cent. However, a marginal decline in the vacant stocks of cities by 1981 to a variation range of 4.55 - 9.48 per cent indicate increasing stock utilization. This would be a general tendency in cities due to scarcity of housing. Therefore increased utilization of vacant houses may not reflect the qualitative aspect, since many families in cities tend to adjust with the dilapidated housing stocks.

3.4 Tenure Status of Households

There appears to be a significant relationship between levels of urbanization and households living in rented houses. A broad classification of households into two groups

viz. owner households and rented households tends to support a view that highly urbanized districts have larger number of rented households and smaller number of owner households. In 1961, the highly urbanized districts like Bangalore, Kolare and Shimoga show 57 to 70 per cent of households living in rented houses. This raises two speculations that in highly urbanized areas, smaller number of households tend to own large number of housing stocks and they are successful in controlling the urban housing mechanism with whatever resources they have for commercial profiteering; second if the stocks held by these households are not too large, the existing housing units are being bifurcated into small dwellings for hire purposes. Perhaps this causes greater inadequacies of privacy. Bangalore district, which has had 70 per cent of household in rented houses suggests a huge speculation of housing stocks. This district having the metropolis of Bangalore, it is possible that greater number of households living in rented houses are from this city alone. The same phenomenon of housing speculation can be attributed to Bhadravathi and Shimoga cities in Shimoga district and Kolar Gold Fields in Kolar district. Bidar, one of the less urbanized districts in the state, is the only district showing less than 25 per cent of households in rented houses. Though Dharwar and Mysore, the more urbanized districts show a fair share of owner households, the margin in the share of owner-households is not significantly higher. A

share of 49 per cent households in rented houses suggest considerable speculation. However, it is surprising to note 61 per cent of households in rented houses in Coorg, which is a less urbanized district. It is probable that large number of plantation workers in the small town of Coorg, are provided housing on rent basis. It is difficult to explain the unusual percentage of 63 households living in rented houses in South Canara district which is a moderately urbanized district. Here it is possible that large number of households living in rented houses are from Mangalore city where considerable manufacturing activity is concentrated.

The situation of owner-rented households in the districts remains almost same with marginal ups and downs in the distribution in 1971. The state average of rented households moves up by 2.5 per cent from 52.84 in 1961 to 55.28 per cent in 1971. The case of Bangalore remains the same with 70 per cent of households in rented houses. The district of Kolar shows more than 60 per cent of households in rented houses. The district of Coorg gains a significant 8 per cent hike in the share of rented households from 61 to 69 during 1961-71. The districts which had more than half of their households in rented houses in 1961 remain the same in 1971. Excepting Bijapur, which shows a marginal decline of 0.53 per cent in the number of rented households, all others show significant increase in the number of rented households. Therefore the relationship

between high urbanization and high proportion seem to weaken in 1971. Significant increase in the share of rented households in 1971 over 1961 in almost all districts, except Bijapur, support the 'low-key construction-rapid urban household growth' assumption. Nearly ten districts of the state in 1971 have had more than half of the household in rented houses. Therefore in urban areas the rented house living looks inevitable, part of urban culture and urban housing. The existence of large number of rented-households is less desirable due to obvious reasons. The greed for unearned excess income and exploitation of non-owner households by owner households are common features of urban living. Further, generally the rented houses are smaller and below the floor area requirements of families. Therefore, generally the households living in rented houses face congestion, lack of privacy and discomfort. Hence a reduction in the rented house living becomes necessary to ensure better quality of living to a l larger number of households. With the available evidence we can conclude that living situation is quite dismal. An increase in the number of rented households in 1971 over 1961 is an indication of growing discomfort in urban living (Table 3.2 & Map 3.2).

Tenure Status in Cities

The picture of tenure status in cities is not different from their respective district urban aggregates. As contended

Table 3.2 Karnataka: Tenure Status of Households (Urban Areas and Cities, 1961 & 1971)

Sl. No.	Districts	Owner households		Rented households		City Code	Owner households		Rented households	
		1961	1971	1961	1971		1961	1971	1961	1971
1.	Bangalore	29.95	29.40	70.04	70.59	1	25.62	25.83	74.37	74.16
2.	Belgaum	57.60	54.20	42.39	45.79	2	40.34	45.92	59.65	54.07
3.	Bellary	60.57	60.25	39.42	39.74	3	47.40	51.66	52.59	48.33
4.	Bidar	75.80	72.40	24.19	27.59					
5.	Bijpur	55.46	56.00	44.53	44.00	4	37.92	42.72	62.07	57.27
6.	Chikmagalore	53.78	46.69	46.21	53.30					
7.	Chitradurga	53.72	48.32	46.27	51.67	5	40.75	36.22	59.24	63.77
8.	Coorg	38.44	30.68	61.55	69.31					
9.	Dharwar	51.00	50.87	49.00	49.12	6	39.75	42.26	60.24	57.73
10.	Gulbarga	56.70	52.58	43.29	47.41	7	42.06	39.67	57.93	60.32
11.	Hassan	52.58	47.36	47.44	52.63					
12.	Kolar	41.42	37.86	58.57	62.13					
13.	Mandya	62.62	55.50	37.37	44.49					
14.	Mysore	51.12	45.96	48.87	54.03	8	38.44	36.67	61.55	63.32
15.	N. Canara	59.90	53.87	40.09	46.12					
16.	Raichur	64.85	64.32	35.14	35.67					
17.	Shimoga	43.07	36.12	56.92	63.87					
18.	S. Canara	36.66	39.51	63.33	60.48	9	31.38	32.12	68.61	67.87
19.	Tumkur	60.58	49.82	39.41	50.12					
20.	State $\bar{X}$	47.15	44.71	52.84	55.28		38.18	39.23	61.87	60.76
21.	India $\bar{X}$	46.21	47.11	53.73	52.88					

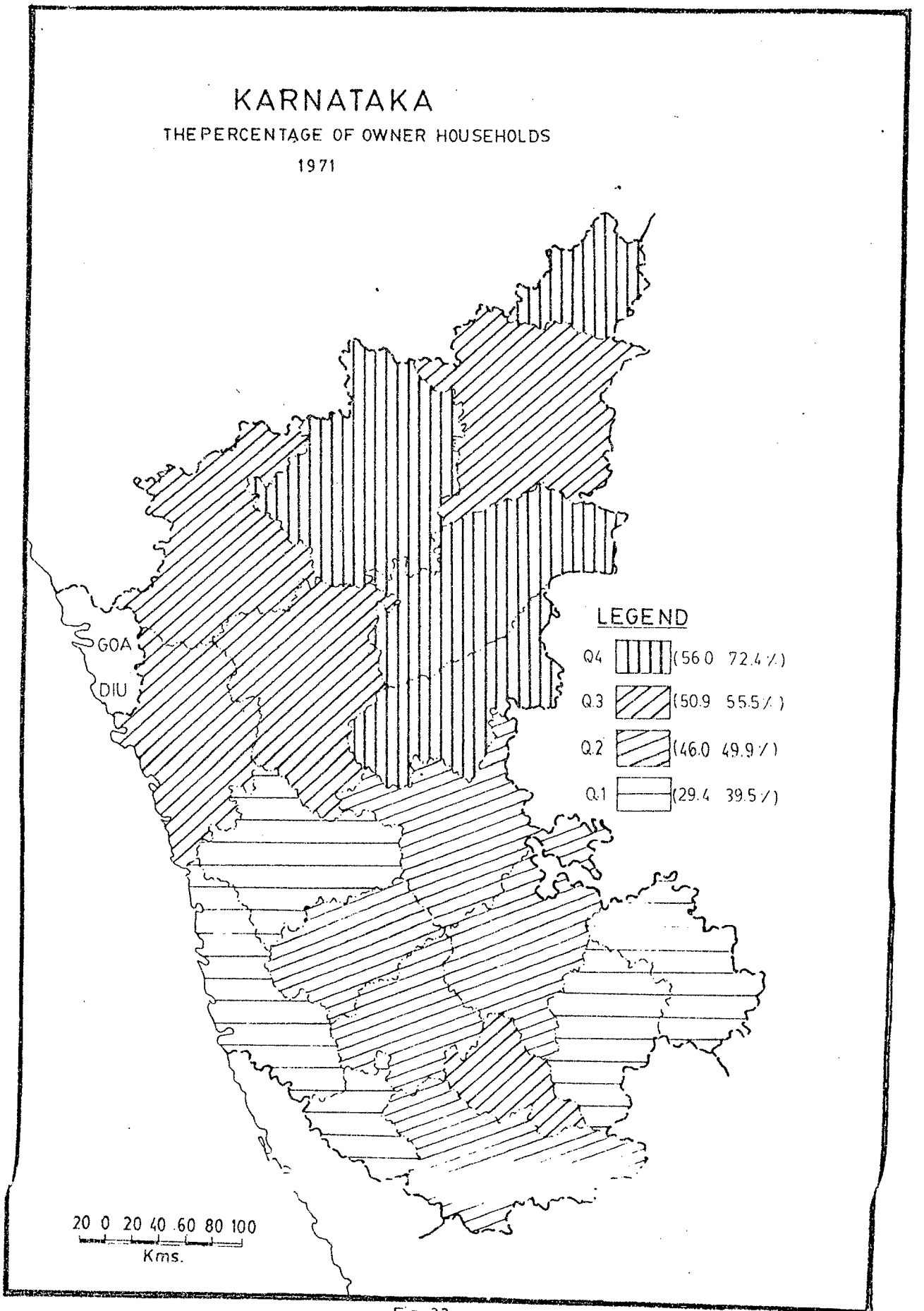

KARNATAKA
THE PERCENTAGE OF OWNER HOUSEHOLDS
1971
GOA
DIU
LEGEND
Q4 (56.0 72.4 %)
Q.3 (50.9 55.5 %)
Q.2 (46.0 49.9 %)
Q.1 (29.4 39.5 %)
20 0 20 40 60 80 100
Kms.

Fig. 3.2

earlier a larger proportion of rented households in cities, seem to contribute greatly to the urban aggregates. A comparison of district urban aggregates and city aggregates of rented households reveal this relationship. Among the cities Bangalore has the highest proportion of households in rented houses in 1961 as well as 1971. Even otherwise all the cities have more than half of the households in rented houses in 1961. Only Bellary City has shown a marginal decline to appear as a city with less than half of the households in rented houses. Although the cities like Bengaum, Bijapur, Hubli-Dharwar and Mangalore show a marginal decline in rented households in 1971, it does not seem significant since more than half of the households continue to live in rented houses. However there has been atleast slight increase in the owner households. The cities like Davangere, Gulbarga and Mysore seem to be moving towards greater speculation of housing stocks, due to a decline in the number of owner households.

3.5 Accommodation

A supplementary analysis of proportion of households accommodated in different sizes of housing units can be added. It is interesting to note that a large number of urban households live in single room accommodation. This supports the view that since large number of urban families live in rented-

Table 3.3 Karnataka : Percentage of Households by Size of Houses (Urban Areas & Cities, 1971)

Sl. No.	Districts	One Room	Two Room	Three Room+	City Code	One Room	Two Room	Three Room+
1.	Bangalore	45.1	28.8	26.1	1	45.4	27.5	27.1
2.	Belgaum	38.9	29.9	31.2	2	35.4	25.0	39.6
3.	Bellary	54.1	28.6	17.3	3	48.8	28.0	23.2
4.	Bidar	42.7	29.6	27.7				
5.	Bijpur	42.1	32.7	25.2	4	41.1	31.4	28.0
6.	Chikmagalore	32.4	30.3	37.3				
7.	Chitradurga	44.8	34.0	21.2	5	40.6	35.6	23.8
8.	Coorg	26.3	29.9	43.8				
9.	Dharwar	47.2	31.8	21.0	6	45.5	32.1	22.4
10.	Gulbarga	46.6	29.1	24.3	7	51.9	23.3	24.7
11.	Hassan	27.0	31.0	42.0				
12.	Kolar	33.1	37.2	29.7				
13.	Mandya	44.1	32.2	23.7				
14.	Mysore	38.2	29.9	31.9	8	34.8	29.1	36.1
15.	N. Canara	31.8	34.9	33.3				
16.	Raichur	49.8	29.3	20.9				
17.	Shimoga	31.8	34.9	33.3				
18.	S. Canara	27.6	28.3	44.1	9	29.3	26.5	44.2
19.	Tumkur	31.3	34.7	34.0				
20.	State	41.3	30.8	27.9	$\bar{X}$	41.4	28.7	29.9

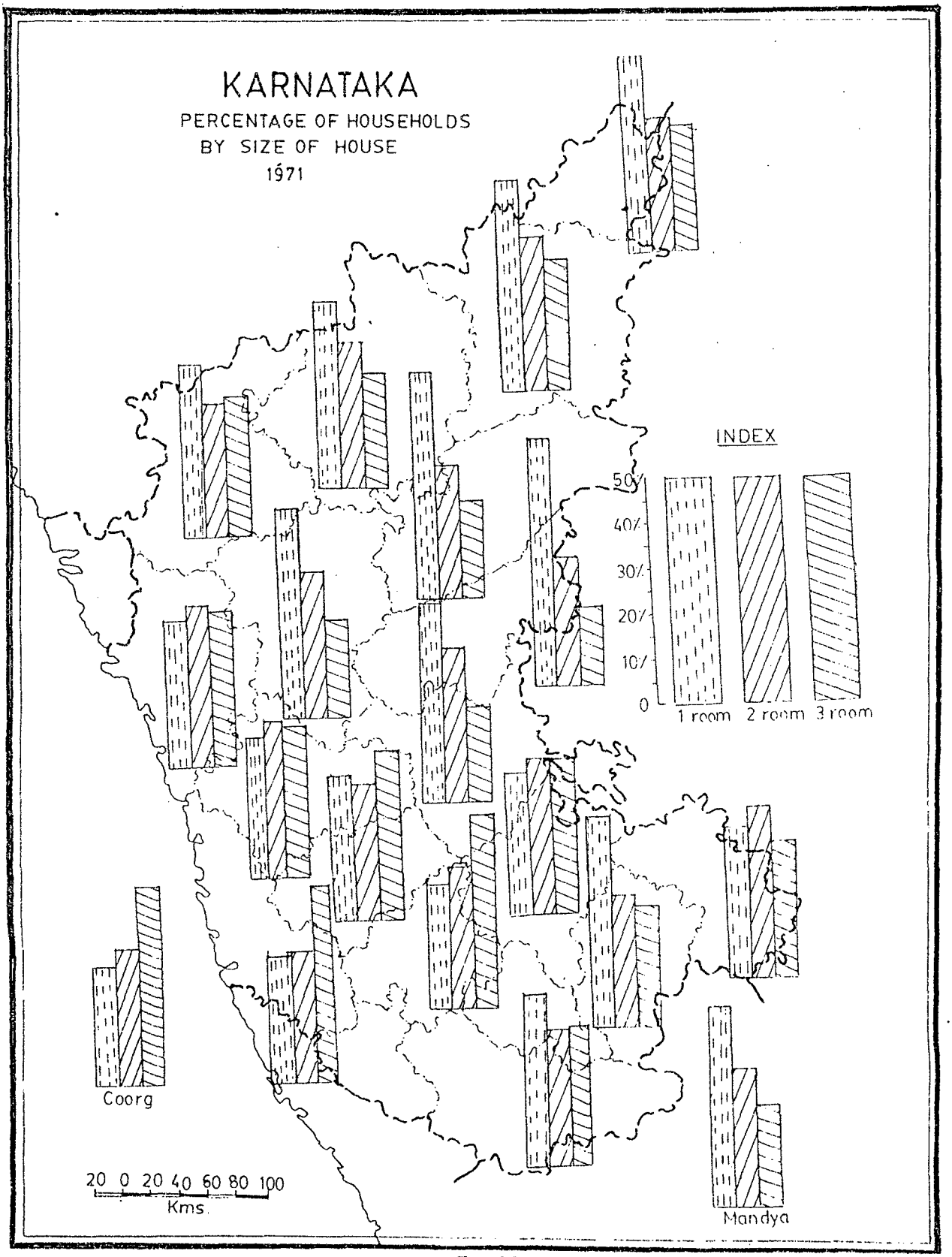

KARNATAKA
PERCENTAGE OF HOUSEHOLDS
BY SIZE OF HOUSE
1971
INDEX
50%
40%
30%
20%
10%
0
1 room
2 room
3 room
Coorg
Mandya
20 0 20 40 60 80 100
Kms.

Fig. 3·3

houses, they should be living in small houses to reduce costs on housing. We find 26-54 per cent and 18-51 per cent of households in various districts living in single room houses in 1961 and 1971 respectively. During 1961 and 1971 28-37 per cent and 25-40 per cent of urban households have lived in two room housing units. Therefore, we find around 55-70 per cent households living in one or two room housing units, which depicts greater lack of privacy due to more than two people living in one room. Rest of the 30-40 per cent of households are housed in three, four and five room housing units (Table 3.3 & Map 3.3).

Since there are no serious inter-district variations in the proportion of households living in one, two and three room, the situation of urban living in such houses can said to be uniform. Significant inter-district variations are seen in the proportion of households living in four and five rooms. However, the overall fashion of proportional distribution of households among one to five room houses is in the decending order. All the districts have more number of households in one room and small number of households in five room housing units.

3.6 Housing Quality

The quality of housing can be assessed by examining the type of materials used in the construction of wall and

roof of housing stocks. Using the data available for 1971 on wall and roof material and adopting the NBO-Planning Commission of India criteria,[1] the quality assessment of housing and consequent shortages have been worked out at the district and city level. According to the criteria, the housing stocks have been classified into four categories to identify useable and non-useable housing stocks in the urban areas:

(a) Permanent stocks

(b) Semi-permanent stocks

(c) Temporary: Serviceable

(d) Temporary: Unserviceable

The stocks of (c) and (d) type are non-useable in the urban areas (Table 3.4).

A wide variation in the availability of permanent housing stocks is evident from the fact that the district of Raichur has lowest share of 16.4 per cent of permanent stocks as against an impressive share of 81.4 per cent of permanent stocks in Bangalore district. The districts of Bangalore, Belgaum, Coorg, Gulbarga, Kolar, Mysore, Shimoga and Tumkur are the eight districts showing more than half of the stocks as permanent structures. We can easily guess that larger

---

1. National Building Organization and Planning Commission of India, have formulated criteria for quality measurement. See Appendices IV & V.

Table 3.4 Karnataka : Quality of Housing Stocks and Direct Shortages* (Urban Areas & Cities, 1971)

Sl. No.	Districts	Permanent	Semi-Permanent	Serviceable Temporary	Non-serviceable Temporary	Direct Shortages	City Code	COLUMN NOS. 3 TO 7 REPEATED FOR CITIES				
1	2	3	4	5	6	7	8	3	4	5	6	7
1.	Bangalore	81.45	9.46	2.81	6.21	17.4	1	86.35	7.24	2.52	3.83	17.5
2.	Belgaum	53.18	30.07	12.30	3.70	12.5	2	51.83	46.78	0.64	0.55	17.0
3.	Bellary	19.29	1.28	46.14	33.13	9.3	3	19.99	0.40	53.11	26.12	11.9
4.	Bidar	42.59	22.23	25.45	6.63	27.1						
5.	Bijpur	14.23	3.87	76.78	4.86	12.1	4	19.94	2.85	70.41	5.99	23.0
6.	Chikmagalore	43.84	47.61	0.15	8.38	12.7						
7.	Chitradurga	48.18	27.21	8.93	15.43	5.0	5	51.75	38.44	0.13	9.34	5.7
8.	Coorg	56.78	33.99	1.18	8.03	13.5						
9.	Dharwar	26.51	31.69	17.50	23.94	8.6	6	34.30	48.77	1.68	14.93	8.2
10.	Gulbarga	65.87	0.69	28.72	2.82	8.3	7	80.23	0.90	13.66	1.12	6.7
11.	Hassan	49.57	44.02	0.17	6.16	18.4						
12.	Kolar	56.54	19.82	11.35	11.58	12.5						
13.	Mandya	42.16	32.04	1.81	23.96	21.3						
14.	Mysore	55.97	37.43	0.23	6.35	21.5	8	71.39	28.24	0.20	2.00	23.0
15.	N. Canara	37.75	45.31	0.41	16.69	15.3						
16.	Raichur	16.48	1.54	41.24	40.74	7.9						
17.	Shimoga	54.40	34.53	0.46	10.59	8.0						
18.	S. Canara	26.89	57.75	0.44	14.70	5.6	9	27.89	70.77	0.10	1.20	6.4
19.	Tumkur	59.38	19.35	8.38	12.87	7.1						
20.	State	51.01	21.92	14.55	12.21	13.3	$\bar{X}$	49.29	27.15	15.82	7.23	13.2
21.	India	63.84	15.58	7.56	12.69	-						

* Direct Shortage as Percent of Total Households.

contribution to the permanent stocks of Bangalore district comes from the city of Bangalore. Basically the city of Bangalore being capital of the state and also a concentration of public sector enterprises, huge number of residential, administrative and business complexes of permanent quality are built. Secondly the city of Bangalore is unlike the traditional metropolises of India where a vast informal sector is in operation. A small number of non-useable stocks and a significant number of households without housing (direct shortages) signify over crowding in the district of Bangalore. More precisely large scale public investment rather do not seem to require investment in housing by individual households. The households requiring own houses seem to be capable of investing in permanent housing due to the probable higher urban incomes. The case of Gulbarga's larger share of permanent stocks can be attributed to the easy availability of local resources like stones and slate slabs. Therefore generally the construction would contribute to permanent stocks. Existence of considerable part of stocks as serviceable temporary should be due to the poorest who cannot afford even preparation and transporting of slabs from quarrying places. The district of Belgaum is considerably endowed with stone and slab resources suitable for permanent stocks and semi-permanent stocks. The case of Coorg can be explained as a result of twin factors: one, the probable high income level

in spice economy.[2] Two, Coorg being a maland district, receives more amount of rains. The case of Kolar can be explained as a result of industrialized town i.e. Kolar Gold Fields City which should have larger proportion of permanent structures (Map 3.4).

The districts of N. Canara, S. Canara, Hassan, Chikamagalore are the ones with considerable share of permanent stocks and significant share of semi-permanent houses. This is because of their existence in coastal and malnad regions which receive more rains than other regions and have rich fuel resources for inexpensive production of burnt bricks and tiles.

The districts of Bellary, Bidar, Bijpur, Dharwar, Raichur and Chitradurga show significant proportion of non-useable stocks. The problem of these areas is non-availability of suitable soils for brick making. The first four districts of N. Maidan region and the last one of S. Maidan have black soils suitable for cotton production but not brick making. A greater scarcity of fuel wood, for preparing quality building raw materials, prevents permanent house construction. Quality materials in these districts would be beyond the imagination of larger section of people. Therefore, the districts of Bangalore, Belgaum, Coorg, Gulbarga, Kolar, Mysore and Shimoga can said to be better placed in quality. The districts of Bellary, Bijpur, Dharwar and Raichur can be pointed out as

---

2. See District per capita income, Table Appendix-I.

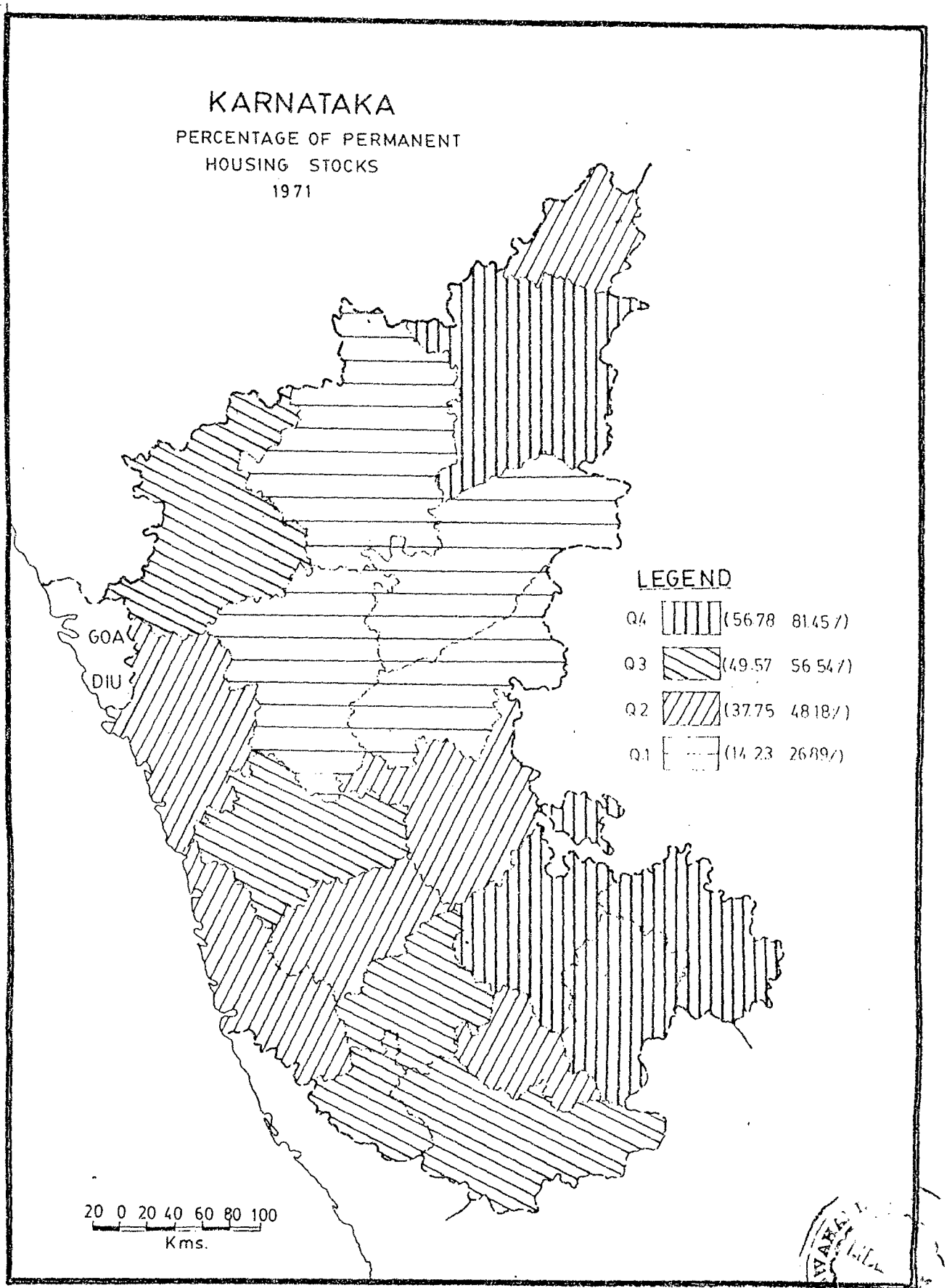

KARNATAKA
PERCENTAGE OF PERMANENT
HOUSING STOCKS
1971
LEGEND
Q4 (56.78 81.45 %)
Q3 (49.57 56.54 %)
Q2 (37.75 48.18 %)
Q1 (14.23 26.89 %)
GOA
DIU
20 0 20 40 60 80 100
Kms.

Fig. 3.4

very poor since more than half of the stocks here are non-useable. The rest of the districts, with considerable share of permanent and significant share of semi-permanent stocks, can be pointed as moderate quality areas. Here it is evident that quality of housing structure have largely depended upon factors like availability of local resources and regional necessities. With the available data it would be difficult to comment upon economic factors, specially income levels in different districts.

The distribution of housing stocks into various categories in cities is again self explicable, since the factors affecting housing quality in the districts have been explained in detail in the preceding analysis. Lack of data on economic indicators, make us refrain from any type of discussion beyond the same factors analysed earlier.

3.7 Direct Shortages

In this connection, it would be relevant to identify the number of households which do not have a separate house and so have overcrowded on existing stocks. Precisely, the direct shortages are equal to total number of households, minus total number of housing units. The existence of significant proportions of households as direct shortages in highly urbanized as well as less urbanized districts does not seem to support the view that highly urbanized districts would have

more direct shortages than the less urbanized ones. However, we will not be able to completely refute high urbanization high direct shortages relationship. Because due to the existence of more number of households, in highly urbanized areas, the actual figures of direct shortages tend to be greater in number. Therefore, if the direct shortages in highly urbanized areas like Bangalore and Mysore can be attributed to overcrowding, the same can be the result of lower incomes in the areas of less urbanization like Bidar, Coorg, Hassan and Mandya (Map 3.5).

3.8 Degree of Privacy

Though one can argue for the measurement of privacy indicator with reference to floor area and cubic feet structure available per person, more than two persons per room would indicate lack of privacy. It should be remembered that floor area would reflect the degree of comfort a person enjoys rather than privacy. In the urban areas where familial relationships are changing rapid, ways of living are gaining sophistication and where houses are generally small, an average of two persons per room would be desirable to ensure maximum privacy. The average number of persons per room and per household have been computed as follows:

(a) $$\frac{\text{Total urban population}}{\text{Total no. of rooms in urban areas}}$$

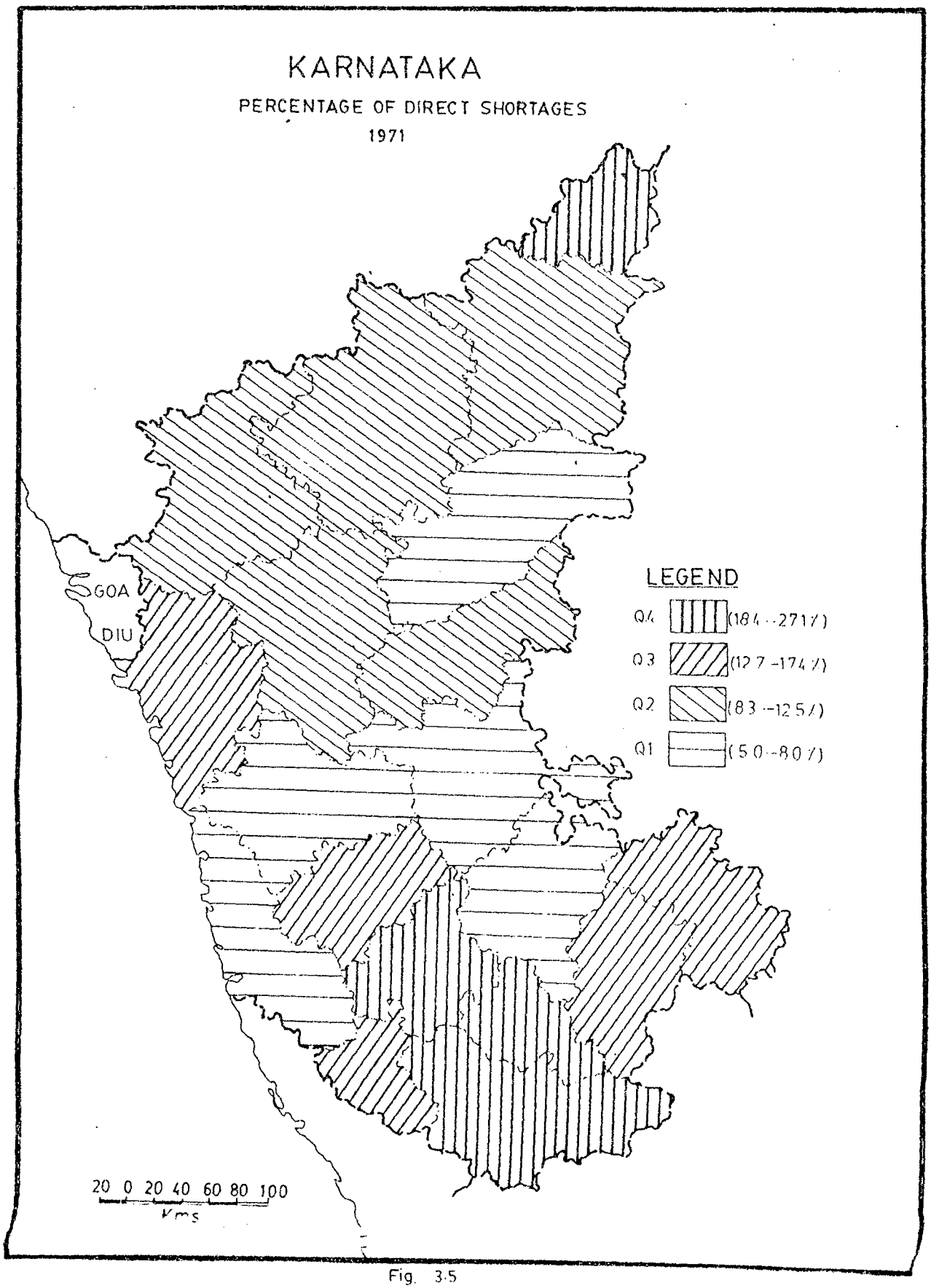

KARNATAKA
PERCENTAGE OF DIRECT SHORTAGES
1971
GOA
DIU
LEGEND
Q4 (18.4 - 27.1 %)
Q3 (12.7 - 17.4 %)
Q2 (8.3 - 12.5 %)
Q1 (5.0 - 8.0 %)
20 0 20 40 60 80 100
Kms

Fig. 3.5

(b) $\frac{\text{Total urban population}}{\text{Total urban households}}$

The figures of average number of persons per room and per household show marginal inter-district variations in 1961 as well as 1971. All the districts except Dharwar in 1961 and all the districts except Coorg in 1971 show more than two persons per room. A significant improvement in the degree of privacy is observed in Coorg in 1971 over 1961 due to a decline in the number of persons per room. Contrary to Coorg's experience, the situation in Dharwar has deteriorated due to an increase in the number of persons per room from below two, to more than two. A hike in the number of persons per room from 1.18 in 1961 to 2.95 is a significant decline in the degree of privacy in Dharwar (Table 3.5).

A clear shortage in the availability of rooms in rest of the districts and consequent lower degree of privacy are evident from the average figures of more than two persons per room. An uniform fashion of degree of privacy available in various districts does not seem to support the high urbanization lower degree of privacy hypothesis. A highly urbanized district like Bangalore and less urbanized district like Bidar show a similar degree of privacy with 2.64 and 3.0 number of persons per room.

The average number of persons per room being almost uniform in all the districts, there have been no significant

Table 3.5 Karnataka : Average Number of Persons per Room and per Household (Urban Areas and Cities, 1961 and 1971)

Sl. No.	District	Average number of persons per Room		Average number of per household		City Code	COLUMN 3 TO 6 REPEATED FOR CITIES			
		1961	1971	1961	1971		1961	1971	1961	1971
1	2	3	4	5	6	7	3	4	5	6
1.	Bangalore	2.78	2.64	5.35	5.58	1	2.96	2.58	5.32	5.57
2.	Belgaum	2.66	2.62	5.69	5.81	2	2.59	2.40	5.69	5.88
3.	Bellary	2.89	3.06	5.19	5.50	3	2.76	2.91	5.50	5.82
4.	Bidar	2.88	3.01	5.79	6.53					
5.	Bijpur	2.62	2.78	5.61	5.81	4.	2.65	2.69	5.87	5.82
6.	Chikmagalore	2.04	2.29	5.48	5.74					
7.	Chitadurga	2.54	3.10	5.73	5.96	5	2.32	2.90	5.64	5.89
8.	Coorg	1.18	1.72	4.77	5.09					
9.	Dharwar	2.45	2.95	5.63	5.77	6	2.19	2.85	5.61	5.75
10.	Gulbarga	2.46	2.77	5.25	5.73	7	2.66	2.86	5.41	5.94
11.	Hassan	2.38	2.10	5.67	5.78					
12.	Kolar	2.45	2.52	5.40	5.71					
13.	Mandya	2.88	2.75	5.32	5.51					
14.	Mysore	2.61	2.53	5.35	5.76	8	2.46	2.38	5.24	5.80
15.	N. Canara	2.17	2.40	5.50	5.62					
16.	Raichur	2.55	2.78	5.07	5.29					
17.	Shimoga	2.33	2.54	4.96	5.93					
18.	S. Canara	2.10	2.22	5.53	6.20	9	2.21	2.07	5.39	6.18
19.	Tumkur	2.09	2.29	5.38	5.55					
20.	State	2.52	2.63	5.41	5.72	$\bar{X}$	2.80	2.62	5.51	5.85
21.	India	2.62	2.70	5.07	5.54					

inter-district variations in the average number of persons per household. There has also been a rise in the number of persons per household from 5.41 in 1961 to 5.75 in 1971, resulting in a fall in the degree of privacy. The degree of privacy cannot rise unless the number of persons per household decline and simultaneously there is an increase in the number of rooms.

Degree of Privacy in the Houses of Different Sizes

In support of a statement made earlier, "since large number of household live in one or two room accommodation, they must be lacking adequate privacy", the empirical evidence suggests a serious lack of privacy among the families living in one room houses. Almost all the districts in 1961 show 3.5 to 4.5 number of persons in single room accommodation. The situation has worsened since the range of figures move to 3.7 to 5.3 in 1971 for the same category of housing units.

The double room accommodation too indicates significant inadequacy of privacy. Almost all the district show more than two persons per room in double room in 1961. The situation has deteriorated due to an increase in the number of persons per room in 1971. It ranges between 2.4 to 3.2 in 1971 and indicates a further decline in the degree of privacy. The situation in three room accommodation is no better than the previous cases. However, a good number of ten districts in 1961 show less than two persons per room. In 1971, the

situation worsens since the number of districts with more than two persons per room, increases. Excepting the districts of Coorg, N. Canara and Raichur, the rest of the district show more than two persons per room in the three room houses.

The degree of privacy is adequate only for the families living in the four room and five (and above) rooms housing units. This is due to the existence of the size of household in proportion to adequate number of rooms. During 1961as well as 1971 the number of persons per room in these houses has remained less two persons to indicate adequate privacy.

To sum up, we can conclude that degree of privacy for larger section of the population is inadequate and over time there has been a declining trend in the same. The uniform situation of inadequate privacy prevailing in various districts does not support 'high-urbanization-low privacy' hypothesis. The situation of single room families in all the districts is precarious. The situation of families living in four and five (and above) rooms, is comparatively better but small proportion of households in this sizes of houses do not exhibit a overall satisfactory scene in the availability of privacy.

Degree of Privacy in Cities

There appears no significiant difference in the adequacy of privacy between the urban areas as whole and cities in particular. The same tendency of 2-3 persons per room and 5-6 persons per household prevails in the cities during 1961-

71. The number of persons per room in different sizes of houses suggest lack of privacy in single, double and three room houses. The degree of privacy is adequate in the category of four and five+ room houses.

Since the cities are more prone to large concentration of households in 1-3 room houses, larger section of population is facing the problem of inadequate privacy. The concentration of households in 1-3 room houses, being slightly larger in cities compared to urban areas as a whole, the proportion of city population facing the problem of inadequate privacy is slightly larger.

3.9 Public Utilities

An examination of housing situation with reference to a package of public utilities, would project the housing quality in totality. Smooth functioning of a city/town depends upon how far the population has been supplied with standard urban services like water supply, electricity, toilet facilities, sewerage and drainage. Certain indicators tend to improve with the levels of urbanization. However, the adequate supply of these services mainly depends upon two factors. One, availability of natural resources and second, the financial position of the concerned city/town's administrative body. Hence the supply of services would be variable over time and

space. Despite such constraints an assessment of quality can be made, with reference to certain fixed standards 'desired' and standards 'achieved'. Precisely it would indicate the magnitude of shortages. Therefore, a list of standards has been given as below for direct comparison of figures shown in table No. 3.6 (a & b).

1. Road Length : It is assumed that higher the road length available, higher is the accessibility to various places within a city/town. However, since, the road lengths cannot go beyond certain limit, it would be difficult to fix a standard.

2. Toilets: Every household should have its own toilet facility Keeping in view, an average of 6 members in an household of urban Karnataka, we can fix a standard requirement of 167 toilets per thousand urbanites.

$$S = \frac{6}{1000} - 166.66$$

3. Electricity : Every household should have an electric connection for lighting purpose.

4. Assuming that at a length of every 32 metre point, there should be a road lamp, a standard of 31.25 lamps can be considered per km length. So a standard of 977 lamps per km^2 can be considered minimum requirement:

$$S = \left(\frac{1000 \text{ mts}}{32}\right)^2$$

5. Water Supply: Town and country planning organization of India has classified cities/towns into six grades of settlements

and fixed standard per capita gallons to be supplied.

Sl. No.	Grades	Population	Standard Quantity in gallons
1.	A (Special)	20 lakhs +	60
2.	A	5 - 20 lakhs	45
3.	B	1 - 5 lakhs	35
4.	C	50000 - 1 lakh	25
5.	D	20000 - 50000	15
6.	F	Less than 20000	10

For urban areas as a whole, since all the towns of Karnataka in 1971 are below 'A' grade excepting Bangalore, mean average of the grades B - F can be taken as a standard. It would be 21 gallons per capita and for cities, the actual standards i.e. 60 gallons per capita, have been considered*.

6. No standards have been worked out here for comparing sewerage and drainage system. However, the types of sewerage and drainage with number of towns falling under each category are presented. The categories are:

1. Sewers
2. Open Surface Drains
3. Box Drains
4. Sylk pattern drains
5. Mixed system, and
6. No sewerage and drainage.

7. Similarly no standards have been worked out for the method of human waste disposal. The number of towns having different methods has been presented in broad categories as follows:

1. Manual (head loads and baskets)

---

* See, R. Zakaria, Augmentation of Financial Resources of Urban Local Bodies (Govt. of India Press, Faridabad, 1963), pp. 32-35, 108-117.

Table 3.6(a) Karnataka: Public Utility Services in Urban Areas, 1971

Sl. No.	Districts	Road length per km^2 (urban)	No. of toilets per 1000 urbanites	No. of water borne toilets/ 1000 urbanites	No. of domestic electric lines/ 1000 house-holds	No. of Road lights per urban km^2	% of urban population not being provided protected water	No. of Towns with no protec-ted water supply	Per capit supply of protected water(in gallons)
1.	Bangalore	4.90	24.3	5.1	487.5	96.3	1.2	3	17.73
2.	Belgaum	0.79	21.25	1.16	325.5	19.8	23.6	9	8.22
3.	Bellary	1.18	34.4	3.4	292.7	26.6	17.4	5	12.56
4.	Bidar	1.26	30.0	2.4	201.8	41.8	22.2	2	6.54
5.	Bijpur	0.67	12.2	1.6	175.4	10.5	20.7	7	13.44
6.	Chikmagalore	3.14	57.3	18.3	404.3	42.0	20.6	2	6.46
7.	Chitradurga	3.99	48.5	18.0	437.6	88.6	3.6	2	10.71
8.	Coorg	2.05	41.3	6.4	330.9	32.1	17.4	3	12.02
9.	Dharwar	1.00	26.2	3.2	279.8	23.2	33.6	11	16.12
10.	Gulbarga	4.34	32.0	10.8	229.0	98.5	14.8	3	10.30
11.	Hassan	3.89	71.8	31.8	484.9	82.5	0	0	12.27
12.	Kolar	3.94	54.8	9.8	288.3	45.4	1.5	1	5.48
13.	Mandya	3.30	42.8	23.0	322.0	36.0	6.2	2	6.78
14.	Mysore	4.07	90.9	80.8	398.2	68.3	5.6	4	26.18
15.	N. Canara	1.94	27.1	13.5	242.2	52.6	51.8	4	13.84
16.	Raichur	1.57	19.0	4.8	220.3	72.6	26.4	5	10.69
17.	Shimoga	9.55	81.65	50.2	417.0	108.0	13.5	4	23.17
18.	S. Canara	2.24	37.5	22.8	411.3	35.3	42.5	12	8.95
19.	Tumkur	3.41	44.5	8.36	397.0	57.6	0	0	12.58
	Standard	-	167	-	1000	997	-	-	21

Table 3.6(b) Karnataka : Public Utility Services in Cities, 1971

Sl. No.	Cities	Road length per km^2	No. of toilets/1000 person	No. of water borne toilets/ 1000 person	No. of domestic electric lines/ 1000 house-holds	No. of Road lights/ km^2	per capita protected water supply in gallons	Sewerage and drainage system	Method of Human waste disposal	GRADE
1.	Bangalore U.A.	5.74	18.73	5.06	506.4	120	18.9	SW + OSD	Man+S.Mech+Mech	A
2.	Belgaum U.A.	3.47	28.80	DNA	490.0	83	8.6	OSD	S.Mech	B
3.	Bellary city	6.78	54.39	3.64	360.0	119	19.3	OSD	S.Mech+Mech	B
4.	Bijpurcity	5.17	14.59	2.00	192.5	96	15.0	OSD	S.Mech+ Mech	B
5.	Davangerecity	4.47	44.92	12.31	475.9	130	11.6	SW + OSD	S.Mech+ Mech	B
6.	Hubli-Dharwar	1.17	21.10	5.65	340.4	28	19.1	SW	S.Mech+ Mech	B
7.	Gulbarga city	13.38	25.57	13.97	261.4	217	12.4	OSD	S.Mech+ Mech	B
8.	Kolar Gold Fields	2.19	57.67	16.59	196.7	9	4.4	OSD	S.Mech+ Mech	B
9.	Mysore city	8.98	117.06	116.80	457.4	181	31.2	SW + OSD	S.Mech+ Mech	B
10.	Bhadravati city	6.06	74.63	57.38	390.1	148	26.9	SW + OSD	S.Mech+ Mech	B
11.	Shimoga city	38.75	71.20	27.77	484.1	340	20.9	SW+BD+SD	S.Mech+ Mech	B
12.	Mangalore city	4.02	43.32	25.32	509.0	101	9.37	SW + OSD	S.Mech+ Mech	B
	Standard	-	1000	-	1000	997	33			

Codes: SW = Sewers, OSD = Open Surface Drains, BD = Box Drains.

Man = Mannual, S.Mech. = Semi-mechanical, Mech = Mechanical

2. Semi-mechanical (wheel barrows, hand carts, bullock carts, trucks and tempos)

3. Mechanical (sewers and sceptic tanks)

4. No method of human waste disposal

All the indicators presented in the table are self explanatory about the inadequacies in the supply of public utilities. However, it would be difficult to furnish generalized reasons for the inadequate supply, since they are a function of local resources and urban finance. Hence they fall for a detailed probe into the whole problem of supply of utilities in particular.

The serious shortage of toilet facilities in the urban areas, despite taking all typies of toilets into account signify overcrowding of large population on small number of toilets and also use of open fields for defection. The use of open fields in the outskirts of urban areas of Karnataka is common. However, this practice is widely prevalent in cities too where the danger of causing unhygienic conditions is greater. The quality goes further low when we compute the figures of water borne (more hygienic) toilets per thousand urbanites.

Although no standards have been set in this work, to assess the quality of sewerage system and method of human waste disposal, it becomes necessary to make certain important comments. A lack of urban sophistication is evident from the fact that there are very few towns having faull sewer system

Table 3.7 Karnataka: Number of Towns by Systems of Sewerage, Drainage & Human Waste Disposal (Urban Areas, 1971)

Sl. No.	Districts	System of Sewerage & Drainage							System of Human Waste Disposal					
		1	2	3	4	5	6	Total	7	8	9	10	11	Total
1.	Bangalore	0	9	0	0	5	0	14	0	1	9	3	1	14
2.	Belgaum	0	16	1	0	0	1	18	3	15	0	0	0	18
3.	Bellary	1	10	0	0	0	0	11	1	2	0	8	0	11
4.	Bidar	0	5	0	0	0	0	5	0	0	0	5	0	5
5.	Bijpur	0	16	0	1	0	0	17	6	6	0	4	1	17
6.	Chikmagalore	0	6	1	2	0	0	9	0	1	2	6	0	9
7.	Chitradurga	0	11	0	0	1	0	12	0	1	0	9	2	12
8.	Coorg	0	11	0	0	0	0	11	0	0	8	2	1	11
9.	Dharwar	1	15	1	0	0	1	18	2	13	1	2	0	18
10.	Gulbarga	2	10	0	0	0	0	12	3	3	1	5	0	12
11.	Hassan	1	4	1	1	3	1	11	1	8	0	1	1	11
12.	Kolar	0	12	0	0	1	0	13	0	2	4	7	0	13
13.	Mandya	0	7	0	0	2	1	10	0	0	4	3	3	10
14.	Mysore	0	9	0	2	2	0	13	0	0	4	8	1	13
15.	N. Canara	0	8	0	0	0	0	8	0	6	2	0	0	8
16.	Raichur	0	10	0	0	0	0	10	3	4	0	3	0	10
17.	Shimoga	0	6	0	2	3	1	12	0	2	1	8	1	12
18.	S. Canara	0	7	0	1	2	4	14	0	2	4	8	0	14
19.	Tumkur	0	12	0	0	0	0	12	0	10	1	1	0	12
20.	State	5	184	4	9	19	9	230	19	76	41	83	11	230

Titles of column Nos. 1 to 11 are: Sewers-1, Open Surface Drains-2, Box Drains-3 Sylk Pattern Drains-4, Mixed System-5, No Sewerage and Drainage system-6, Mannual-7, Semi-mechanical-8, Mechanical-9, Mixed System-10, No System of Human Waste Disposal-11.

for disposing fluid wastes. Though we find a large number of towns with open surface drains, lack of data regarding the materials used in the construction of these drains, refrains from making any comments on their quality. The existence of 9 towns without any type of sewerage disposal system signify mere growth of population in some rural areas to qualify for becoming a town.

Another important utility that calls for attention is the method of human waste disposal. We find very small number of towns having sewers and septic tanks. Large number of towns having manual and semi-mechanical modes of waste disposal like - head loads, baskets, wheel barrows, hand carts, trucks, tempos etc. signify absence of sophistication and obsolete way of urban living. Especially the modes which cause serious concern are head loads, baskets, wheel barrows and hand carts etc. where manual involvement is more and that causes health hazards. The socio-medical implications in the practice of such modes call for immediate improvement. Though it is agreeable with an argument that by 1980's, these obsolete methods must have disappeared, their existence in significant number of towns cannot be ruled out. It is surprising that a city like Bangalore has manual mode of human waste disposal in 1970. The existence of dual modes of human waste disposal signify the failure of even cities in taking over to complete mechanised system of waste disposal. The problem also pin points lack of municipal financing towards an important activity of maintaining quality of life.

A serious shortage of water supply and lack of urban water supply infrastructure is clear from the fact that per capita availability is too low and as many as 79 towns do not have protected water supply. Specially the districts of Belgaum, Dharwar, N. Canara and S. Canara are the ones that call for serious concern, since significant proportions of urban population do not have piped water. However, in the cities/towns where water is supplied through taps, it should be remembered that significant intra-town disparities might exist. In the case of road lights, the availability seems to be satisfactory. However, utility available from these lights again depends on how well the periodical maintenance is carried out.

However, the difficulty, in explaining the exact reasons for levels of improvement and supply management of public utilities, require independent studies. In short, the present supply of utility packages in the cities as well as other urban areas gives an idea that the quality of living in urban Karnataka is pretty low.

3.10 Housing Shortage

Leaving apart the housing standards like number of persons per room, per household, tenure status etc.., if we confine ourselves to the problem of dilapidation of housing structures, we are sure to land up at a huge deficit of useable

housing stock. Elimination of non-useable stocks and confining to the condition that every household should have its independent housing units would make up total shortages in the stocks. It would be:

$TS^t = NUS + DS$

TS = Total shortages at t year

NUS = Non-useable (serviceable temporary plus non-serviceable temporary) stocks

DS = Direct shortages (total number of households minus total housing stock)

With this method, a total housing shortage of 480,865 housing units in the state has been calculated. It includes 166,675 serviceable temporary, 139,905 non-serviceable temporary stocks and 174,285 units of direct shortages. Now a computation as follows would show the magnitude of shortage as a proportion to total households in each district (Table 3.8 & 3.9):

$$P_i = \frac{\text{Total shortages}}{\text{Total no. of households}} \times 100$$

The proportion of shortage to total households, does not seem to support the idea of 'high urbanization - larger shortages' relationship. Rather it seems to be a result of dual reasons. With the available evidence we can hold that larger shortages in highly urbanized areas like Dharwar and Bellary, are a result of urban growth, income disparities and local resources. Significant shortages in the less urbanized districts like Bidar, Bijpur and Raichur, can be attributed to income

Table 3.8 Karnataka : Housing Shortage in Urban Areas, 1971

Sl. No.	Districts	Service-able temporary	Non-ser-viceable temporary	Direct short-ages	Total	Total shortage as % of total no. of house-holds	District total shortage as % of State total shortage
1.	Bangalore	8180	18150	62438	88768	24.81	18.46
2.	Belgaum	9460	2830	11111	23401	26.45	4.86
3.	Bellary	24785	17800	5561	48146	81.00	10.00
4.	Bidar	3875	1010	5314	10199	52.13	2.12
5.	Bijpur	54710	3470	9163	67343	89.41	14.00
6.	Chikmagalore	30	1590	2749	4369	20.33	0.90
7.	Chitradurga	3915	6765	2462	13142	27.12	2.73
8.	Coorg	130	885	1625	2640	22.09	0.54
9.	Dharwar	20835	28510	11372	60717	46.18	12.62
10.	Gulbarga	14840	1460	4785	21085	36.97	4.38
11.	Hassan	45	1545	5174	6764	24.05	1.40
12.	Kolar	6050	6175	7369	19594	33.30	4.07
13.	Mandya	485	6405	6460	13350	44.06	2.77
14.	Mysore	195	5280	20473	25948	27.33	5.39
15.	N. Canara	105	4230	4286	8621	30.82	1.79
16.	Raichur	15870	15675	3402	34945	81.95	7.26
17.	Shimoga	235	5360	4511	10106	18.13	2.10
18.	S. Canara	260	8665	3535	12460	19.81	2.59
19.	Tumkur	2670	4100	2495	9265	26.64	1.92
20.	State	166675	139905	174285	480865	36.79	100

Note: Shortage in actual number of housing units.

Table 3.9 Karnataka : Housing Shortage in Cities, 1971

Sl. No.	Cities	Service-able temporary	Non-ser-viceable temporary	Direct short-ages	Total	Total shortage as % of total no. of house-holds	City's short-age as % of total shortage of all cities
1.	Bangalore city	6030	9180	55931	71141	22.31	45.45
2.	Belgaum city	180	155	6376	6711	17.89	4.28
3.	Bellary city	11050	5435	2943	19426	79.03	12.41
4.	Bijpur city	12090	1030	4193	17313	95.08	11.06
5.	Davangere city	25	1755	1176	2956	14.34	1.88
6.	Hubli-Dharwar	1005	8925	5568	15498	22.91	9.90
7.	Gulbarga city	3085	255	1769	5109	22.19	3.26
8.	Mysore city	110	1080	14604	15794	24.98	10.09
9.	Mangalore city	25	295	2235	2555	7.40	1.63
10.	All cities	33600	28110	74795	156505		100

Note: Shortage in actual number of housing units.

disparities and local resources. Thus, the shortage phenomenon in housing tends to strongly depend upon income and availability of raw materials that can be easily transformed into quality inputs (Map 3.6).

However, an examination of the concentration of housing shortage among the districts tends to slightly support 'high urbanization - large shortage' relationship:

$$C = \frac{\text{District shortage}}{\text{State shortage}} \times 100$$

A larger concentration of shortages noticed in the highly urbanized districts of Bangalore, Bellary and Dharwar tend to support the above mentioned hypothetical relationship. Therefore it would become inevitable to accept the role of urban growth also as a factor in the formation of housing shortage (Map. 3.7).

3.11 Summary

To summarise the whole housing scene in Karnataka, the stock utilization for residential purposes is more important as in the case of India, followed by commercial and social purposes. The cities in Karnataka too do not differ from the general pattern of stock utilization. Both, urban areas and cities have had greater housing speculation in the sense that large number of households live in rented households as against

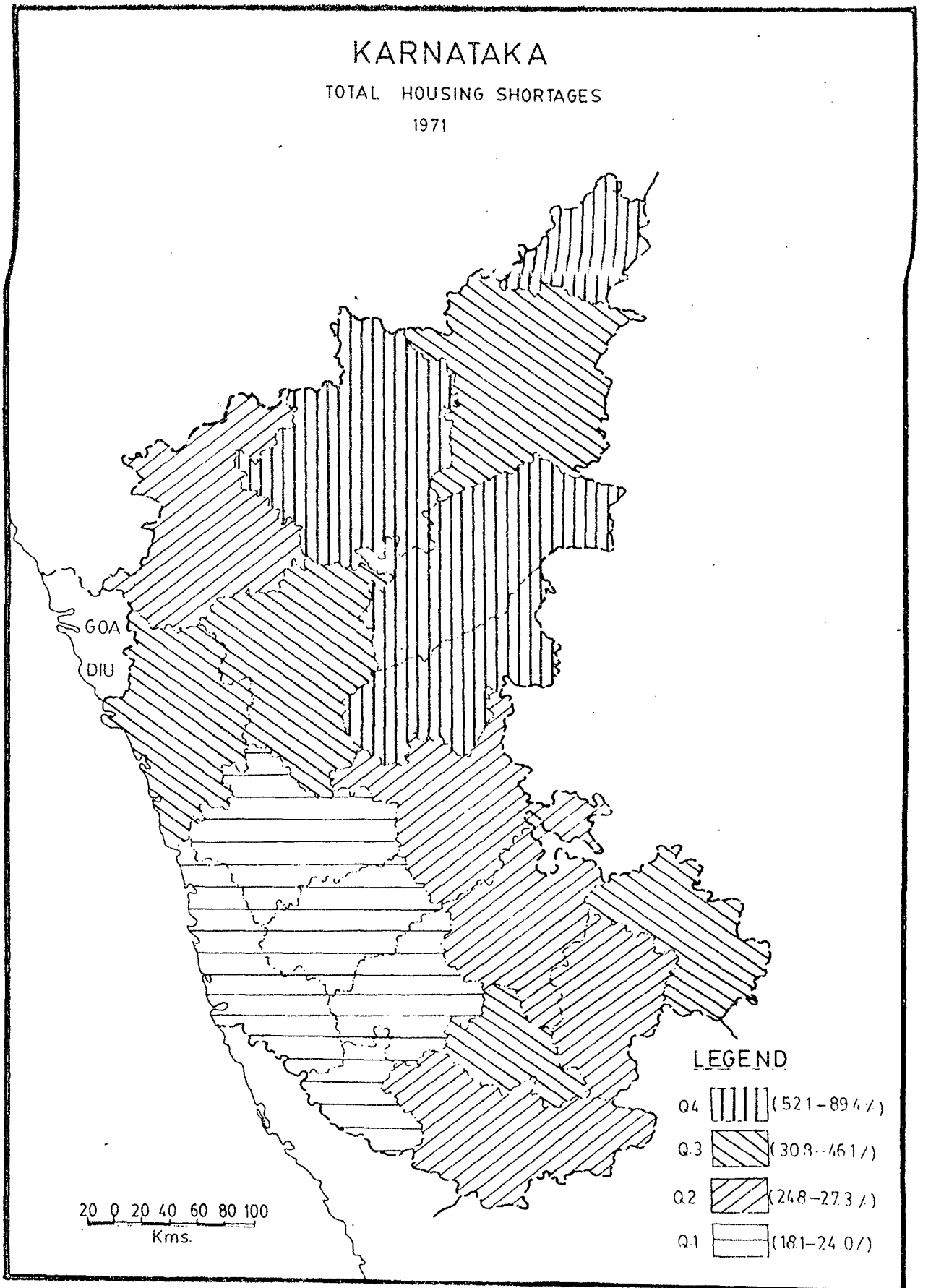

KARNATAKA
TOTAL HOUSING SHORTAGES
1971
GOA
DIU
20 0 20 40 60 80 100
Kms.
LEGEND
Q4 (52.1-89.4%)
Q3 (30.8-46.1%)
Q2 (24.8-27.3%)
Q1 (18.1-24.0%)

Fig. 3.6

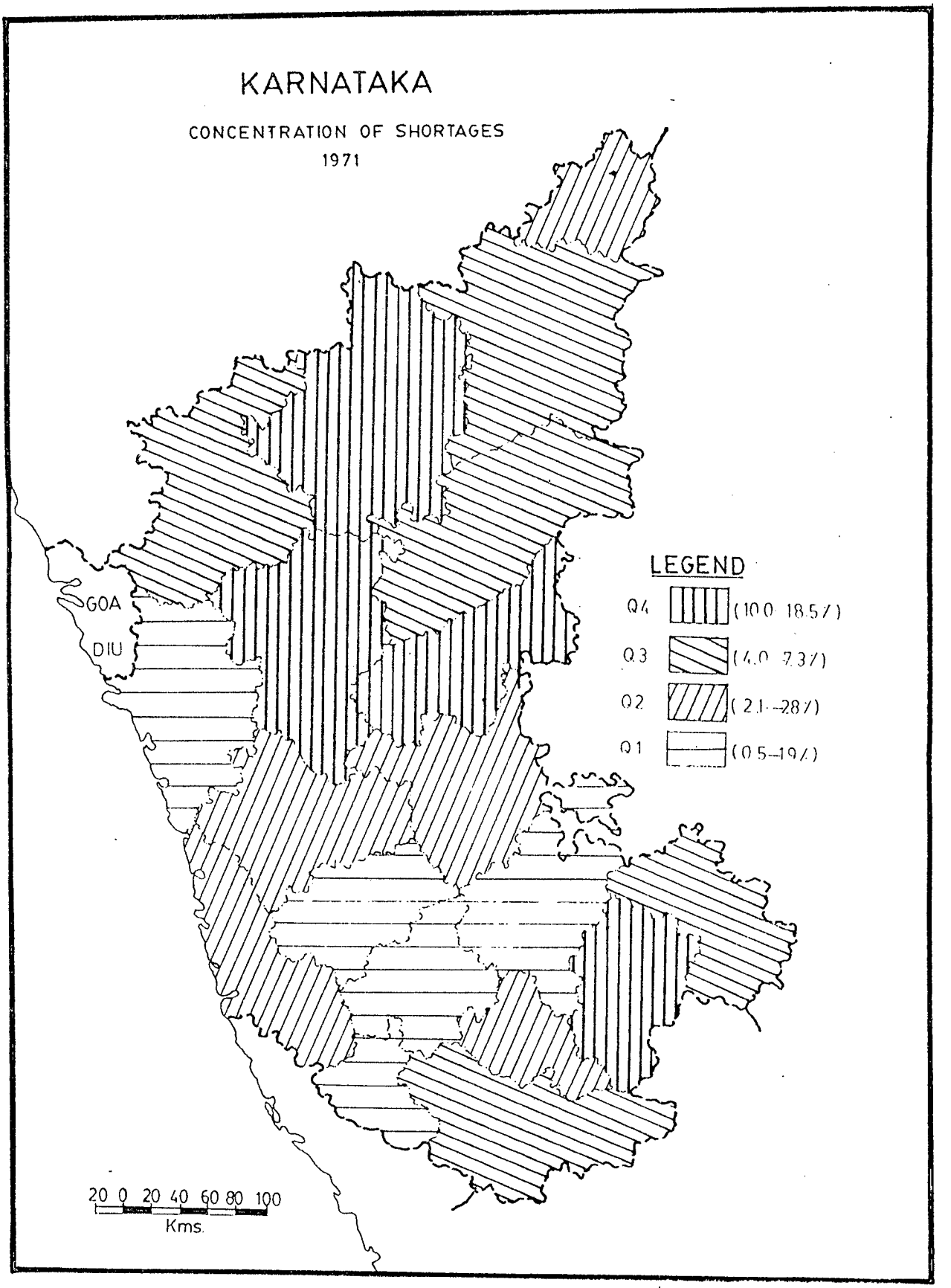

KARNATAKA
CONCENTRATION OF SHORTAGES
1971
GOA
DIU
LEGEND
Q4 (10.0 18.5%)
Q3 (4.0 7.3%)
Q2 (2.1-2.8%)
Q1 (0.5-1.9%)
20 0 20 40 60 80 100
Kms.

Fig. 3.7

a small number of owner households. An empirical evidence comes up showing a linkage that large number of households in rented houses-living in single room houses - more than two people sharing one room greater lack of privacy- leading to a conclusion that large section of the urban population does not enjoy comfortable life. The quality of housing being a function of local resources and floor area requirements, we find significant inter district variations in the availability of permanent houses. However, the process of development has had its influence on permanent housing in Bangalore. In terms of proportions, we find no significant inter-district variations in the direct shortages, but greater concentration of direct shortages in the state is in the urbanised districts. The degree of privacy tends to be low due to simultaneous increase in the size of household and size of house. So the number of persons do not actually decline to enchance the degree of privacy. There is a greater lack of privacy in 1-3 room houses but it improves in 4 and 5+ rooms because of decline in the household size. The supply of public utilities is quite unsatisfactory -if comparisons are made with reference to specific minimum standards. However, it becomes difficult to infer the possible reasons since they are a function of local resources and financial position of local bodies. The proportion of shortages to the total households do not support the 'high urbanization- high shortages'

premise. But the concentration of total shortages tend to support the same premise. This is due to the fact that though proportions are similar, the actual magnitude can be larger in highly urbanized districts to show greater conentration.

C H A P T E R IV

HOUSING AND URBAN DEVELOPMENT ADMINISTRATION

4.1 Introduction

Supply of housing to a large section of the population at affordable costs requires organized functioning and specific policy guidelines. Infact, "using housing both to generate growth in the economy and to cut down social disparities is proving to be one of the recent innovations in housing administration."[1] The growing concern at the housing situation, urbanization-industrialization-development linkages and implicit requirements of employment-income generation have called for policy interventions by the state. However developing effective intervention mechanisms in an economy, where multiplier sectors receive greater attention and housing and urban development faces resource constraints, would be a complex exercise. In this context, this chapter is an attempt to review the urban and housing policy, organization, management, investment, finance and planning.

It is mainly an attempt to assess the efforts being made to solve the problems arising out of urbanization and poor housing conditions in the urban areas. The review of

---

1. S.H.K. Yeh and A.A. Laquian (eds.), *Housing Asia's Millions: Problems, Policies and Prospects for Low Cost Housing in South-East Asia* (I.D.R.C., Ottawa, 1979), p. 73.

housing and urban policy tries to identify the stages of development in the evolution of a concrete policy. Simultaneously the state investment under five year plans has been taken into account. The section on organization and management presents the existing institutional infrastructure for housing and urban development administration in the state. Some of the major schemes and target achievements are also presented. The section on housing finance presents the whole existing finance market and mechanisms of monetary inflows into housing sector. And finally a brief comment has been made on the state policy interventions in the field of housing and urban development.

The whole chapter is a synthesis of information gathered from concerned official bodies in the state administration, in the form of official reports and published documents. The analysis refers to state level and wherever possible, the district profiles are outlined. The state level analysis should hold good because of uniformity in the administration of plans and schemes in the state.

4.2 Urban and Housing Policy

The policy statements of the government on housing and urban development are found in the Five Year Plan documents and they are exact replica of the national policy on

the same issues. The first two plan (1951-61) periods are marked by serious resource constraints and lack of capital formation in the housing sector. Basically there is no concrete policy declared regarding strategies for housing activity. The public sector intervention in housing activity appears to be more of a welfare measure than an attempt to integrate it into the mainstream of economic development. The emphasis during 1951-61, being more on output, the major chunk of investment naturally has been in the sectors of quicker and multiplier production. The situation of resource constratins and low capital formation in housing have continued in the III Plan as well. However a clear identification and recognition of the problem has been made. It is during the III Plan we notice a clear acceptance by the government of its inability to solve the problem single handed. Therefore, there is a major policy divergence and the government calls for investment by private enterprise. It says, "thus the problem is a colossal one and government alone would not be able to solve this. The private sector would have to play its due part".[2] A formal beginning of urban planning and introduction of 'Master Plan' concept for cities has taken place during the same plan period. Thus the housing activity gets linked to urban planning and development. The IV plan seems to have not overcome the problem of resource constraints

---

2. Karnataka Government, Draft Third Five Year Plan, 1961-66, p. 360

in housing, despite a serious concern. In addition the housing sector in the state faces a set back due to the withdrawal of several centrally sponsored programmes. The V Plan makes an attempt to understand the dynamics of urbanization and industrialization in relation to housing. In addition to the continuation of usual town planning activities, regional planning activities like Bangalore Metropolitan Plan, Dandeli Resource Region plan and Tungabhadra River Valley Plan are initiated. The plan activities for Cauvery River Valley and Krishna River Valley are extended. The VI Plan of the state for the first time makes a strong debate on regional imbalances and the possible accentuation of disparities. Therefore a regional planning policy emerges to combat spatial imbalances, with a two-tier planning process for -

i) State Sector Schemes,

ii) District Sector Schemes.

Because of this sudden and serious thought on regional imbalances in development, the state investment in housing and urban development, moves slightly up. Nevertheless the sector has faced resource constraints due to much of expansion in housing schemes. The VII Plan policy appears to be more critical about the issues relating to housing and urban development. However there has been no significant hike in the investment. The government expressing its inability to deal with

Table 4.1 Karnataka : State Investment in Housing and Urban Development, 1951-90

(Rs. Crores)

Sl. No.	Plan	Period	Total plan outlay	Outlay/ Expenditure on H & UD	% of 5 to 4
1	2	3	4	5	6
1.	I Plan	1951-56	40.50	2.59	6.39
2.	II Plan	1956-61	142.12	3.24	2.27
3.	III Plan	1961-66	250.00	5.00	2.00
4.	IV Plan	1969-74	350.00	3.00	0.86
5.	V Plan	1974-80	1350.00	52.00	3.85
6.	VI Plan	1980-85	2500.00	148.00	5.92
7.	VII Plan*	1985-90	5500.00	322.93	5.87

Source: Different Plan Documents of Karnataka.

* Proposed (Not approved) outlays.

Note : Part of outlays earmarked for housing includes both rural and urban housing outlays.

the problem, recalls a positive role by private enterprise. Therefore major public sector thrust is seen on rural housing sites services programme and funding of Karnataka Housing Board (KHB). The VII plan policy states "..... additional thrust of government during the VII plan period will need to be the evolution of policies which encourage and induce private sector activity."[3] This has resulted in the proposed investment of 5.87 per cent of the plan resources during 1985-90. Another aspect of the VII plan policy is to concentrate on providing urban infrastructure. Hence implementation of Integrated Development of Small and Medium Towns (IDSMT) programme and slum improvement schemes have gained importance. In addition several town/regional planning activities have continued. Thus the VII plan policy seems to have adopted indirect intervention mechanism to regulate urban market system and create appropriate environment for massive private investment.

The following are the legislative measures brought about from time to time by the State Government for the purpose of developing planned settlements:

1) City of Mysore Improvement Trust Board Act,1903.

2) City of Bangalore Improvement Act, 1945.

3) Town and Country Planning Act, 1961.

---

3. Karnataka Government, Draft Seventh Five Year Plan, 1985-90, pp. 422.

4) Rent Control Act, 1961.

5) Karnataka Slum Areas (Improvement and Clearance) Act, 1974.

6) Urban Land (Ceiling and Regulation) Act, 1976. It is applicable in the five urban agglomerations of Bangalore, Belgaum, Hubli-Dharwar, Mangalore and Mysore.

7) City Improvement Boards Act, 1976.

8) Bangalore Development Authority Act, 1976.

Appointment of Local Finance Commission in 1983 and formation of Directorate of Municipal Administration 1985 to guide the Local Bodies, mark the recent developments in urban development administration. A serious suggestion has also been put forward to establish Bangalore Metropolitan Regional Development Authority (BMRDA).

4.3 Organization and Management

The Department of Housing and Urban Development at the ministerial level is the apex policy making and co-ordinating agency. It's areas of intervention are housing, urban development, municipal administration and urban water supply. Apart from 248 city/town level local bodies there are several corporate and regular line agencies participating in urban development administration. The municipal administration in Karnataka can be classified into the following four categories:

KARNATAKA

ORGANIZATION OF HOUSING AND URBAN DEVELOPMENT

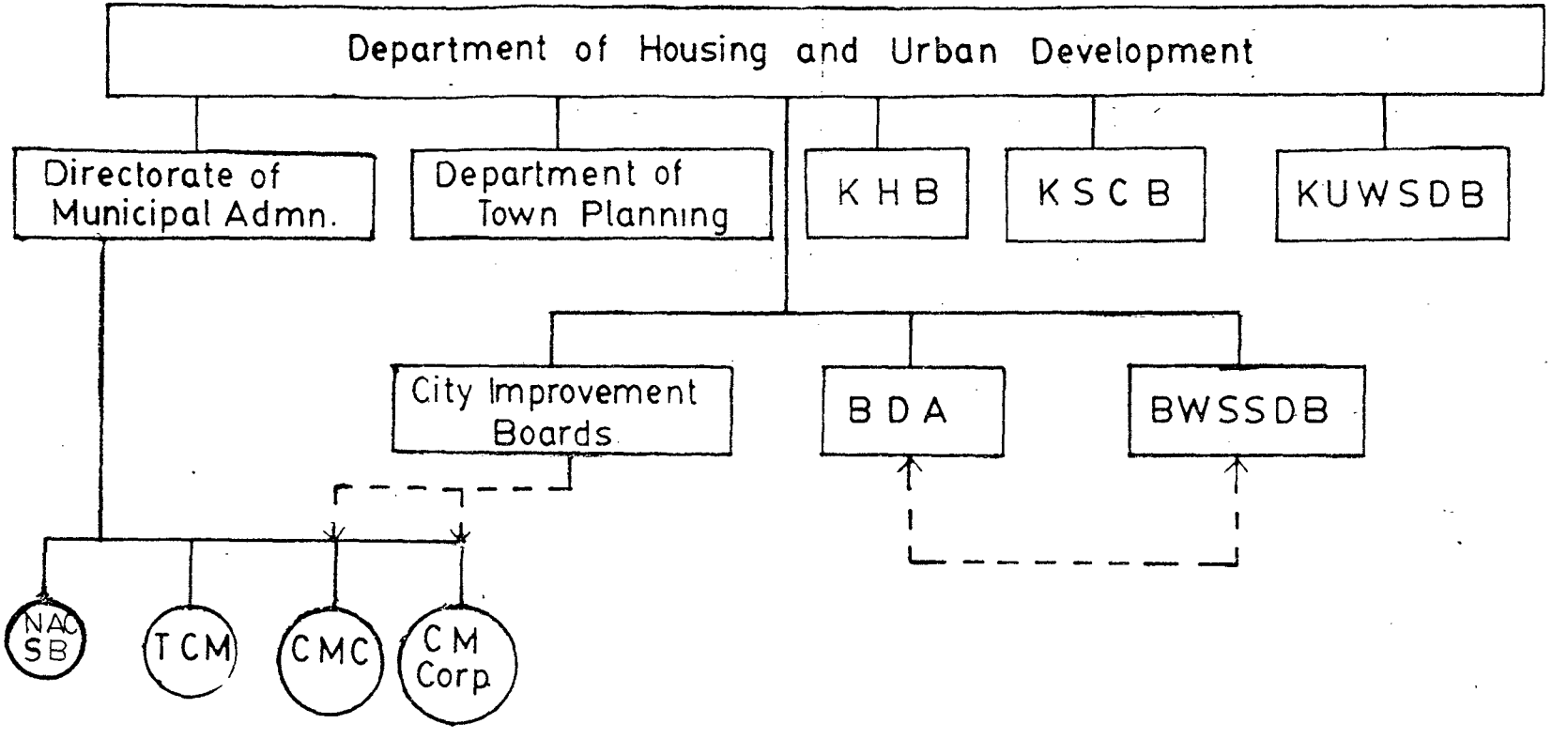


Chart 2

a) City Municipal Corporations (CM Corp)	6
b) City Municipal Councils (CMC)	16
c) Town Municipal Councils (TMC)	211
d) Notified Area Committees and Sanitary Boards (NAC & SB)	15
Total	248

The six cities where population concentration is significant and their growth is supposed to be intensifying, the local administration is managed by Corporations. Those cities are - Bangalore, Belgaum, Gulbarga, Hubli-Dharwar, Mangalore and Mysore.

A separate town planning line agency undertakes regional planning and development activities for ensuring balanced development processes. So far the town planning Department has prepared 24 comprehensive development plans (CDP) and outline development plans (ODP) for different cities. They are as follows:

Cities	Type of plan	Status
1. Bangalore, Mysore and Shimoga-Bhadravati	CDP	Approved
2. Belgaum, Dandeli, Davengere, Gulbarga, Hubli-Dharwar and Mangalore	CDP	Provisionally approved
3. Chikmagalore, Chitradurga, Hassan, Kolar Gold Fields, Udipi-Melpe and Vijaya Nagar Steel Plant Area	ODP	Approved

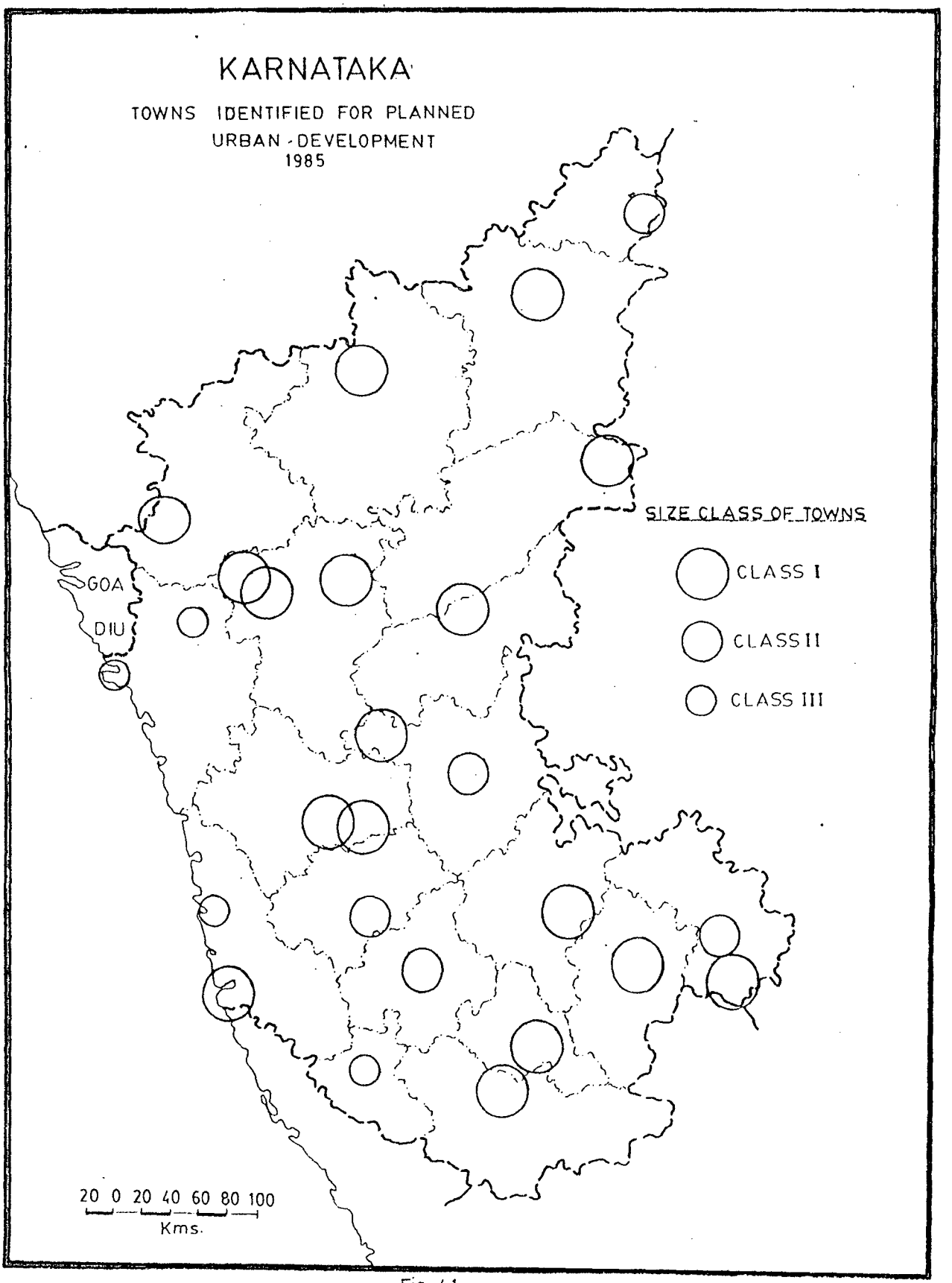

KARNATAKA
TOWNS IDENTIFIED FOR PLANNED
URBAN - DEVELOPMENT
1985
SIZE CLASS OF TOWNS
CLASS I
CLASS II
CLASS III
GOA
DIU
20 0 20 40 60 80 100
Kms.

Fig. 4.1

4. Bidar, Bijpur, Gadag-Betagere Karwar, Kolar, Madikeri, Mandya, Raichur and Tumkur	ODP	Provisionally Approved

(See Map 4.1)

The Town Planning Department is also guiding the centrally sponsored IDSMT scheme in 16 towns of Karnataka.

The regular line agencies with specific tasks are Karnataka Urban Water Supply and Drainage Board (KUWSDB), Karnataka Housing Board (KHB) and Karnataka slum Clearance Board (KSCB). These apart the two special agencies with specific boundaries of operation are Bangalore Water Supply and Sewerage Board (BWSSB) and Bangalore Development Authority (BDA). Their operation is confined to the Corporation area of Bangalore city. In addition there are 13 city Improvement Boards controlled by the Department of Housing and Urban Development. The Improvement Boards are established in important and growing cities to undertake city layout/ expansion plans and construct houses.

The KUWSDB has been able to bring as many as 240 towns under protected water supply scheme. A comparison of the number of towns with protected water supply in 1970 and 1985 show appreciable coverage made in the provision of an essential service. However the per capita supply of water may vary depending upon local availability of water resources. In 1981, the KUWSDB has also launched International Drinking Water Supply and Sanitation Scheme, (1981-90), to bring all

the cities/ towns in the state under protected water supply and sanitation scheme. This project costing a sum of 292.25 crores would give 100 per cent coverage of class I cities and 80 per cent coverage of all other towns.

The KHB is the main public sector organization engaged in the construction and supply of houses in the state. It amalgamates capital from various sources like Housing and Urban Development Corporation (HUDCO-New Delhi, the dpex housing finance agency in the country), State plan funds, Debenture issues and Deposits from allottees. So far the KHB has constructed a total number of 65914 houses for different income groups since its inception in 1956. It has invested a sum of 100.46 crores upto 1985 under two major heads viz. state plan schemes and HUDCO Schemes (Table4.2)

The KSCB is an organization looking into the problems of slums providing basic amenities and clearing and resettling of slums being the main functions, it has been able to cover 458 out of 965 declared slums under Basic Amenities Programme. Though not an adequate sum for a slum population of 9.22 lakhs, it has spent 5.68 crores upto 1985. A look at the table on slum population of important cities/towns at Karnataka suggest a serious situation in the near future. Existence of slums in all the districts except Coorg bears an evidence for deteriorating living conditions and future responsibilities of KSCB. Moreover the concentration of

Table 4.2 K.H.B. : Districtwise Physical Achievement, 1956 to March 1985

Sl. No.	District	No. of houses completed
1.	Bangalore	12572
2.	Kolar	1164
3.	Tumkur	1368
4.	Bellary	1752
5.	Raichur	1510
6.	Gulbarga	4461
7.	Bidar	813
8.	Hassan	1877
9.	Chikmagalore	714
10.	Dharwar	2629
11.	Bijpur	1237
12.	Belgaum	1934
13.	S. Canara	1252
14.	Coorg	346
15.	Mysore	7803
16.	Mandya	2172
17.	Shimoga	1552
18.	Chitradurga	1785
19.	N. Canara	2063
	Cash loan	10243
	Details not available	6667
	Total	65914

Source: Karnataka Housing Board
Note : Rs. 100.46 crores invested.

293 slums in Bangalore city alone out of 965 slums in the state, indicates the worsening situation at the capital city (Tables 4.3 & 4.4).

4.4 Housing Schemes and Achievements

Several schemes and programmes of housing in the urban areas of Karnataka can be summarised as follows:

(a) Distribution of house-sites in urban areas:
Focussing on the weaker sections of urban areas, the programme is implemented in the towns, of below one lakh population. There is a provision for a subsidy ranging between 25-50 per cent of the site cost, depending upon income levels of the target groups.

(b) Bhagyamandira Housing Scheme in urban areas:
This is again a scheme for economically weaker sections, implemented by the local bodies. Financial assistance is provided for the improvement of existing stocks as well as building new units. It carries a partial subsidy and some proportion of loan amount to be added to a part of family's own investment. A total number of 21,544 houses have been constructed and 10,933 houses have been upgraded since the inception of the programme in 1979 to 1985.

Several schemes executed by the KHB in the urban areas, can be classified as follows (Table 4.5):

Table 4.3 Karnataka: Identified Slums and Population, 1985

Sl. No.	District	Total No.of Slums identified	Total No.of families	Total population	Number of declared slums
1.	Bangalore (Urban city)	165	23931	157648	120
.	(Urban town)	46	6672	43950	33
2.	Belgaum	7	1015	6688	5
3.	Bellary	54	7832	51594	40
4.	Bidar	17	2466	16242	13
5.	Bijpur	50	7252	47772	41
6.	Chikmagalore	18	2611	17198	15
7.	Chitradurga	43	6236	41084	37
8.	D. Kannada (S. Canara)	23	3336	21975	17
9.	Dharwar	68	9862	64970	56
10.	Gulbarga	27	3916	25797	14
11.	Hassan	37	5366	35351	17
12.	Kodagu (Coorg)	-	-	-	-
13.	Kolar	28	4061	26752	28
14.	Mandya	38	5511	36307	35
15.	Mysore	51	7397	48727	17
16.	Raichur	64	9282	61148	41
17.	Shimoga	36	5224	34396	25
18.	Tumkur	57	8267	54460	27
19.	N. Canara	8	1160	7645	8
20.	BDA Slums	64	9282	61148	-
21.	BCC Slums	64	9282	61148	-
	Total	965	139961	922000	589

Source: Karnataka Slum Clearance Board.

Note : Item Nos. 20 & 21 refer to Bangalore city only.

Table 4.4 Karnataka : Estimated Total Population and Slum Population of Cities, 1981-90

(Population figures in lakhs)

Sl. No.	City/Town	Total Population 1981	Slum population 1981 as identified by city		Growth rate 1971-81	Estimated population 1990	Estimated Slum population 1990
			No	%			
1.	Hubli-Dharwar	5.27	0.413	7.8	38.86	7.59	1.52
2.	Mysore	4.79	0.027	0.6	33.95	6.68	1.34
3.	Mangalore	3.06	0.035	1.1	36.80	4.35	0.87
4.	Belgaum	3.00	0.027	0.9	40.41	4.36	0.87
5.	Gulbarga	2.21	0.063	2.8	50.16	3.40	0.68
6.	Bellary	2.01	0.127	6.3	60.58	3.29	0.66
7.	Davangere	1.96	0.077	3.9	66.23	3.24	0.65
8.	Shimoga	1.52	0.111	7.3	47.56	2.30	0.46
9.	Kolar Gold Fields	1.44	0.026	1.8	21.49	1.84	0.37
10.	Raichur	1.25	0.142	11.4	56.08	1.99	0.40
11.	Hospet	1.15	0.065	5.6	22.45	1.48	0.29
12.	Tumkur	1.08	0.105	9.7	54.99	1.71	0.34
13.	Mandya	1.00	0.185	18.5	39.00	1.44	0.29
14.	Hassan	0.72	0.051	7.2	39.04	1.03	0.20
15.	Chitradurga	0.75	0.059	7.9	48.29	1.13	0.22
16.	Bagalkot	0.68	0.042	6.3	31.15	0.93	0.18
17.	Kolar	0.66	0.014	2.1	51.09	1.02	0.20
18.	Chikmagalore	0.61	0.039	6.6	45.47	0.90	0.18
19.	Harihar	0.53	0.081	15.5	54.41	0.82	0.16

Source: Karnataka Slum Clearance Board.

Table 4.5 K.H.B. : Physical and Financial Achievements, 1956-80 and 1980-85

Unit: FIN: Rs. in lakhs, PHY: Numbers

Sl. No.	Scheme	Achievement upto 1980		Achievement upto 80-85		Total	
		FIN	PHY	FIN	PHY	FIN	PHY
	HUDCO ASSISTED						
1.	Sites and Services	-	-	3	303	3	303
2.	E.W.S.	825	1457	944	8906	1769	10363
3.	L.I.G.	411	721	1064	4665	1475	5386
4.	M.I.G.	251	440	512	1860	763	2300
5.	H.I.G.	-	-	386	286	386	286
	Sub total	1487	2618	2909	16020	4396	18638
	STATE PLAN						
1.	S.I.H.S.	384	9745*	3	54	387	9799
2.	S.R.H.S.	465	3638*	60	279	525	3117
3.	R.H.S.	411	2268*	106	344	518	2612
4.	Rural Housing	345	6659*	27	727	372	7386
5.	E.W.S.	17	163*	116	1173	133	1336
6.	L.I.G.	2384	17748*	216	650	2600	18398
7.	M.I.G.	1121	4411*	233	437	1354	4848
8.	H.I.G.	47	57	-	2	47	59
9.	Shops	6	42	3	-	9	42
	Sub total	5181	44731	754	3666	5945	48397
	Grand total of KHB	6668	47349	3673	19686	10341	67035
	PEOPLE HOUSING	3611	143027	5681	209197	9292	352524

Source: Karnataka Housing Board.

* Includes Cash Loan Scheme upto March 1974.

I State Plan Assisted	II HUDCO Assisted
1. Subsidized Industrial Housing Scheme (SIHS)	1. Sites and Service Programme (SSP)
2. Subsidised Rental Housing Scheme (SRHS)	2. EWS
3. Rental Housing Schemes (RHS)	3. LIG
4. Economically weaker Sections Housing (EWS)	4. MIG
5. Low Income Group Housing (LIG)	5. HIG
6. Middle Income Group Housing (MIG)	
7. High Income Group Housing (HIG)	
8. Shops	

The financial and physical targets for the VII plan (1985-90) period shows several changes in the schemes (Table 4.6). In fact there is no greater size of investment channellised to EWS category of housing. However, more or less similar magnitude of investment earmarked for EWS, LIG, MIG and HIG perhaps should be understood as an effort to generate income and profict from MIG - II and HIG, to cross-subsidise EWS and LIG schemes. Absence of a detailed note on the guiding principles for investment in different categories make this remarks just a speculation.

Table 4.6 K.H.B. : Seventh Plan Physical and Financial Targets, 1985-1990

Unit: Fin: Rs. in lakhs, Phy: Numbers

Sl. No.	Scheme	Spill over		Proposed 1985-90		Total	
		Fin.	Phy.	Fin.	Phy.	Fin.	Phy.
I.	HUDCO ASSISTED OF KHB						
1.	Sites & Services	36	120	589	4880	625	5000
2.	E.W.S.	137	1380	2743	14620	2880	16000
3.	L.I.G.	611	2948	1789	5052	2400	8000
4.	M.I.G. - I	294	965	2206	4035	2500	5000
5.	M.I.G. - II	382	901	2993	3599	3375	4500
6.	H.I.G.	33	31	2217	1469	2250	1500
7.	Commercial complexes	-	-	100	2	100	2
8.	Wood Processing Plant	45	1	-	-	45	1
9.	Cash Loan	-	-	1825	7500	1825	7500
10.	Beedi workers	25	287	125	713	150	1000
11.	Silk Work Rearers	15	141	99	999	114	1140
12.	Fisherman	-	-	75	500	75	500
13.	Industrial employees	-	-	270	1090	270	1000
14.	Rental Housing Scheme for Government servants	-	-	3457	3500	3457	3500
15.	Rental Housing for Police Personnel.	200	480	100	168	300	648
	Total	1778	7254	18588	48037	20366	55291
II.	STATE PLAN OF KHB.						
1.	S.R.H.S.	3	22	-	-	3	22
2.	E.W.S.	33	407	747	5003	780	5410
3.	L.I.G.	33	208	377	1472	410	1680
4.	M.I.G. - I	-	-	450	1000	450	1000
5.	M.I.G. - II	70	189	610	936	680	1125
6.	H.I.G.	4	3	-	-	4	3
7.	Teachers Quarters	9	62	-	-	9	62
8.	Para Medical Quarters	1	1	-	-	1	1
99.	Quarters of KHB employees	6	35	-	-	6	35
10.	R.H.S.	2	12	105	-	107	12
	Total	161	939	2289	8411	2450	9350

Conte.....

Sl. No.	Scheme	Spill over		Proposed 1985-90		Total	
		Fin.	Phy.	Fin.	Phy.	Fin.	Phy.
III.	OTHERS:						
1.	Self-financing scheme	50	50	1491	830	1541	880
2.	Brick plant	-	-	5	1	5	1
3.	Office & stores for divisions	-	-	75	15	75	15
4.	KHB Staff Qrs.	-	-	55	150	55	150
5.	Deposit Contribution work	-	-	32	110	32	110
6.	Computer	-	-	15	-	15	-
	Sub-total III	50	50	1671	1106	1721	1156
	Total for KHB	1989	8243	22548	57554	24537	65797
IV.	HUDCO ASSISTED OF GOVERNMENT DEPARTMENT						
1.	Peoples Housing scheme	1688	42200	28000	500000	29688	542200
2.	Village level functionaries	-	-	418	2088	418	2088
	Sub total IV	1688	42200	28418	502088	30106	544288
V.	STATE PLAN OF GOVT DEPARTMENTS:						
1.	Rental housing for Govt. servants	-	-	3455	-	3455	-
2.	Rental housing for Police personnel	-	-	350	-	350	-
3.	Bank assisted PHS	-	-	432	-	432	-
4.	Peoples housing Scheme	-	-	6793	-	6793	-
5.	Village level functionaries	-	-	79	-	79	-
6.	Purchase of KHB houses	170	-	85	-	255	-
	Sub total V	170	-	11194	-	11364	-

Source: Karnataka Housing Board.

Comparatively the VII plan physical and financial statement depicts a big leap in the investment. The plan is definitely appreciable for its magnitude since KHB has planned to construct 57,554 units during 1985-90 as against a prolonged achievement of 65,914 units during 1956-85. Further taking into account the back log that may be transferred to the VII plan period, the physical target moves up to 65,797 units to be constructed with an investment of 245.37 crores. The drastic hike in the investment, though not adequate, reflects changing attitude towards housing. Perhaps the policy guidelines from the central government on account of International Year of Shelter for the Houseless, are also responsible for this change (Table 4.6).

4.5 Housing Finance

Despite the fact that there has been a impressive development of organizational set up to administer housing and urban development activities, the investment pattern is not in equal proportion. Perhaps the growing concern has resulted in the setting up of several bodies. The actual impediments in solving the problem remain the same or they are intensifying day by day due to lack of adequate investment. Though it is difficult to assess the exact magnitude of investment in housing, it is possible to

KARNATAKA

HOUSING FINANCE MARKET

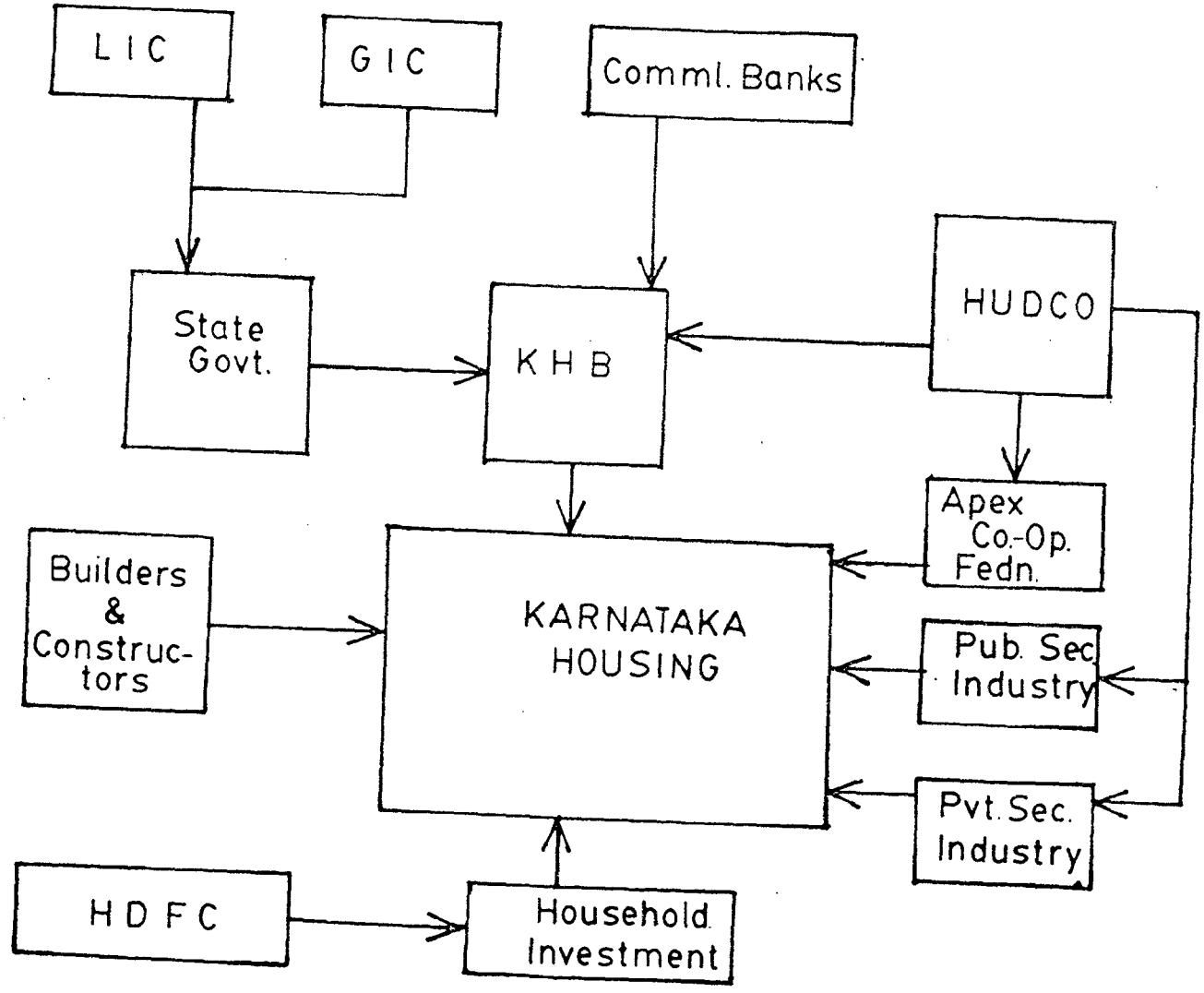


Chart - 3

roughly estimate the inflow of monetary resources from various organized sources.

The HUDCO, one of the prominant financing agencies in the country has invested a sum of Rs. 82,76 crores upto 1983 in Karnataka's housing efforts. The major borrowers of HUDCO loans in Karnataka are KHB, BDA, Improvement Trust Boards, Municipal Corporations, Public and Private enterprises and Housing Corperative Federations (Table 4.7 & 4.8). The two apex co-operative housing finance federations, have had 1060 members and working capital of Rs. 12.66 crores upto 1979. At the lower level, 1219 primary societies have put up Rs. 33.85 crores working capital upto 1978, with a total membership of 328841 households. In cooperative housing, compared to Gujarat and Maharashtra where other types of cooperatives also have succeeded, Karnataka's progress does not seem to be impressive.

The agencies like Life Insurance Corporation (LIC) and General Insurance Corporation (GIC) have channellised their investment into housing through the State Government to KHB. The Commercial Banks generally lend less amount for housing directly. They buy share/debenture securities in KHB. The Housing Development Finance Corporation (HDFC), a new venture in housing finance, has started its investment. However the area of HDFC's operation seems to be

Table 4.7 Housing Finance : HUDCO's Present Norms

Sl. No.	Category	Income limit per month	Ceiling Cost	Hudco assis-tance	Benefi-ciary contri-bution	Inte-rest rate %	Repay-ment period	Maximum plinth area Sq.mtr.	Average cost per sq.mtr.
I.	URBAN HOUSING								
1.	Core/skeletal	600	5000	5000	-	5	20	-	-
2.	Urban(A) E.W.S.	600	12000	9700	2300	7	20	35	345
3.	Urban(B) L.I.G.	600	20000	15300	2700	8	15	55	363
4.	M.I.G. I	601-1500	30000	21400	8600	10.5	12	95	315
5.	M.I.G. II	601-1500	50000	33400	16600	11.5	12	95	526
6.	H.I.G.	1501+	125000	60000	65000	12.5	10	185	675
II.	Rental Housing	-	125000	60000	65000	13.5	7	185	-

Source: Karnataka Housing Board.

Table 4.8 Housing Finance: Proposed Norms For HUDCO Assistance

Sl. No.	Category	Income limit per month	Ceiling cost	Hudco Assis-tance	% of assis-tance	Rate of interest %	Repayment period
I.	Urban Housing:						
1.	Urban(A) E.W.S.	801	20000	16000	80	7	25
2.	Urban(B) L.I.G.	801-1000	35000	28000	80	8	20
3.	M.I.G. I	1001-1500	65000	42000	70	10.5	15
4.	M.I.G. II	1501-2000	85000	59500	70	11.5	15
5.	H.I.G.	2000+	200000	140000	70	12.5	12
II.	Rental Housing	-	200000	140000	70	13.5	10

Source: Karnataka Housing Board.

confined to Bangalore Metropolis alone. The nature of HDFC's business indicate that the target group is mainly HIG or upper MIG classes. A serious lack of data regarding investment by public and private sector manufacturing industries, refrain us from making any comment on their housing activity. They too borrow from HUDCO. Another category of investors in housing is group of private builders, whose activities seem to be restricted to the state capital city. Thus it becomes very difficult to estimate the exact investment being pumped into housing sector.

4.6 A Comment

An examination of housing finance market situation in the state reveals the growing necessity for increased role of public sector agencies like HUDCO and KHB. Contrary to such an understanding, a review of plan policies and approaches to housing and urban development reveal some ambivalent stands taken by the state. Basically the ambiguity lies in understanding who should do the task, whether public sector or private sector.

To begin with for a criticism, the intervention mechanisms are quite arbitrary. Perhaps the serious concern towards housing has resulted in the establishment of a massive organization and introduction of too many programmes. The expansion in programs being not supplemented by crrres-

ponding resource allocations may result in thin distribution of resources. The VII plan, after a great deal of hesitation, seem to have decided to create a right environment for private investment. The review of plan policies and legal situation, by planning department, identify certain issues which are supposed to be hurdles to private investment. The first basic impediment in boosting private investment is the Rent Control Act which determines rent at 1961 prices. This causes pulling away of private investment in two ways. One, it has curtailed expansion of investment and has made landlords refrain from supplying stocks to the rental market. This is because of the absence of periodic revision of rent according to changing market prices. This has had an indirect effect of poor maintenance of stocks. Secondly the argument is against the rigidity of urban land (C&R) Act which brings strictures on free transfer of urban land. The other impediments are lengthy processes of land acquisition and development, slow supply of developed land by improvement boards and local bodies.

The argument in favour of changes in the Rent Control Act seem reasonable. Taking into account the inflationary tendencies in the economy, periodic revision of rent becomes imperative. However a call for changes in the urban land Act does not seem to be pragmatic. The argument that

relaxation in urban land Act would boost cooperative housing, looks rather naive as it fails to understand the behaviour of market forces in the aftermath. The problem of land speculation in urban areas is well known and probably it would accentuate the phenomenon. First of all the urban Land Act is applicable only in the five urban agglomeration in the state. Any relaxation in Urban Land Act would lead to land speculation and in turn increase the total cost of housing activity in these cities. Further, it may not have greater impact in urban areas as a whole. Finally regarding policy changes to encourage massive private investment, there should be a second thinking. The policy thrust on infrastructure development in urban areas and inviting private sector to build houses may cause adverse impact. Since private sector housing activity is bent on big business and virtual absence of cross-subsidy mechanism in their business, there arises a doubt that how far they would be able to cater to the needs of the poor and low-income groups. Ultimately it would be the private builders and constructors who would make houses and exploit market situation. The big business inclination of private sector may again leave EWS and low income groups to the care of public sector. The returns that may accrue out of public sector investment would be maximised by the private sector. In that sense, the public sector would be loosing the income and profit

that may have been channelised for cross subsidies to house EWS and LIG beneficiaries. The policy of infrastructure development and not building houses in a large scale would lead to a situation where private sector would start following public sector to reap profits. Under such circumstances intensification of investment by the public sector itself would be more appropriate. Perhaps that would help utilize the present institutional infrastructure developed for the purpose of housing and urban development. The delay in the processes of land acquisition and development by the public sector may rather be due to resource constraints. May be increased supply of monetary resources to public sector may solve this problem. Therefore there always re mains a case for greater public sector and limited private sector role in the field of housing. Probably radical changes in the rent control act may enhance the supply of housing by well to do families to the rental market. And finally it should be remembered that urban development and housing are the issues to be tackled side by side and that requires greater public sector role.

Therefore developing alternative mechanisms to invest more from state funds and by public bodies involved in housing, become necessary. And also building a performance oriented and competent public sector in housing industry also is imperative.

4.7 Summary

Although there has been great concern about the poor housing conditions, there has been no concrete policy declared to integrate housing into the mainstream of economic development. However, the recent plan documents have made an attempt to understand the problem in a proper perspective. The obvious competition for resources by other multiplier sectors have caused greater resource constratins for housing and urban development. A major policy decision in the state planning cell is to create an appropriate environment for private investment in housing. Despite several constraints, the development of a suitable institutional infrastructure for housing and urban development administration is appreciable. However, the housing activity in the state is rather slow and not commensurate with the magnitude of existing shortages. This mainly due to resource constraints.

The present housing finance market situation and the rate of housing activity in the state reveals the growing necessity for increased role of public sector. However, contrary to this requirement, there has been a serious policy divergence in the state for creating right environment for massive private investment. The policy divergence in favour of private sector is argued to be due to the inability of the state to solve the problem single handed.

Though the changes in the Rent control Act are preferrable, abolition of urban land act is not. In general policy changes in favour of private sector itself requires second thinking. For, when the state takes the responsibility of providing urban infrastructure, the state will be making massive investment. It is this investment that would be taken advantage by private enterprise for profit making. However, the private business by dominant builders and constructors in the market will not have a cross-subsiding principle for the benefit of EWS and the other low income groups. Therefore, there are possibilities of these vulnerable sections of population becoming neglected by private business. Then public sector is called upon for housing the poor and low income groups. Therefore, greater role by public sector in housing would generate incomes to public sector that may be cross-subsidised to house the said sections of population. Therefore, there is always a case for greater public sector and limited private sector role in urban development and housing in the form of developing urban infrastructure and providing housing to all income groups.

C H A P T E R V

SUMMARY AND CONCLUSIONS

5.1 Introduction

The main objective of this concluding chapter is to amalgamate the findings of the study and predict the trends of urbanization and housing in Karnataka. After the summarization of findings, a brief outline of future urbanization and housing has been presented. Assuming that the trends of urbanization, household growth rate and house construction activity would continue unaltered for a period of two decades, an attemt has been made to examine the said phenomena. This is followed by an analysis of policy implications for housing and urban development in the present context. The study ends with a note on some key areas for further research.

5.2 Summary of Findings*

The investigation into the process or urbanization and conditions of urban housing lead to the following findings:

1. The cities of Karnataka are more densely populated than the national averages for cities in 1971. A quantum

---

* See Appendix VIII for significant correlation values of selected variables.

jumpin the density average for the cities of Karnataka suggest more intensive use of urban land in 1971 over 1961. The same situation of intensive land use has been observed in the case of class II, III, V and VI towns. This is due to lesser share of urban land available to these size class of towns.

2. Half of the urban population being concentrated in cities, a common pattern of declining population in the small towns has been observed. In addition there has been a significant decline in the number of small towns.

3. The growth in the number of cities of Karnataka is faster after sixties. This is due to faster transformation of class II cities into class I. The growth of class II towns is rather slow due to slow transformation of class III towns.

4. Karnataka's fairly high degree of urbanization in the country is no void of serious inter-district variations. The disparities have continued to exist, as the core urban areas are experiencing intensified growth.

5. Bangalore being the highly urbanized district, it has continued to influence the accentuation of disparities in the urbanization of other districts. Obviously the high degree of urbanization in Bangalore district is due to the

growth of Bangalore metropolis and its primacy in the state.

6. The district of Dharwar in the northern maidan region is the second urbanized area and this is due to the primacy of Hubli-Dharwar city and also growth of agricultural towns in the lower class category. Thus, the second place of Mysore has been taken over by Dharwar.

7. The districts like Coorg and Chikmagalore show lesser degree of urbanization due to the existence of hills and huge plantations. The districts of Bidar, Gulbarga and Raichur are less urbanized due to relative backwardness in infrastructural facilities and their existence as pheripheral areas of core urbanized areas in 1961.

8. Comparatively a vigorous urban growth has triggered in Dharwar and Bellary districts. However, the functional classification of towns indicate that the degree of urbanisation here is influenced by the growth of agricultural settlements into urban areas.

9. Though there has been greater degree of urbanization so far in the southern maidan, the prospects for the intensification of the process are better now in the northern maidan. The possibility of developing urban centres of greater influence in the districts of Gulbarga

Bijpur, Bellary and Raichur is greater.

10. A reduction in the relative 'isolation' of the coastal regions from the main land in the recent times, has lead to an improvement in the degree of urbanization in the coastal areas.

11. An examination of urban concentration in the districts, indicate absolute influence of prominant urban centres on the degree of urbanization. Generally, the whole process is affected by the growth of one or two urban centres of a district.

12. There are several urban centres like Hubli-Dharwar, Mangalore, Bellary etc., which may become places of concentration within a short time. However intensification of urban growth at Gadag-Betageri in Dharwar district, Udipi-Kundapur in South Canara and Hospet in Bellary district may help in the reduction of urban concentration in their respective districts.

13. Regarding migration patterns, it is important to take note of growing concentration of migrants in a few highly urbanized districts. The magnitude of migrant population absorbed by Bangalore and other districts indicates the great attraction towards Bangalore. Apart from Bangalore, the districts of Dharwar, Mysore and Shimoga in 1961; Dharwar and Mysore in 1971 are the principal areas of

attraction for migrants. A continuity in the patterns of migration to the same areas in 1971 over 1961 suggest a serious drawback of concentrating economic activities and developmental process in a few districts. Further examination in those districts reveals that only the district headquarters are receiving centres for migrants.

14. Excluding Bangalore, Bellary, Kolar and Shimoga all other districts have drawn large sizes of intra-state migrants in 1961. Reception of large sizes of inter-state migrants by the above said districts is indicative of growth potential and also state boundaries reorganization during fifties. The same pattern of migration has continued in Bangalore and Bellary in 1971 where large inter-state migrants have moved to. Rest of the districts mainly have intra-state migrants. Again most of the cities excluding Bangalore, Bellary and Kolar Gold Fields, have received intra-state migrants.

15. An examination of the size of migrants moving into a particular city of a district reveal that large number of them are moving into single urban centres in the district. The cities of Bangalore, Mysore and Mangalore have received major size of total migrants in their respective districts. The cities of Hubli-Dharwar, Belgaum and Gulbarga are the ones receiving more than half of migrants of their respective districts.

16. Workforce employment in Karnataka reveals that urbanization is influenced by industrialization closely followed by tertiarization. Although the share of agricultural towns is small (20.4%) they signify the influence of agricultural base on urbanization. This phenomenon is found largely among the class IV, V and VI towns.

17. There have been no significant number of towns where economies are dominated by trade and transport. Perhaps this should be a general phenomenon since trade and transport grow as subsidiaries to industry and service.

18. Most of the cities have a high service economies. Perhaps this is due to the existence of district administrative bodies in these cities. Contrarily, majority of the class II towns are high industry economies.

19. A share of more than 60 per cent of the towns being dominated by single sector employment, they signify serious lack of functional diversification at the local level. This kind of structural imbalances in workforce employment (Non-diversification) is less among the class I and II towns where as it is serious among the class III and IV towns. Districtwise, there are only a few of them having substantial number of highly diversified and moderately diversified towns. The districts of Chikmagalore, Hassan, N. Canara, Shimoga and Tumkur have had significant number of diversified towns.

20. A significant deviation from industrialization-urbanization linkage is seen in the case of two highly urbanized districts i.e. Dharwar and Bellary. Because more than half of the towns in these districts are of agricultural base. The same phenomenon can be observed in the cases of Raichur and Chitradurga districts too.

21. Some of the less urbanized districts like Coorg, Hassan and N. Canara tend to show industrialization - urbanization linkage. The districts of Coorg and Hassan having significant share of plantation workers and North Canara having forest based workers, it should not be surprising to observe such a linkage. This is also indicative that industrialization may influence urbanization but the degree of urbanization may vary depending upon the magnitude of industrial activity undertaken.

22. During all the three decades (1961-81) the housing stock utilization is dominated by residential purposes. Contrary to the assumption that highly urbanized districts would have lesser share of stocks for residential purpose, all the districts show more or less similar proportion of stocks being used for residential purposes. The share of commercial stocks is similar. This is indicative of a common phenomenon that whatever the magnitude of production, distribution and business activities conducted by different

districts at different degrees of urbanization, the scale or proportion of commercial activities would be same. A similar pattern of stock utilization i.e. large share of residential use, followed by commercial and social purposes, is observed among the cities too.

23. There seem to be moderate relationship between urbanization and proportion of households living in rented houses in 1961. But it weakens in 1971 due to a significant increase in the share of rented households in almost all districts. This suggest a faster rate of urban household growth, low key construction in 1971. In most of the cities, more than half of the households live in rented houses. The cities of Bangalore Davangere, Gulbarga and Mysore have alarming situation of rented house living. Inversely it is also alarming situation of huge housing speculation by small section of owners.

24. Large number of urban families live in one and two room accommodation, which suggests that there is greater lack of privacy. Majority of the districts have more than 2 persons per room. This reflects a clear shortage of rooms and consequent lower degree of privacy available for better urban living. A uniform situation in the state suggest that lack of privacy is common in highly urbanized districts as well as less urbanized districts.

25. The average number of persons per household being 5 or 6 and since large number of households do live in one or two room houses, the degree of privacy has been quite low to the majority of the urban population. The same tendency of greater lack of privacy exists in cities since generally more than two persons per room and 5-6 persons per household have lived in. A large number of families living in one or two room accommodation in cities also suggest large section of population facing the problem of privacy.

26. In terms of quality of housing (wall and roof materials) the districts of Bangalore, Belgaum, Coorg, Gulbarga, Kolar, Mysore and Shimoga are better placed with significant proportions of permanent stocks. The districts of Bellary, Bidar, Bijpur, Dharwar, Raichur and Chitradurga have had significant proportions of non-usable stocks.

27. The availability of public utilities in the urban areas is grossly inadequate. Prevalence of a uniform situation of public utilities indicates lack of urban finance. Mainly, the short supply of protected water and availability of toilet facilities call for serious concer.

28. Though the proportion of housing shortages to the total households in a district do not exhibit any relation between high urbanization, the phenomenon of shortage

concentration has a definite support to the idea that high urbanization areas have greater shortages. In other words, the proportion of a district shortage to the state aggregate shortage and degree of urbanization have a close relation. Therefore, the shortage phenomenon in the districts of Bangalore, Bellary, Dharwar, etc. call for serious concern. A review of urban and housing policy of the state reveals the following findings.

29. Basically there has been no consistent and fulfledged urban and the housing policy declared. Though there has been greater concern towards housing and the various urban problems, the investment has always remained non-commensurate with the magnitude of problem. Thus the whole plan period is marked by serious resource constraints for housing and urban development.

30. The organizational development in the state to deal with the areas of housing and urban development is just complete. And now depends upon how this infrastructure is made use of. However, after a prolonged development of institutional infrastructure for housing and urban development, serious thought is given to policy changes to bring private sector investment in a large scale. Thus, there has been a major policy divergence from public sector to private sector thrust.

31. The process of identifying different target groups and formulation of suitable scheme for each group has been appropriate. But a close comparison of various programmes with the magnitude of investment made, reveals that resources are thinly distributed among the large group of beneficiaries in public housing. However, the Seventh Plan physical and financial targets reflect a new trend in State investment in housing.

32. Instead of developing alternative mechanisms for a big boost in public sector role, the call for private sector investment gives a feeling that the mechanisms of cross-subsidies and overall improvement of housing situation have been ignored. The policy divergence in the investment, to make room for greater private sector participation reflects, the inability to understand the role of public sector in the flourishing business of housing.

33. The call for appropriate changes in the Rent Control Act appears to be more important than changes in the Urban Land Act. The provisions for periodic revision of rent according to the current market prices may enhance the supply of housing to rental market. Changes in Urban Land Act, may lead to land speculation and hike in the land values.

5.3 Future of Urbanization and Housing

The factors of population growth, urbanization, household growth, house construction activity are the ones, going to determine the future patterns of urban living. A scientific preparation of perspective planning requires a logical speculation regarding the future. Perhaps it helps in the estimation of demand for resources and monetary investment required. The precautions become implicit in equipping the urban economy, market, residential planning and the development of legal and institutional infrastructure to meet the growing urban problems effectively. Though it is not possible to predict the exact behaviour and impact of the above said variables in different districts in the future, generalized urban situation of the present,warns for a clarity and appropriate vision of the future urban crisis. Therefore, this is an attempt towards estimating the magnitude of future population, households and residential housing stocks, usable residential stocks and the possible shortages. With this it would also be explicit of the demand for urban infrastructure which may include water supply, sanitation, sewerage and drainage, roads, electricity, health, education, housing and so on. The estimations/ predictions are based on mathematical projection of the curve movement of following variables:

X_1 Total population

X_2 Urban population

X_3 Urban households

X_4 Urban residential stocks

Since the estimation has been prepared at the district level, the projections are made using mathematical model.[1] The following standard assumptions made in the projection of these variables to keep the inference under control.

1. The average trend rate ($\bar{r}$) of the variables X_1 to X_4, observed during the recent past (1961-81) would continue unaltered upto the year 2001 A.D.

2. The projections are for constant urban, rural and total area of each district. Therefore, the possible changes in the population of urban and rural areas due to other reasons like declassification, and emergence of new towns have not been taken into account.

Further, it should be borne in mind that the projections being purely mathematical, the trend rate of those variables may be more accurate upto 1991 and slightly less accurate after 1991 onwards. However, proper precautions in the inference and their utilization would suffice in understanding the future urban scene presented (Tables 5.1 to 5.6).

---

1. See 1.5e for detailed methodology

Table 5.1 Karnataka : Projected Total Population, 1986-2001, A.D.

(in lakhs)

Sl. No.	Districts	$\bar{r}$ Between 1961-81	1981	1986	1991	1996	2001
1.	Bangalore	.03404	49.47	58.65	69.54	82.44	97.74
2.	Belgaum	.02035	29.80	32.99	36.53	40.44	44.77
3.	Bellary	.02434	14.89	16.81	18.99	21.45	24.33
4.	Bidar	.02032	9.95	11.02	12.20	13.50	14.94
5.	Bijpur	.01846	24.01	26.34	28.88	31.68	34.74
6.	Chikmagalore	.02115	9.11	10.13	11.26	12.52	13.91
7.	Chitradurga	.02426	17.77	20.06	22.65	25.57	28.87
8.	Coorg	.01791	4.61	5.05	5.52	6.04	6.60
9.	Dharwar	.02061	29.45	32.65	36.19	40.12	44.48
10.	Gulbarga	.01983	20.80	22.97	25.36	28.01	30.93
11.	Hassan	.02076	13.57	15.05	16.70	18.52	20.55
12.	Kolar	.01950	19.05	21.00	23.15	25.52	28.14
13.	Mandya	.02278	14.18	15.89	17.80	19.95	22.36
14.	Mysore	.02201	25.95	28.97	32.35	36.11	40.31
15.	N. Canara	.02206	10.72	11.97	13.36	14.92	16.66
16.	Raichur	.02413	17.83	20.12	22.70	25.61	28.90
17.	Shimoga	.02438	16.56	18.71	21.14	23.88	26.97
18.	S. Canara	.02093	23.76	26.38	29.30	32.53	36.12
19.	Tumkur	.01845	19.77	21.69	23.78	26.08	28.60
20.	State		371.25	416.45	467.40	524.89	589.92

Note: Figures in the tables 5.1 to 5.6 have been rounded off to Lakhs or thousands after deriving actual figures. The figures of the State are summation of district figures. Since the state growth rates would provide dissimilar figures to the summated figures of the districts.

Table 5.2 Karnataka : Projected Urban Population, 1986-2001 A.D.

(in lakhs)

Sl. No.	Districts	$\bar{r}$ Between 1961-81	1981	1986	1991	1996	2001
1.	Bangalore	.04277	31.93	39.54	48.97	60.65	75.11
2.	Belgaum	.03152	6.71	7.86	9.20	10.77	12.61
3.	Bellary	.04342	4.92	6.11	7.59	9.43	11.72
4.	Bidar	.03907	1.77	2.15	2.62	3.18	3.87
5.	Bijpur	.03066	5.78	6.74	7.86	9.16	10.68
6.	Chikmagalore	.02902	1.59	1.84	2.13	2.47	2.85
7.	Chitradurga	.03935	4.17	5.08	6.19	7.53	9.17
8.	Coorg	.02590	0.71	0.81	0.92	1.05	1.20
9.	Dharwar	.03413	10.38	12.31	14.60	17.32	20.54
10.	Gulbarga	.03712	4.75	5.72	6.89	8.30	9.99
11.	Hassan	.03064	1.98	2.31	2.69	3.14	3.66
12.	Kolar	.01888	4.27	4.70	5.16	5.67	6.24
13.	Mandya	.03939	2.20	2.67	3.26	3.97	4.83
14.	Mysore	.02696	7.11	8.14	9.31	10.66	12.20
15.	N. Canara	.04052	2.71	3.32	4.07	4.99	6.11
16.	Raichur	.03804	3.43	4.15	5.02	6.08	7.35
17.	Shimoga	.02464	4.26	4.82	5.45	6.16	6.97
18.	S. Canara	.03649	5.81	6.98	8.37	10.05	12.06
19.	Tumkur	.03362	2.72	3.22	3.81	4.50	5.33
20.	State		107.2	128.47	154.11	185.08	222.49

Table 5.3 Karnataka: Projected Number of Urban Households, 1986-2001 A.D.

(in lakhs)

Sl. No.	Districts	$\bar{r}$ Between 1961-81	1981	1986	1991	1996	2001
1.	Bangalore	.04015	5.68	6.95	8.49	10.38	12.69
2.	Belgaum	.02793	1.15	1.33	1.52	1.75	2.02
3.	Bellary	.03793	0.83	1.00	1.21	1.47	1.77
4.	Bidar	.03619	0.28	0.33	0.40	0.48	0.57
5.	Bijpur	.02465	0.96	1.08	1.22	1.38	1.57
6.	Chikmagalore	.02793	0.28	0.32	0.37	0.43	0.49
7.	Chitradurga	.03572	0.68	0.81	0.97	1.66	1.39
8.	Coorg	.02806	0.14	0.16	0.19	0.22	0.25
9.	Dharwar	.02912	1.70	1.97	2.28	2.64	3.05
10.	Gulbarga	.03137	0.79	0.93	1.08	1.27	1.48
11.	Hassan	.02906	0.34	0.39	0.46	0.53	0.61
12.	Kolar	.01277	0.70	0.74	0.79	0.85	0.90
13.	Mandya	.03620	0.39	0.47	0.56	0.67	0.81
14.	Mysore	.02381	1.22	1.37	1.55	1.75	1.97
15.	N. Canara	.02972	0.49	0.57	0.66	0.77	0.89
16.	Raichur	.03014	0.60	0.70	0.81	0.95	1.10
17.	Shimoga	.01717	0.73	0.80	0.87	0.95	1.03
18.	S. Cnara	.03545	0.93	1.11	1.33	1.59	1.89
19.	Tumkur	.03344	0.48	0.57	0.68	0.80	0.95
20.	State		18.37	21.60	25.44	30.04	35.43

Table 5.4 Karnataka : Projected Size of Residential Housing Stocks, 1986-2001 A.D.

(in lakhs)

Sl. No.	Districts	$\bar{r}$ Between 1961-81	1981	1986	1991	1996	2001
1.	Bangalore	.04234	5.61	6.93	8.57	10.59	13.09
2.	Belgaum	.02673	1.02	1.17	1.34	1.53	1.75
3.	Bellary	.03768	0.82	0.99	1.20	1.45	1.75
4.	Bidar	.04271	0.27	0.34	0.42	0.52	0.65
5.	Bijpur	.02650	0.94	1.07	1.23	1.40	1.60
6.	Chikmagalore	.02830	0.27	0.32	0.37	0.42	0.49
7.	Chitradurga	.03673	0.68	0.81	0.98	1.18	1.41
8.	Coorg	.03166	0.14	0.16	0.19	0.22	0.26
9.	Dharwar	.02881	1.63	1.89	2.18	2.52	2.91
10.	Gulbarga	.03271	0.78	0.92	1.08	1.28	1.51
11.	Hassan	.03015	0.34	0.39	0.46	0.53	0.62
12.	Kolar	.01391	0.69	0.74	0.79	0.85	0.91
13.	Mandya	.03828	0.38	0.47	0.56	0.68	0.83
14.	Mysore	.02702	1.20	1.37	1.57	1.80	2.06
15.	N. Canara	.03355	0.47	0.55	0.65	0.77	0.91
16.	Raichur	.03239	0.59	0.70	0.82	0.97	1.14
17.	Shimoga	.01843	0.73	0.80	0.87	0.96	1.05
18.	S. Canara	.03466	0.90	1.07	1.27	1.51	1.80
19.	Tumkur	.03406	0.48	0.57	0.67	0.80	0.95
20.	State		17.94	21.26	25.22	29.98	35.69

Table 5.5 Karnataka : Projected Size of Usable Residential Housing Stocks, 1986-2001 A.D.

(in lakhs)

Sl. No.	Districts	K 1971	1986	1991	1996	2001
1.	Bangalore	90.91	6.30	7.79	9.63	11.90
2.	Belgaum	83.25	0.97	1.11	1.27	1.45
3.	Bellary	20.57	0.20	0.24	0.29	0.36
4.	Bidar	64.82	0.22	0.27	0.34	0.42
5.	Bijpur	18.10	0.19	0.22	0.25	0.29
6.	Chikmagalore	91.45	0.29	0.34	0.39	0.45
7.	Chitradurga	75.39	0.61	0.74	0.89	1.06
8.	Coorg	90.77	0.15	0.17	0.20	0.24
9.	Dharwar	58.20	1.10	1.27	1.46	1.69
10.	Gulbarga	66.56	0.61	0.72	0.85	1.00
11.	Hassan	93.59	0.37	0.43	0.50	0.58
12.	Kolar	76.36	0.56	0.60	0.65	0.69
13.	Mandya	74.20	0.34	0.42	0.51	0.61
14.	Mysore	93.40	1.28	1.47	1.68	1.93
15.	N. Canara	83.06	0.46	0.54	0.64	0.76
16.	Raichur	18.02	0.13	0.14	0.17	0.20
17.	Shimoga	88.93	0.71	0.77	0.85	0.93
18.	S. Canara	84.64	0.90	1.07	1.28	1.52
19.	Tumkur	78.73	0.45	0.53	0.63	0.75
20.	State		15.84	18.84	22.48	26.83

Note: K 1971 in the first column refers to the percentage of usable residential stocks assumed to be constant upto the year 2001.A.D.

Table 5.6 Karnataka : Projected Size of Residential Housing Shortage, 1986-2001 AD

(in thousands)

Sl. No.	Districts	1971	1986	1991	1996	2001
1.	Bangalore	88	64	70	75	79
2.	Belgaum	23	35	41	48	56
3.	Bellary	48	80	97	117	141
4.	Bidar	10	11	12	14	15
5.	Bijpur	67	89	100	113	128
6.	Chikmagalore	4	3	3	4	4
7.	Chitradurga	13	20	23	27	32
8.	Coorg	2	1	1	1	1
9.	Dharwar	60	87	101	117	136
10.	Gulbarga	21	31	36	41	48
11.	Hassan	6	2	2	3	3
12.	Kolar	19	18	19	19	21
13.	Mandya	13	13	14	16	20
14.	Mysore	25	9	8	6	4
15.	N. Canara	8	11	12	13	13
16.	Raichur	34	57	67	78	90
17.	Shimoga	10	9	10	10	10
18.	S. Canara	12	21	26	31	37
19.	Tumkur	9	12	15	17	20
20	State	472	573	657	750	858

5.4 Policy Implications

1. The serious inter district variations and high concentration of urban population in cities call for immediate steps towards reducing them. In this process they are supposed to reduce the disparities in urbanization and also development.

2. Within each district, the urban population is again contributed by one or two urban centres causing intra-district disparities in the distribution of urban population. This indicates to what extent the economic activities are getting concentrated.

3. Further the migration patterns do support the above view of concentration of economic activities, since their movement is found to be more towards highly urbanized areas. This calls for steps towards dispersed pattern of employment generation. The districts of Bellary, Gulbarga, Chitradurga and Raichur provide better scope for dispersal since they have more number of agricutural towns.

4. The functional classification of towns indicates significant number of towns with agricultural base. Since many of them are found to be in the small town category, they provide a better chance for industrial growth. However, an observation made earlier that agricultural productivity

has declined and investment in agriculture has not resulted in the augmentation of income from this sector, call for a systematic assessment of these towns to ensure a strong support to industry.

5. Similarly a serious attention is required for making proper adjustments in the structural imbalances of the local urban economies. The functional diversification of towns can be improved by further identifying the resource base. All the districts excepting Chikmagalore, Hassan North Canara, Shimoga and Tumkur, require immeidate polciy measures for the diversification of their towns.

6. The tenure status of households reveal that there are large number of rented households in urban areas. Assuming that rented houses are generally small, the availability of privacy and comforts would be too low. However, the existence of huge number of families in rented houses indicates that those many families are not capable of investing huge initial capital for an ownership house but they can afford paying rent. Therefore, innovative package programs could be developed to tap their rent paying capacity for greater savings and investment to make their own homes.

7. Cost of producing raw materials being also a function of local resources, scientific efforts are required for developing techniques of low cost wall and roof materials on a mass scale under different regional conditions.

8. The gross inadequacies observed in the supply of public utilities need serious measures to protect the urban living environment. However before that, measures are required for enhancing revenues to the local bodies.

9. A relationship between the concentration of urban population and concentration of housing shortages, shows that the investment patterns should be greater in the districts of high urbanization. Because of the danger of faster deterioration in the living environment of those districts.

10. The absence of a clear and fulfledged urban and housing policy requires immediate changes in the policy and decision making processes and techniques to eliminate the situation of resource constraints.

11. The policy divergence in favour of private sector, after a prolonged development of huge institutional infrastructure needs a second thinking. Because increased role of private sector may over take public sector role. Then probably the expenditure on maintaining so huge institutional infrastructure will not be able to realise its productivity.

12. Further, the state thrust on urban infrastructure development and greater private sector participation, would help the realization of profits by private sector from the investment made by state. In that case the public sector

would be loosing its profits that could have accrued from the values of developed land for residential use.

13. The private business being inclined for big business probably, will not be able to take care of EWS and LIG households. They would become the responsibility of public sector again.

14. Then public sector may find it difficult and costly to house LIG and EWS households. It may be costly due to two reasons. First, EWS and LIG housing cost reduction could have been possible through a cross-subsidy mechanism. Second, since the private market would be in operation on a big scale, it may be difficult to obtain land in the core and suburbs for them, when public sector wants to house them. Therefore, basically the problem lies in the development of a competent and credible public sector in the housing market.

15. Therefore the obvious result under the greater private sector housing business situation, would be throwing the EWS and LIGs to the peripheral and creation of difficulties in the public transportation/work place distance and reduction in real incomes.

16. The argument in favour of changes for relaxation in Urban Land Act do not seem necessary, as long as public sector has power to acquire and resale land for housing.

Since the said law is applicable in only five agglomeration, it may not have greater impact on urban areas as a whole. Instead it may create speculation of land in thos cities.

17. Perhaps for the purpose of solving several problems of urban infrastructure, strengthening the local bodies, financial position is more important. The question of Octroi which has been abolished, should be debated now either to reimpose or develop new tax mechanisms for urban local finance. Therefore there need not bee an allegation against local bodies that they are slow in the acquisition, development and resale of land for housing, when they do not have adequate revenues. Monopoly of public sector over urban land and delay in distribution need not be alleged as a public sector speculation but should be viewed as a part of resource constraints for land development and infrastructure supply.

18. Generation of employment and economic development depends upon a logical sequence of policies implemented. Without developing necessary infrastructure in other urban areas within the state for planned urban development, the speculation that industrial investment is moving out of the state may not be justified. The failure of meagre incentives for dispersal could be best illustrated by the development of Hosur's industrial development in Tamilnadu but close to Bangalore. The utilization of infrastructure at Bangalore

by industries at Hosur is maximum. The shuttling of Senior Executives between Bangalore and Hosur should not be uncommon.

19. Perhaps after the functional classification of all the existing towns, further investigation into the resource base of each town would provide options for the selection of towns for the IDSMT Schemes. Efforts should be made to make use of existing infrastructure in the districts of Shimoga and Mandya (where composite index scores are high) and also in the districts of Belgaum, Chitradurga, Kolar, Mysore and North Canara (where composite index shows satisfactory level of infrastructure development). Simultaneous efforts should be made to slowly develop infrastructure in other districts which are found to be backward in infrastructure by developing strong model cities and then by linking them to a network of intra-regional urban market system.

5.5 Further Research

Since there has already been a considerable size of academic research carried out in the field of urbanization, further research in urban studies in Karnataka seems to need a focus on problem solving/policy making studies. Broadly the area of further investigation can be termed

as urban infrastructure and possible avenues for its integrated development. First of all, the task of strengthening urban economies at the local level does not seem to have been solved. The functionally classified towns reflect their present state of workforce employment. Their further improvement depends upon the resource base what they have been endowed with. Therefore, further investigation into the profiles of individual town's resource base could help in the estimation of industrial investment. Probably that would make an independent work. Further, within this area, after the acquisition of data on workforce participation in 1981, the functional classification would help in understanding the shifts in the towns workforce employment. Keeping in view the future of housing and urban development, a separate research work can be undertaken to examine the shifts in the functions of towns during 1961-81.

Supply of public utilities in the urban areas has become a complex task. Of course revenues of local bodies is the main problem but it also depends upon the availability of natural resource like water etc. Therefore, taking independent physio-agronomic regions into account, an exploration of natural resources and urban finance would provide knowledge about public utility supply. More of interest in urban local finance could also provide an independent

area of research. Especially in Karnataka now, abolition of Octroi, a tax that was major chunk of revenue to the local body and an issue for serious debate now, has been without any alternative mechanisms for generating income. Further explorations in the field of local finance and taxation may be able to develop several alternative mechanisms of income generation. It may develop a policy for local bodies, 'live on their own income rather than state grants.

In the field of housing, perhaps more important today is managing finance market. Effective management of finance supply and recovery is more important in the process of recycling the monetary resources. Understanding the finance market and tapping household savings for housing, would make up a separate research issue.

The future of urban development and housing depends largely upon increased state investment and participation. Perhaps contradictory policies, implementation and situations like ban on industrial development and non-development of infrastructure at other places; implementation of IDSMT in a town where not even the functional specialization is not identified; abolition of Octroi without alternative sources of income to local bodies; allegation against local bodies and public sector bodies in the task of land acquisition and resale, under resources constraints etc. projects a totally ambiguous urban and housing policy.

APPENDIX I

Urban Income

Non-availability of data on urban per capita incomes at the district level, pressurises for the utilization of existing district income data to make rough estimates of urban income. The per capita income being one of the major determinants of household demand for housing an attempt has been made here compute urban income using the following technique:

$$Y_i^t = \frac{(S_y + T_y)}{U_i}$$

Where Y_i is district urban per capita income at t year; S_y is district income from secondary sector; T_y is district income from tertiary sector; U is urban population of 'i' district.

Assumption:

The economies of urban areas generate income mainly in secondary and tertiary sectors. Despite this specialization, there would be a tendency of overlapping in income generation. This is due to the phenomenon that urban areas may generate some portion of income in primary sector, as rural areas do in secondary and tertiary sectors. Therefore, addition of secondary and tertiary sectoral incomes should suffice to provide a rough estimate of urban incomes at the district level.

APPENDIX I

Karnataka: District Per capita, Sectoral and Urban Per capita Incomes, 1970-71

Sl. No.	Districts	Per capita Y Rs.	Y from Secondary Sector Rs.'000	Y from Tertiary Sector, Rs. '000	Y from Primary Sector Rs.'000	$S_y + T_y$	Urban population	Urban percapita Y Rs.
1.	Bangalore	574	610948	826631	474105	1437579	1865754	770
2.	Belgaum	487	133225	262512	760490	395737	497793	794
3.	Bellary	679	47918	134730	564919	182648	304772	599
4.	Bidar	412	24894	63160	246193	88054	119131	739
5.	Bijpur	415	118836	154085	545194	272921	421175	647
6.	Chikmagalore	732	18159	103607	408834	121766	115078	1058
7.	Chitradurga	524	67327	160209	501498	227536	282952	804
8.	Coorg	1218	13733	52881	392429	66614	58691	1134
9.	Dharwar	475	109413	315701	676380	425114	737973	576
10.	Gulbarga	544	86663	167231	692411	253894	309276	820
11.	Hassan	495	27380	111274	406907	138654	149411	928
12.	Kolar	417	28327	134566	565246	162893	313115	520
13.	Mandya	544	38998	122316	453551	161314	158788	1015
14.	Mysore	593	91231	286297	842703	377528	529118	713
15.	N. Canara	472	56194	96012	258120	152206	150497	1011
16.	Raichur	605	45523	133700	661986	179223	217471	824
17.	Shimoga	676	86013	177948	598360	263961	307313	858
18.	S. Canara	611	209900	420422	537762	630322	393178	1603
19.	Tumkur	399	51828	110518	473929	162346	190607	851
20.	State	540	1866500	3834800	9961017	5701300	7122093	800

Note: Figures in column No.3 refer to income at current prices.
Figures in column No.7 are special computations to derive urban income in column No.9

Source of figures in column Nos. 3-6: India Census, 1971, Mysore: General Report, Part I-A, vol.2, pp. 1135-1137

APPENDIX II

Karnataka: Net State Domestic Product at Factor Cost, Income From Real Estate and Percapita Income, 1970-71 to 1983-84.

(Rs. in crores. At current prices

Sl. No.	Year	Net State Domestic Product	Y from Real Estate, ownership of dwellings & Business services	Percapita Y in Rs.
1.	1970-71	1858.11	35.09	641.21*
2.	1974-75	3177.71	50.34	1000.36
3.	1979-80	4821.71	97.26	1345.21
4.	1980-81	5341.54	102.30	1453.47
5.	1981-82	6195.39	116.87	1643.87
6.	1982-83	6489.07	132.98	1679.07
7.	1983-84	7745.75	150.28	1956.89
		(Rs. in crores, at 1970-71 prices)		
1.	1970-71	1858.11	35.09	641.21
2.	1974-75	2032.96	40.41	639.99
3.	1979-80	2612.28	49.11	728.80
4.	1980-81	2525.18	51.11	687.12
5.	1981-82	2703.45	53.22	717.33
6.	1982-83	2692.14	55.47	696.60
7.	1983-84	2828.72	57.83	714.65

Source: Bureau of Economics & Statistics, Bangalore.

* Figures in this column do not tally with Appendix I, due to difference in methodology of accounting.

APPENDIX III

A Glossary of Functionally Classified Towns in Karnataka, 1971

CODE SHEET

Col. 1 — Name of District/Town

Col. 2 — Town code

Col. 3 — Size Class of Town

- Class I - 1
- Class II - 2
- Class III - 3
- Class IV - 4
- Vlass V - 5
- Class VI - 6

Col. 4 — Type of Town i.e.

- Agricultural Town - Ag
- Non-agricultural Town = 0

Col. 5 — Functional Specialization

LI, MTT, HS*	- Triangle	1
LTT, MI, HS	-	2
LTT, MS, HI	-	3
LS, MTT, HI	-	4
LS, MI, HTT	-	5
LI, MS, HTT	-	6

* See Section 1.5c for the full form of these abbreviations.

Col. 6 Functional Diversification

Highly Diversified - 1st circle	- 1
Moderately diversified - 2nd circle	- 2
Predominant Function Accentuated - 3rd circle	- 3
Predominant Function Highly Accentuated - out of 3rd circle	- 4

APPENDIX III

G L O S S A R Y

District/Town	Code	Class	Agri./ Non-Agri.	Triangle No.	Circle No.
1	2	3	4	5	6
BANGALORE DISTRICT					
Anekal	1	4	0	2	4
Bangalore U.A.	2	1	0	2	2
Channapatna	3	3	0	2	3
Devanahally	4	4	Ag	-	-
Doddaballapur	5	3	0	2	4
Hoskote	6	4	0	2	2
Kanakpura	7	3	0	2	3
Magadi	8	4	0	2	2
Nelamangala	9	5	0	2	1
Ramnagaram	10	3	0	2	4
Sarjapura	11	6	Ag	-	-
Tyamagondlu	12	5	0	2	2
Vijayapura	13	5	0	3	3
Yelahanka	14	4	0	3	4
BELGAUM DISTRICT					
Athani	15	3	0	3	2
Baklhongal	16	4	0	3	2
Belgaum	17	1	0	2	1
Chikodi	18	4	0	3	1
Gokak	19	3	0	3	3
Gokak Falls	20	5	0	2	4
Hukeri	21	4	0	2	1
Khanapura	22	4	0	3	1
Konnur	23	4	0	2	4
Kudchi	24	4	Ag	-	-
Londa	25	6	0	3	4
Mudalagi	26	4	Ag	-	-
Nippani	27	3	0	2	4
Raibag	28	4	Ag	-	-
Ramdurga	29	4	0	2	4
Sadalaga	30	4	Ag	-	-
Sankeswar	31	4	0	2	2
Saudatti-Yellamma	3 2	4	Ag	Rs	-
BELLARY DISTRICT					
Amaravati	33	4	0	1	4
Bellary city	34	1	0	2	1
Hadagali	35	4	Ag	-	-
Hampi	36	6	Ag	-	-
Harapanahally	37	4	0	2	2

1	2	3	4	5	6
Hospet	38	2	0	2	3
Kamalapur	39	4	Ag	-	-
Kampli	40	4	Ag	-	-
Kottur	41	4	Ag	-	-
Sirguppa	42	4	Ag	-	-
Tekkalakota	43	4	Ag	-	-
BIDAR DISTRICT					
Basavakalyana	44	3	0	2	4
Bhalki	45	4	0	4	2
Bidar	46	2	0	4	3
Chitaguppa	47	4	0	3	3
Humnabad	48	4	0	3	3
BIJPUR DISTRICT					
Badami	49	4	0	3	2
Bagalkot	50	2	0	3	2
Basavana-Bagewadi	51	4	Ag	-	-
Bijpur city	52	1	0	3	3
Guledgudda	53	3	0	2	4
Hungunda	54	4	Ag	-	-
Ilkal	55	3	0	2	4
Indi	56	4	0	4	2
Jamakhandi	57	3	0	2	2
Kerur	58	4	0	2	4
Mahalingapur	59	4	0	2	4
Muddebihal	60	4	0	3	3
Mudhol	61	4	0	2	3
Rabkavi-Banhatti	62	3	0	2	4
Sindhgi	63	4	Ag	-	-
Talikote	64	4	Ag	-	-
Terdal	65	4	Ag	-	-
CHIKMAGALORE DISTRICT					
Ajjampura	66	5	0	2	2
Birur	67	4	0	2	3
Chikmagalore	68	3	0	3	1
Kadur	69	4	0	2	3
Koppa	70	6	0	3	3
Mudigere	71	6	0	4	2
Narsimharajpur	72	5	0	4	1
Sringeri	73	6	0	4	1
Tarikere	74	3	0	3	2

(Contd....)

1	2	3	4	5	6
CHITRADURGA DISTRICT					
Challakere	75	4	0	2	3
Chitradurga	76	2	0	4	1
Davangere city	77	1	0	2	3
Harihar	78	3	0	2	4
Hiriyur	79	4	0	3	2
Holalkere	80	5	0	5	1
Hosadurga	81	5	0	4	2
Jagalore	82	5	Ag	-	-
Mayakonda	83	6	Ag	-	-
Molakalmur	84	5	0	2	3
Nayaknahatti	85	6	Ag	-	-
Turuvanur	86	5	Ag	-	-
COORG DISTRICT					
Gonikoppal	87	6	0	3	4
Hebbale	88	6	Ag	-	-
Kodlipet	89	6	0	3	4
Kushalnagar	90	5	0	3	2
Mercara	91	4	0	4	2
Ponnampet	92	6	0	2	2
Sanivarsanthe	93	6	Ag	-	-
Somvarpet	94	5	0	2	4
Suntikoppa	95	6	0	3	2
Uluguli	96	6	0	2	4
Virajpet	97	5	0	3	3
DHARWAR DISTRICT					
Annigeri	98	4	0	3	4
Alnavar	99	4	Ag	-	-
Byadagi	100	4	0	3	4
Gadag-Betagere	101	3	0	2	3
Gajendragarh	102	4	0	2	4
Honagal	103	4	Ag	-	-
Haveri	104	3	0	3	3
Hubli-Dharwar	105	1	0	3	2
Kundgol	106	4	Ag	-	-
Laxmeswar	107	3	Ag	-	-
Naragunda	108	4	0	2	4
Naregal	109	4	Ag	-	-
Navalgunda	110	4	Ag	-	-
Ranibennur	111	3	0	2	4
Ron	112	4	Ag	-	-
Savanur	113	4	Ag	-	-
Shiggon	114	4	Ag	-	-
Shirahatty	115	5	Ag	-	-

(Contd....)

1	2	3	4	5	6
GULBARGA DISTRICT					
Aland	116	3	0	2	4
Chincholi	117	5	0	4	2
Chitapur	118	4	0	2	2
Gulbarga city	119	1	0	4	2
Gurmatkal	120	4	0	2	4
Sedum	121	4	0	3	2
Shahbad	122	3	0	2	4
Shahbad ACC	123	5	0	1	4
Shahpur	124	4	0	3	3
Shorapur	125	3	0	2	3
Wadi ACC	126	6	0	1	4
Yadgir	127	3	0	2	2
HASSAN DISTRICT					
Alur	128	6	0	4	1
Arkalgud	129	5	0	4	2
Arsikere	130	3	0	4	4
Banavar	131	6	0	4	1
Belur	132	4	0	2	1
Channaraipatna	133	4	0	3	1
Hassan	134	2	0	4	2
Holenarsipur	135	4	0	5	1
Konanur	136	5	0	4	2
Sakaleshpur	137	4	0	4	3
Sravanabelagola	138	6	Ag	-	-
KOLAR DISTRICT					
Bagepalli	139	5	0	6	3
Bangarpet	140	4	0	4	3
Chikballapur	141	3	0	3	1
Chintamani	142	3	0	3	3
Gouribidanur	143	4	0	3	2
Gudibanda	144	5	Ag	-	-
Kolar	145	3	0	3	1
Kolar Gold Fields	146	1	0	2	4
Malur	147	4	0	2	3
Manchenahally	148	6	Ag	-	-
Mulabagal	149	4	0	3	2
Sidlagatta	150	4	0	2	4
Srinivasapur	151	4	0	4	2
MANDYA DISTRICT					
Belakwadi	152	5	Ag	-	-
Bellur	153	6	0	4	3
Krishnarajpet	154	5	Ag	-	-
Maddur	155	4	0	3	3

(Contd....)

1	2	3	4	5	6
Malvalli	156	4	0	3	2
Mandya	157	2	0	3	2
Melkote	158	6	0	1	2
Nagamangala	159	5	0	4	2
Pandavapura	160	4	0	6	1
Srirangapatna	161	4	0	4	1
MYSORE DISTRICT					
Bannur	162	4	Ag	-	-
Chamarajnagar	163	3	0	2	2
Gundlupet	164	4	0	2	2
Heggadedevanakote	165	6	Ag	-	-
Hunsur	166	4	0	3	3
Kollegala	167	3	0	2	3
Krishnarajnagar	168	4	0	3	2
Mysore city	169	1	0	3	1
Nanjangud	170	3	0	2	2
Periyapatna	171	5	Ag	-	-
Sargur	172	5	0	2	3
T. Narsipur	173	5	0	3	1
Yelandur	174	5	0	2	2
NORTH CANARA DISTRICT					
Bhatkal	175	4	0	4	4
Dandeli Notified Area	176	3	0	2	4
Haliyal	177	4	0	3	2
Honavar	178	4	0	3	2
Karwar	179	3	0	1	1
Kumta	180	4	0	3	1
Sirsi	181	3	0	3	3
Yellapur	182	5	0	3	2
RAICHUR DISTRICT					
Deodurga	183	5	0	3	2
Gangavati	184	3	0	3	4
Koppal	185	3	0	2	1
Kushtagi	186	5	Ag	-	-
Lingsugur	187	4	Ag	-	-
Manvi	188	4	Ag	-	-
Mudgal	189	4	Ag	-	-
Munirabad Project Area	190	5	0	6	4
Raichur	191	2	0	3	3
Sindhnur	192	4	0	4	3

1	2	3	4	5	6
SHIMOGA DISTRICT					
Bhadravati U.A.	193	1	0	2	4
Channagiri	194	5	0	5	1
Honnali	195	5	0	3	2
Hosanagar	196	6	0	4	2
Kumsi	197	6	Ag	-	-
Nyamati	198	5	0	3	3
Sagar	199	3	0	3	3
Shikaripur	200	4	0	3	3
Shimoga city	201	1	0	2	2
Shiralkoppa	202	5	0	3	3
Sorab	203	5	0	3	1
Thirthahally	204	4	0	3	1
SOUTH CANARA DISTRICT					
Coondapur	205	3	0	2	3
Gangolli	206	5	0	2	3
Karkal	207	4	0	2	1
Malpe	208	4	0	2	4
Mangalore U.A.	209	1	0	2	3
Mulki	210	4	0	3	4
Pranthya	211	5	0	2	3
Puttur	212	4	0	3	1
Shirva	213	4	Ag	-	-
Shivalli	214	4	0	1	2
Someswar	215	5	0	2	4
Tonse West	216	5	0	2	4
Udipi	217	3	0	4	1
Udyavar	218	4	0	2	4
TUMKUR DISTRICT					
Ammasandra	219	6	0	1	4
C.N. Hally	220	4	0	2	3
Gubbi	221	5	0	3	1
Koratagere	222	5	0	4	1
Kunigal	223	4	0	2	2
Madhugiri	224	4	0	4	2
Pavagada	225	5	0	3	3
Sira	226	4	0	2	4
Tiptur	227	3	0	3	3
Tumkur	228	2	0	3	2
Turvekere	229	5	0	1	1
Y.N. Hoskote	230	5	0	2	4

APPENDIX IV

ESTIMATE OF HOUSING SHORTAGE IN INDIA

Housing Shortage represents excess of household over the available housing stock, which, taken as an acceptable standard for habitation is a crucial element in determining the magnitude of the housing shortage. In other words, the higher the housing norms, the larger would be the housing deficit.

The 1971 Census data revealed that 70% of the rural residential dwellings have used mud, grass, leaves, reed, bamboo, unburnt bricks or wood as their wall material and 40% of the houses have used grass, leaves, thatch, wood, mud, unburnt bricks and bambook for roof material. It is not a practical proposition to treat such housing stock as wholly non-useable and ignore them completely as being below the minimal acceptable standard of housing for human habitation.

Minimum acceptable housing standards, for a country like India to be realistic should reflect not only the socio-economic conditions, but also the climatic, geographic and cultural differences that characterise its different regions and classes of people. In the ultimate analysis any estimate of housing shortage depends essentially on a minimum acceptable standard of housing which a country might adopt for itself. Keeping these and other relevant considerations in view, National Buildings Organisation of this Ministry has

been estimating the National Housing Shortage from time to time.

USEABLE HOUSING STOCK

Available data on dwelling characteristics determine not only the degree of detail in which estimates of housing deficit could be worked out but also the realiability of such estimates. The Census of India had been collecting (from the 1961 Census) data on housing during the house-listing operation of the population census. Such data provide information on the predominant materials of wall and roof of the residential census houses. National Buildings Organization has utilised this census data and classified the census houses into Pucca, Semi-Pucca and Kutcha structures according to the definitions evolved by a committee consisting among others, the representatives of N.B.C.; Registrar General of India and the National Sample Survey Organisation. The structural characteristics of each of the four categories of dwelling have been defined as:-

A. PUCCA HOUSING UNITS: is the one of which the predominant materials of wall and roof are as given below:-

Wall: Burnt Bricks, G-I Sheets or other metal sheets, stone cement concrete etc.

Roof: Tiles, slate, corrugated Iron, Zinc or other metal sheets, or asbestos cement sheets, burnt bricks, limestone (R.B.C./R.C.C. etc.)

B KUTCHA: a) Serviceable Kutcha b) Unserviceable Kutcha

a) Serviceable Kutcha: includes all residential housing units which may have mud walls and thatch roof.

b) Unserviceable Kutcha: includes houses which have thatch

walls and thatch roofs, i.e. wall made of grass leaves, reeds etc. and roof of similar materials.

C. SEMI-PUCCA: houses are those which do not fall within either of the above A & B categories. Generally such houses will have either the material of wall or roof of a Pucca unit. For instance, a house with a mud wall and roof of tiles will be treated as semi-pucca.

CRITERIA TO ESTIMATE THE HOUSING SHORTAGE:

The following criteria have been accepted by the Planning Commission and the Ministry of Works & Housing in order to assess the housing shortage in the country, they are:-

i) Every household, urban or rural should have a housing unit for itself.

ii) In urban areas, the housing unit may either be pucca or Semi-Pucca.

iii) In rural areas, the housing unit may either be Pucca, Semi-Pucca or serviceable Kutcha.

ESTIMATES OF HOUSING SHORTAGE:

Based on the above criteria the National Buildings Organisation has estimated the housing shortage in 1971 at 14.5 million units (11.6 in rural and 2.9 in urban areas). With the available information of the 1981 Census, the housing shortage in 1981 is estimated at 21.1 million dwelling units (16.1 in rural and 5.0 in urban areas).

Source: National Building Organization, New Delhi.

APPENDIX V

Estimates/Projections of Housing Shortages.

Particulars	1981			1982			1983			1984 (In million)		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
1	2	3	4	5	6	7	8	9	10	11	12	13
1. Number of Households	93.5	29.1	122.6	96.0	29.9	125.9	98.4	30.7	129.1	100.7	31.5	132.2
2. Housing stock												
a. Pucca	16.4	17.7	34.1	16.8	18.1	34.9	17.2	18.5	35.7	17.5	18.9	36.4
b. Semi-Pucca	32.5	6.4	38.9	33.3	6.6	39.9	34.0	6.7	40.7	34.7	6.9	41.6
c. Serviceable-Kutcha.	28.5	0.5	29.0	29.1	0.5	29.6	29.8	0.5	30.3	30.4	0.5	30.9
d. Unserviceable-Kutcha	9.8	2.6	12.4	10.0	2.6	12.6	10.2	2.7	12.9	10.6	2.8	13.4
Total Housing-stock.	87.2	27.2	114.4	89.2	27.8	117.0	91.2	28.4	119.6	93.2	29.1	122.3
3. Useable housing Stock*	77.4	24.1	101.5	79.2	24.7	103.9	81.0	25.2	106.2	82.6	25.8	108.4
4. Housing shortage (households-useable housing stock)	16.1	5.0	21.1	16.8	5.2	22.0	17.4	5.5	22.9	18.1	5.7	23.8

Housing stock compr-ises, residences, shop-cum-residence & workshop-cum-residence including household Industry.

Housing Units: Pucca:- A unit with predominant material of wall & roof as follows:-
Wall :- Burnt Bricks, GI sheets or other metal sheets, stone, cement, concrete etc.

Roof :- Tiles, slates, corrugated or Zinc or metal sheets ACC, RBC, RCC, Bricks, lime, stone etc.

Serviceable Kutcha:- A unit with mud walls and thatched roof.

Unserviceable Kutcha:- A unit with thatched walls and thatched roof.

Semi Pucca:- All units which donot fall in any of the above category.

* Figures have been estimated/projected by applying decen--tial growth-rate for households, housing stock etc.

APPENDIX V

Estimates/Projections of housing stock and housing shortage.

Particulaors	1985			1990			1995			2001		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
1. Number of Households	103.3	32.2	135.5	115.7	36.0	151.7	127.9 ~~130.9~~	39.9 ~~40.7~~	167.8 ~~171.6~~	142.8	44.5	187.3
2. Housing-stock.								23.1	45.1			
a. Pucca	17.9	19.3	37.2	19.8	21.4	41.2	21.7	~~26.4~~	~~48.1~~	23.9	25.9	49.8
b. Semi-Pucca	35.5	7.0	42.5	39.2	7.7	46.9	43.0	9.5	52.5	47.4	9.3	56.7
c. Serviceable-Kutcha	31.1	0.5	31.6	34.4	0.5	34.9	37.6	0.6	38.2	41.7	0.7	42.4
d. Unservicebale Kutcha	10.7	2.9	13.6	11.9	3.2	15.1	13.0	3.4	16.4	14.3	3.8	18.1
Total housing stock. (a+b+c+d)	94.2	29.7	124.9	105.3	32.8	139.1	115.3	35.9	151.2	127.3	39.7	167.0
3. Useable housing stock*	84.5	26.3	110.8	93.4	29.1	122.5	102.3	31.9	134.2	113.0	35.2	148.2
4. Housing shortage.(1 - 3)	18.8	5.9	24.7	22.3	6.9	29.2	25.6 ~~28.6~~	8.0	33.6 ~~37.4~~	29.8	9.3	39.1

* In rural areas useable housing stock comprises of Pucca, semi-pucca and Serviceable Kutcha & in urban areas, it comprises of pucca & semi-pucca.

xx Estimates/Projections based on the assumption that every household whether in the Urban areas or rural areas should have a housing unit to itself.

xxx These estimates/Projections have been arrivated on the basis of 1971 Census data & partialy available 1981 Census data. These may under-go a change/revision, once the break-up of the housing stock data by materials of wall and roof is available seperately from 1981-Census data, In the present case 1971 percentage break-up of housing stock has been used for arriving at estimates/Projections.

Source: National Building Organization, New Delhi.

APPENDIX VI

Karnataka: Correlation Matrix of Selected Indicators (Urban Areas, 1971)

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}
X_1	1.000	.955	.523	.072	.400	-.136	.955	.526	.673	.270	.580	.130	.210	-.235	.550
X_2		1.000	.533	.080	.430	-.184	.993	.560	.659	.156	.632	.218	.226	-.224	.453
X_3			1.000	-.415	.098	.045	.557	.480	.638	-.340	.476	-.030	.257	-.342	.335
X_4				1.000	.091	-.109	.065	.001	-.138	.532	.077	.214	-.195	-.109	-.070
X_5					1.000	.345	.446	.130	.229	-.068	.294	.157	.565	-.243	-.022
X_6						1.000	-.089	-.002	.107	-.244	-.262	-.108	.526	-.459	-.231
X_7							1.000	.571	.679	.130	.596	.197	.262	-.275	.439
X_8								1.000	.365	-.174	.758	.299	.446	.098	-.132
X_9									1.000	-.156	.614	.125	.550	-.024	.080
X_{10}										1.000	-.123	-.109	-.389	-.105	.307
X_{11}											1.000	.433	.373	.114	.039
X_{12}												1.000	.141	.224	-.161
X_{13}													1.000	-.044	-.427
X_{14}														1.000	-.214
X_{15}															1.000
X_{16}															
X_{17}															
X_{18}															
X_{19}															
X_{20}															
X_{21}															
X_{22}															
X_{23}															
X_{24}															
X_{25}															
X_{26}															
X_{27}															
X_{28}															

(Contd.....)

Note: Level of significance = .456 at 5% level.
= .575 at 1% level.

X_{16}	X_{17}	X_{18}	X_{19}	X_{20}	X_{21}	X_{22}	X_{23}	X_{24}	X_{25}	X_{26}	X_{27}	X_{28}	
.078	.491	.530	.423	.290	-.033	.807	.016	.253	-.037	.064	.463	-.025	X_1
-.045	.509	.556	.403	.275	-.083	.801	.054	.198	-.018	.095	.386	-.067	X_2
-.166	.958	.953	.492	.021	-.443	.158	-.115	.031	.111	-.070	.436	-298	X_3
.347	-.406	-.406	-.335	.236	.292	.275	-.040	.312	.015	.134	-.197	-.408	X_4
-.033	.163	.209	.720	-.299	-.422	.128	.144	-.496	-.253	.239	-.043	-.052	X_5
-.328	.130	.110	.516	-.571	-.426	-.310	-.121	-.561	-.424	-.126	.194	.131	X_6
-.076	.543	.587	.440	.244	-.112	.787	.039	.177	-.033	.088	.411	-.060	X_7
.039	.426	.409	.374	.069	-.273	.341	-.287	.110	.374	-.304	.378	.129	X_8
.025	.622	.620	.539	.042	-.467	.284	-.185	.054	.198	-.220	.432	.222	X_9
.213	-.323	-.340	-.252	.437	.617	.532	-.243	.504	-.306	-.096	.085	-.220	X_{10}
.103	.372	.375	.449	-.043	-.247	.407	-.229	-.049	.210	-.189	.242	.045	X_{11}
-.168	-.109	-.130	.118	-.033	.038	.232	-.306	-.171	-.047	-.503	-.129	-.550	X_{12}
-.091	.184	.191	.784	-.759	-.783	-.186	-.118	-.682	.020	-.190	.216	.238	X_{13}
.175	-.383	-.395	-.259	-.021	.189	-.113	-.162	-.012	.325	-.180	-.264	-.011	X_{14}
.032	.356	.394	-.068	.495	.333	.561	.213	.325	-.285	.232	.334	.032	X_{15}
1.000	-.246	-.229	-.287	.197	.193	.021	.184	.244	.336	.297	-.080	-.076	X_{16}
	1.000	.992	.498	.107	-.429	.138	-.119	.062	-.001	-.010	.377	.296	X_{17}
		1.000	.499	.109	-.435	.168	-.005	.046	.003	.087	.392	.318	X_{18}
			1.000	-.532	-.661	.031	-.211	-.593	-.256	-.163	.330	.279	X_{19}
				1.000	.599	.493	.091	.355	.149	.152	.022	-.203	X_{20}
					1.000	.489	-.023	.566	-.135	.026	-.121	-.401	X_{21}
						1.000	-.042	.454	-.129	.040	.307	-.288	X_{22}
							1.000	-.028	.186	.831	.009	.213	X_{23}
								1.000	.336	.065	-.026	-.202	X_{24}
									1.000	.177	-.096	.137	X_{25}
										1.000	-.059	.236	X_{26}
											1.000	.648	X_{27}
												1.000	X_{28}

APPENDIX VII

Karnataka : Correlation Matrix of Selected Variables (Cities, 1971)

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}
X_1	1.000	-.241	-.029	-.175	.120	-.149	.431	-.495	-.355	.632	-.203	-.414	-.199	.746	-.273
X_2		1.000	-.573	.273	.217	.369	-.526	.548	.552	-.442	-.537	-.359	.089	-.466	.325
X_3			1.000	.256	-.452	.285	.530	-.154	-.145	.050	.206	.478	.345	.047	-.381
X_4				1.000	.194	.846	.436	-.023	.678	.080	-.233	.243	.943	-.120	-.669
X_5					1.000	.020	.004	.170	.276	.044	-.212	.045	.092	.024	-.216
X_6						1.000	.127	.230	.721	-.268	-.609	.139	.668	-.416	-.383
X_7							1.000	-.714	-.076	.777	.374	.326	.601	.719	-.373
X_8								1.000	.120	-.920	-.343	.181	-.166	-.855	.428
X_9									1.000	-.231	-.560	-.031	.481	-.413	-.087
X_{10}										1.000	.376	-.199	.239	.964	-.555
X_{111}											1.000	.461	.094	.377	-.235
X_{12}												1.000	.392	-.249	-.486
X_{13}													1.000	.038	-.787
X_{14}														1.000	-.434
X_{15}															1.000
X_{16}															
X_{17}															
X_{18}															

(Contd...)

Note: Level of Significance = .666 at 5% level
= .800 at 1% level

X_{16}	X_{17}	X_{18}	
-.163	.009	-.376	X_1
-.109	-.432	-.269	X_2
.182	.357	.169	X_3
-.046	.253	.297	X_4
-.378	-.386	-.247	X_5
.300	.306	.042	X_6
-.111	.441	.440	X_7
.090	-.348	-.361	X_8
.225	.050	.110	X_9
-.363	.174	.250	X_{10}
-.216	.177	.681	X_{11}
.377	.520	.621	X_{12}
-.103	.351	.517	X_{13}
-.393	.061	.090	X_{14}
.043	-.533	-.499	X_{15}
1.000	.732	.361	X_{16}
	1.000	.727	X_{17}
		1.000	X_{18}

APPENDIX VIII

CORRELATION TABLES

X_1 Percentage of urban population to the total population.*

X_2 Percentage of district urban population to the state urban population (concentration of urban population).*

X_3 Density of urban population per km^2.

X_4 Annual growth rate of urban population: 1961-71.

X_5 Number of towns per thousand km^2.

X_6 Percentage of total migrants to the total urban population in a district.*

X_7 Percentage of total migrants in a district to the total migrants in state (concentration of migrants).*

X_8 Percentage of workers in Secondary Sector to the total workers.*

X_9 Percentage of workers in the non-household industry to the total workers.*

X_{10} Percentage of agricultural towns to the total number of towns in the district.

X_{11} Percentage of high service (medium industry, low trade and transport) towns to the total number of towns in the district.

X_{12} Percentage of Predominant Function Highly Accentuated towns to the total number of towns in the district.

X_{13} Percentage of literates and educateds to the total urban population.

X_{14} Urban sex ratio : Number of females per 1000 males.

X_{15} Percentage of purely residential stocks to the total stocks (excluding shop + residence and workshops + residence).

X_{16} Percentage of commercial stocks to the total stocks.

X_{17} Urban density of occupied residential houses per km^2.*

X_{18} Urban density of households per km^2.*

X_{19} Percentage of rented households to the total households.*

X_{20} Percentage of households in 1 and 2 room houses to the total households.

X_{21} Percentage of housing shortage to the total households.*

X_{22} Percentage of district housing shortage to the state total housing shortage (concentration of shortage).*

X_{23} Percentage of direct shortage to the district total households.

X_{24} Average number of persons per room.

X_{25} Average number of persons per household.

X_{26} Difference in the growth rate of households over the growth rate of occupied residential houses i.e. growth rate of households minus growth rate of occupied residential houses.

X_{27} Per capita water supply in gallons.

X_{28} Availability of toilets per 100 urbanites.

The following are the selected indicators for the correlation matrix of the city level,1971.

X_1 Decadal growth rate of city population.*

X_2 Percentage of workers in Secondary Sector to the total workers.

X_3 Percentage of workers in service sector to the total workers.

X_4 Percentage of city population to the state urban population i.e. size of the city.*

$$\text{City size} = \frac{\text{City Population}}{\text{State Urban Population}} \times 100$$

X_5 Percentage of migrants in the city to its total population.

X_6 Percentage of migrants in the city to the total migrants in the district.*

X_7 Percentage of residential stocks to the total stocks.*

X_8 Percentage of commercial stocks to the total stocks.*

X_9 Percentage of rented households to the total households.*

X_{10} Percentage of households in 1 & 2 rooms to the total households.*

X_{11} Percentage of total housing shortage to the total households.*

X_{12} Percentage of direct shortages to the total households.

X_{13} Percentage of total shortages in a city to the total shortages of all cities.*

X_{14} Average number of persons per room.*

X_{15} Average number of persons per household.*

X_{16} Number of water borne toilets per 1000 city population.*

X_{17} Per capita water supply in gallons.*

X_{18} Difference in the growth rate of households over the growth rate of occupied residential houses.*

APPENDIX VIII

Karnataka: Correlation between Selected Indicators at Different Levels of Significance (Urban Areas, 1971)

Variable	At 1% Level (+)	r	(-)	r	At 5% Level (+)	r	(-)	r
X_1	X_2	.955	-	-	X_3	.523	-	-
	X_7	.955	-	-	X_8	.526	-	-
	X_9	.673	-	-	X_{15}	.550	-	-
	X_{11}	.580	-	-	X_{17}	.491	-	-
	X_{22}	.807	-	-	X_{18}	.530	-	-
X_2	X_1	.955	-	-	X_3	.533	-	-
	X_7	.993	-	-	X_8	.560	-	-
	X_9	.659	-	-	X_{17}	.509	-	-
	X_{11}	.632	-	-	X_{18}	.556	-	-
	X_{22}	.801	-	-	-	-	-	-
X_6	-	-	-	-	X_{13}	.526	X_{20}	.571
	-	-	-	-	X_{19}	.516	X_{24}	.561
X_7	X_1	.955	-	-	X_3	.557	-	-
	X_2	.993	-	-	X_8	.571	-	-
	X_9	.673	-	-	X_{17}	.543	-	-
	X_{11}	.596	-	-	-	-	-	-
	X_{18}	.587	-	-	-	-	-	-
	X_{22}	.787	-	-	-	-	-	-
X_8	X_9	.865	-	-	X_1	.526	-	-
	X_{11}	.758	-	-	X_2	.560	-	-
	-	-	-	-	X_3	.480	-	-
	-	-	-	-	X_7	.571	-	-
X_9	X_1	.673	-	-	X_{13}	.550	X_{21}	.467
	X_2	.659	-	-	X_{19}	.539	-	-
	X_3	.638	-	-	-	-	-	-
	X_7	.679	-	-	-	-	-	-
	X_8	.365	-	-	-	-	-	-
	X_{11}	.614	-	-	-	-	-	-
	X_{17}	.622	-	-	-	-	-	-
	X_{18}	.620	-	-	-	-	-	-

(Contd...)

APPENDIX VI II

Variable	At 1% Level (+)	r	At 1% Level (-)	r	At 5% Level (+)	r	At 5% Level (-)	r
X_{17}	X_3	.958	-	-	X_1	.491	-	-
	X_9	.622	-	-	X_2	.509	-	-
	X_{18}	.992	-	-	X_7	.543	-	-
	-	-	-	-	X_{19}	.498	-	-
X_{18}	X_3	.953	-	-	X_1	.530	-	-
	X_7	.587	-	-	X_2	.556	-	-
	X_9	.620	-	-	X_{19}	.499	-	-
	X_{17}	.992	-	-	-	-	-	-
X19	X_5	.720	X_{21}	.661	X_3	.492	X_{20}	.532
	X_{13}	.784	X_{24}	.593	X_6	.516	-	-
	-	-	-	-	X_9	.539	-	-
	-	-	-	-	X_{17}	.498	-	-
	-	-	-	-	X_{18}	.499	-	-
X_{21}	X_{10}	.617	X_{13}	.783	X_{22}	.489	X_9	.467
	X_{20}	.599	X_{19}	.661	X_{24}	.566	-	-
X_{22}	X_1	.807	-	-	X_{10}	.532	-	-
	X_2	.801	-	-	X_{15}	.516	-	-
	X_7	.787	-	-	X_{20}	.493	-	-
	-	-	-	-	X_{21}	.489	-	-

Note: The signs (+) and (-) denote positive and negative correlation respectively.

Level of significance : 0.575 at 1% level and 0.466 at 5% level.

APPENDIX VIII

Karnataka : Correlation between Selected Indicators at Different Levels of Significance (Cities, 1971)

Variable		r	Variable		r
X_1	X_{14}	.746	X_{11}	X_{18}	.681
X_4	X_6	.846*	X_{13}	X_4	.943*
	X_9	.678		X_6	.668
	X_{13}	.943*		X_{15}	-.786
	X_{15}	-.669			
X_6	X_4	.846*	X_{14}	X_1	.746
	X_9	.721		X_7	.710
	X_{13}	.668		X_8	-.855*
				X_{10}	.964*
X_7	X_8	-.714			
	X_{10}	.777	X_{15}	X_4	-.669
	X_{14}	.710		X_7	-.873*
	X_{15}	-.373		X_{13}	-.787
X_8	X_7	-.714	X_{16}	X_{17}	.732
	X_{10}	-.920*			
	X_{14}	-.355*	X_{17}	X_{16}	.732
				X_{18}	.724
X_9	X_4	.678			
	X_6	.721	X_{18}	X_{11}	.681
				X_{17}	.727
X_{10}	X_7	.777			
	X_8	-.920*			
	X_{14}	.964*			

Note: Level of significance = 0.300 at 1% level* and 0.666 at 5% level.

BIBLIOGRAPHY

BOOKS

1. Abrams,C., Man's Struggle for Shelter in an Urbanizing World, Cambridge: MIT Press, 1964.

2. Aziz Abdul, Urban Poor and Urban Informal Sector, New Delhi, Ashish Pub., 1984.

3. Bose, A., India's Urbanization: 1901-2001, New Delhi: Tata McGraw Hill Pub., 1980.

4. Cole, J.P. and King, C.A.M., Quantitative Geography: Techniques and Theories in Geography, London: John Wiley & Sons, 1969.

5. Deshpande, C.D. and Bhat, L.S., On India's Urbanization, in Jones, R. (ed), Essays on World Urbanization, London: George Philip Pub: 1975.

6. Goldstein, S. and Sly, D.F. (eds.), Measurement of Urbanization and Projection of Urban Population, Dolphain, Belgium: Ordina Editions, 1975.

7. _____ (eds.), Patterns of Urbanization: Comparative Country Studies, vol.2, Dolphain, Belgium: Ordina Editions, 1977.

8. Grimes, O.F., Housing for Low-Income Urban Families: Economic and Policy in the Developing World, Baltimore: J. Hopkins Univ. Press, 1976.

9. Hanumappa, H.G., Urbanization Trends in India: Case Study of a Medium Town, New Delhi: Ashish Pub., 1981.

10. Jones, R. (ed.), Essays on World Urbanization, London: George Philip Pub., 1975.

11. Learmonth, A.T.A., Mysore State: Regional Synthesis, Calcutta, 1960.

12. Learmonth, A.T.A. and Bhat L.S., (eds.), Mysore State: An Atlas of Resources, vol.1, New York: Asia Pub. House, 1961.

13. Mills, E.S., Urban Economics, Glenview, Illionois: Scott Foresman & Co., 1972.

14. Mitra, A., A Functional Classification of India's Towns, Delhi: Institute of Economic Growth, 1973.

15. Mitra, A., and others, Shifts in the Functions of Cities and Towns of India, 1961-1971, New Delhi: Abhinav Pub., 1981.

16. National Council of Applied Economic Research, Urban Income and Saving, New Delhi: N.C.E.A.R., 1962.

17. N.C.E.A.R., Techno-Economic Survey of Mysore, New Delhi: N.C.E.A.R., 1965.

18. National Institute of Urban Affairs, A Study of Karnataka's Urbanization, New Delhi, N.I.U.A., 1985 (Unpublished Project Report of N.I.U.A.).

19. Needleman, L., Economics of Housing, London: Staples Press, 1965.

20. Prakasarao, V.L.S. and Bhat, L.S., Planning Regions in the Mysore State: Need for Readjustment of District Boundaries, Calcutta: I.S.I., 1960.

21. Prakasarao, V.L.S., Towns of Mysore State, Bombay: Asia Pub., 1964.

22. Prakasarao, VLS and Tewari, V.K., Structure of an Indian Metropolis: A Study of Bangalore, New Delhi: Allied Pub; 1979.

23. Prakasarao, V.L.S., Urbanization in India: Spatial Dimensions, New Delhi: Concept Pub., 1983.

24. Puttaswamaiah, K., Economic Development of Karnataka: A Treatise in Continuity and Change, vol. 1 and 2, New Delhi: Oxford & IBH, 1980.

25. Ramachandrarao, Mysore: Resources and Economy, Report of a high powered Committee Constituted by Government of Karnataka, 1962.

26. Rao, H., Regional Disparities and Development in India, New Delhi: Ashish Pub., 1984

27. Saini, N.S. and Mahavir, (eds.), Urban Development Planning Strategies and Techniques, New Delhi: School of Planning and Arch., 1985.

28. Scholar, Problems and Consequences of Urbanization, in Jones, R., 1975.

29. Smailes, A.E., Definition and Measurement of Urbanization, in Jones, R., 1975.

30. Venkatesan, Vijayalaxmi., Uniqueness and Generalities of City-Hinterland Relationship, (unpublished M.Phil. dissertation, Centre for the Study of Regional Development, Jawaharlal Nehru University, 1978).

31. Yeh, S.H.K. and Laquian, A.A., (eds.), Housing Asia's Millions: Problems, Policies and Prospects for Low Cost Housing in South East Asia, Ottawa: I.D.R.C., 1979.

32. Yeung, Y.M., A Place to Live: More Effective Low Cost Housing in Asia, Ottawa: I.D.R.C., 1983.

ARTICLES

33. D'Souza, J.B., "Searching for an Urban Policy", Economic and Political Weekly, vol. 13, No.48, 1978.

34. Harris, Nigel, "Settlements, People and Jobs", Economic and Political Weekly, vol. II, No. 31-33, 1976.

35. Indian Express (New Delhi), Special Supplement on Housing and Real Estates, 24 June 1986.

36. Kundu, A., "Theories of City Size Distribution and Indian Urban Structure: A Reappraisal", Economic and Political Weekly, vol. 18, No. 31, 1983.

37. Nelson, H.J., "A Service Classification of American Cities", Economic Geography, vol. 31, 1955.

38. Patel, S.B., "A Research Programme for Urban Housing", Economic and Political Weekly, vol. 8, No.4, 1973.

39. Suri, K.B., "Towns: Size, Economic Structure and Growth", Economic and Political Weekly, vol.3, No. , 1968.

40. Srivastava, S.C., "Growth of Urbanization: Some Issues", Economic Times (New Delhi) 16 and 17 April 1986.

41. Thimmaiah, G., "Octroi Abolition, Lessons From Karnataka", Economic Times, (New Delhi), 17 May 1986.

GOVERNMENT PUBLICATIONS

42. Karnataka Government, Annual Reports of the Department of Housing and Urban Development, 1982-85, Bangalore.

43. Karnataka Government, Karnataka State Gazetter, Part I & II, Bangalore.

44. Karnataka Government, Background Papers for the Economic & Planning Council, (on Urbanization), vol. 3, Bangalore, Economic & Planning Council, 1983.

45. Karnataka Government, Draft Five Year Plan, 1961-66 to 1985-90, Bangalore, Planning Department.

UNITED NATIONS PUBLICATIONS

46. U.N., Methods of Estimating Housing Needs, New York: U.N., 1967.

47. _____, Methods for Projections of Urban and Rural Populations - Manuals on Methods of Estimating Population, Manual VIII, No. 55, New York: Department of Economic and Social Affairs, 1974.

48. _____, Guide-lines for Preparing Sub-National Population Projections, Bangkok: Economic and Social Commission for Asia and the Pacific, 1975.

49. _____, Social Impact of Housing: Goals, Standard, Social Indicators and Popular Participation, New York: U.N., 1977.

50. _____, Population Projections: Methodology of the United Nations - Papers of the U.N. Adhoc Expert Group on Demographic Projections, New York: Department of International Economic and Social Affairs, 1984.