CHAPTER – III

DISTRIBUTION OF POPULATION

DISTRIBUTION OF POPULATION

3.1 INTRODUCTION

In the previous chapter an attempt is made to analyse the physio-socio-economic setting of region under study. Present chapter examines the spatial pattern of population density and concentration in Maharashtra state, centred at population census data of 2001. The patterns of population distribution reveals that how man has attributed himself, at a particular point of time in the context of his physical environment, types of economy, cultural patterns and history. The distributional pattern of population is, infact, eloquent expression of synthesis of all geographic phenomena operating in an area (Chandana, 1969).

The concept of population distribution and density are very useful tools for the analysis of the diversity of man's distribution in space (Clarke, 1972). Further for population geographer successful understanding holds, the key to the analysis for the entire demographic character of an area. The density of population and their disparities are prime concerns to population geographers. The geographer's task is to investigate this diversity in terms of physical, social, demographic, economic, political and historical factors (Ghosh, 1987). Hence the

regional disparities in the distribution and density of population are to be understood in the context of physical and cultural environment of the area.

Geographer's goal is to understand regional differences in distribution. The economic, social and political factors play their role as effectively as others in the distribution of population (Nazir, 1977). So the object of present chapter is to understand the distribution patterns of density and concentration of population in Maharashtra.

3.2   DISTRIBUTION OF POPULATION:

Distribution of population is mainly determined by growth, density and concentration of population. Therefore, geographical study of these population aspects of region have vital importance for understanding distribution of regional levels (Prasad, 1990).

3.2.1 Growth of Population:

In 1901 population of the State was 1.94 crores while in 2001 it is 9.69 crores. During 1901-1911 the population of the State was increased by 10.74 percent. But during 1911-1921 it decreased by 2.91 percent due to high mortality caused by famines, epidemics of plague and scarcity conditions. Hence, the year 1921 may be considered as a demographic divide in the history of population growth. During 1921-1931 there was rapid growth of population and 1931-1941 the growth of population was 11.99 percent indicating decline in growth. During 1941-

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Decennial Growth of Population In %
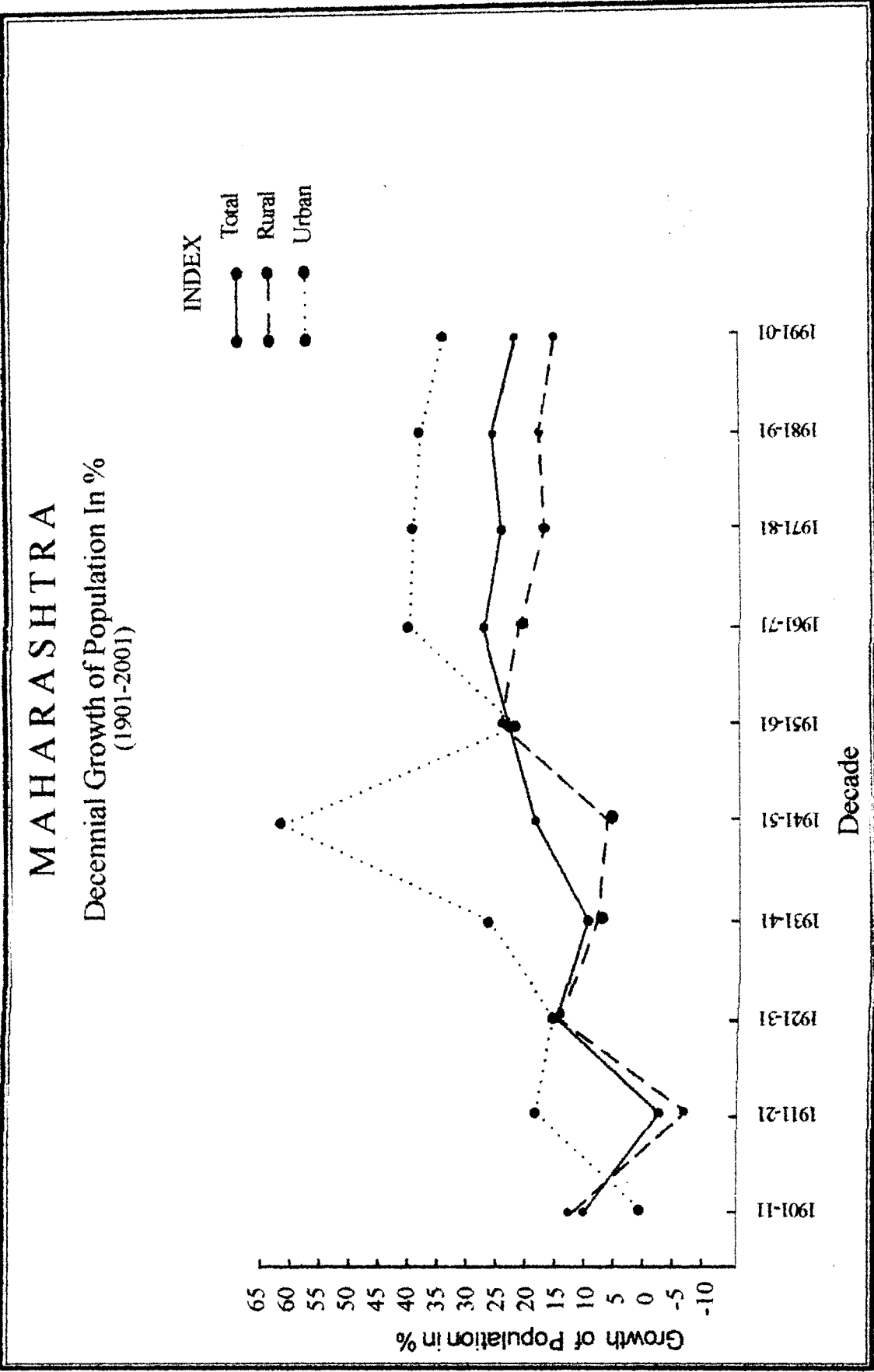(1901-2001)

Fig 3.1

1951 and 1951-1961 the population growth rate was 19.27 and 23.60 percent respectively. In 1961-1971 the growth rate of population in the State was also higher than the national average (24.08 percent). These increasing rates may be due to better medical facilities, declining death and morbility rate and increasing net reproduction rate. But during the last 3 decades the rate of growth of population is declining gradually (Fig. 3.1).

Between the census year 1901 and 2001 the rural population of Maharashtra was increased by 3.45 times. In 1901 rural population in the State was 1.62 crores while in 2001 it was 5.57 crores.

The growth of urban population in the State indicates the process of industrial and economic development. The urban population of Maharashtra has gone up from 32.17 lakh in 1901 to 410.20 lakhs in 2001. During this period urban population was increased by 12.75 times.

3.2.2 DENSITY OF POPULATION:

The study of spatial distribution of population remains incomplete without the identification of its density. In fact the concept of density of population provides a quantitative measure of a degree of population concentration in an area. A study of distribution, which therefore, is to be supplemented by discussion on the pattern of the population density. The term density of population refers to a ratio between population and land area. It is a measure of degree of population concentration and

gradually expressed in terms of number of persons per unit area (Chandana and Sidhu, 1980).

Density of population helps us in understanding the nature of distribution of population. Density of population plays an important part in any scheme related to health, trade and socio-economic development. In short it indicates possibilities of development (Sawant and Athavale, 1994). There are many types of population densities but in the present study only crude, rural and urban densities are considered because they have more significance for spatial comparison.

a)   Crude Population Density:

The overall population density of the study region is 314 persons per km^2. There is no uniformity in the distribution of population in State as it varies from district to district. On the basis of density the region under study is divided into following categories (Fig. 3.2).

Table No. 3.1

Maharashtra: Division and district-wise crude, rural and urban population density, 2001

Sr. No.	Division/District	Crude density/sq.km.	Rural density/sq.km.	Urban density/sq.km.
I.	KONKAN DIVISION	807	212	11778
	1. Mumbai Suburb.	19855	--	19855
	2. Mumbai	21190	--	21190
	3. Thane	850	252	4441
	4. Raigarh	308	239	3280
	5. Ratnagiri	207	185	3347

	6. Sindhudurg	165	151	2698
II	NASIK DIVISION	274	201	3852
	7. Nasik	221	203	3738
	8. Jalgaon	313	230	5769
	9. Ahmednagar	240	197	2324
	10. Dhule	212	182	6082
	11. Nandurbar	260		
III.	PUNE DIVISION	349	223	5299
	12. Pune	462	201	7275
	13. Kolhapur	457	328	7440
	14. Satara	267	234	1894
	15. Solapur	259	179	7177
	16. Sangli	301	236	1999
IV	AURANGABAD DIVISION	241	184	4195
	17. Aurangabad	249	186	4769
	18. Latur	290	224	7269
	19. Osmanabad	195	165	4962
	20. Beed	202	167	4197
	21. Nanded	272	211	3559
	22. Parbhani	229	171	3482
	23. Hingoli	218		
	24. Jalana	209	171	3017
V	AMARAWATI DIVISION	216	184	8601
	25 Amarawati	213	170	5442
	26. Akola	300	177	5337
	27. Washim	198		
	28. Yavatmal	181	148	6877

	29. Buldhana	230	183	7224
VI	NAGPUR DIVISION	208	132	5586
	30. Nagpur	413	152	7150
	31. Wardha	195	144	8451
	32. Bhandara	262	218	3836
	33. Gondiya	221		
	34. Chandrapur	182	125	4146
	35. Gadchiroli	67	63	974
	MAHARASHTRA STATE	314	185	6586

Source: 1. Census of India, Maharashtra 2001, Provisional Population
totals series, pp. 133-136.
2. Compiled by Author.

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CRUDE POPULATION DENSITY 2001

Persons per Sq. Km.

Above 500

401 - 500

301 - 400 ← State Average 314

201-300

101-200

Below 100

N

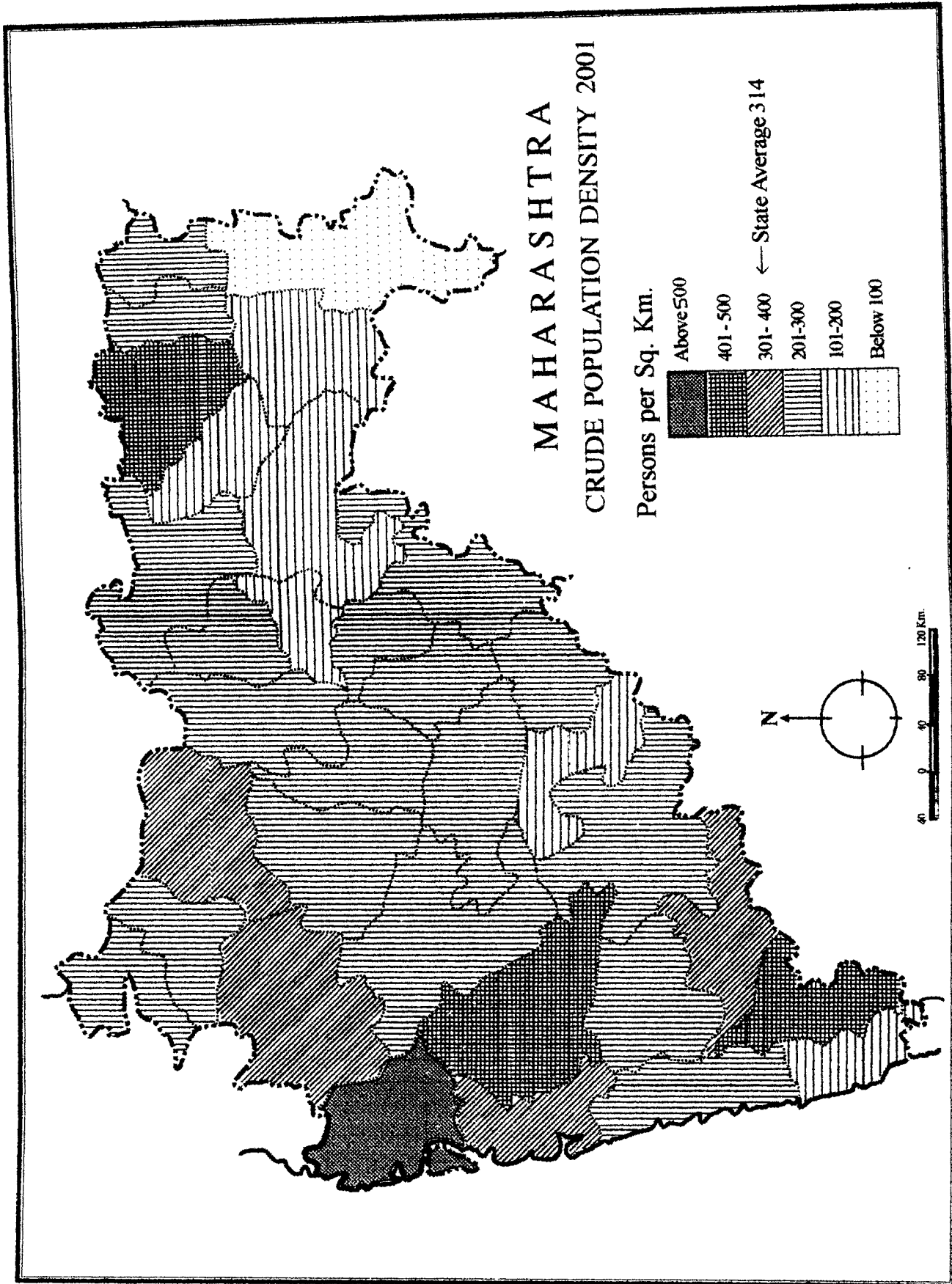40   0   40   80   120 Km.

Fig. 3.2

I.   Areas of extremely high density:

There are some areas where the density is exceptionally high. Extremely dense areas are spread over 3 districts with 500 persons/km^2. They are Mumbai, Mumbai Suburb and Thane. These 3 districts have extremely high density of population due to industrialization, urbanization and development of transportation.

II.   Areas of very high density:

The areas of very high density stretch over 3 districts namey Pune, Nagpur and Kolhapur. These districts have very high density due to industrialization and agricultural prosperity (Fig. 3.2).

III.   Areas of high density:

The region under study has 4 districts falling in this category viz. Nasik, Jalgaon, Raigarh and Sangli districts (Fig. 3.2). This category ranges from 301 to 400 persons per sq.km. These districts have high density of population due to proximity to urban centres. The districts like Sangli, Jalgaon and Nasik have agricultural prosperity than others. These districts have better irrigation facilities and good transportation facilities. The agro-based industries plays a major role to boost the population density. In Raigarh district fishing, trade and transport and horticulture are responsible for high density of population.

IV.   Areas of moderate density:

The general density of population has been moderate in 18 districts. Out of 18 districts 3 are in Amarawati division, 2 in Nagpur division, 7 in Aurangabad division, 2 in Pune division, 3 in Nasik division and 1 in Konkan division.

This is a transitional zone between high and the low density areas. The moderate densities are characteristics of the areas where the agriculture is handicapped by undulating topography and paucity of water for irrigation.

V.   Areas of low density:

Out of total districts 6 districts of the study region fall in this category. Viz. Sindhudurg, Yavatmal, Chandrapur, Wardha, Osmanabad and Washim. These districts bear small portion of land under cultivation, with no irrigation and soil fertility is poor. Topography of districts is rugged. They are also lagging behind in transportation facilities, industrialization and urbanization.

VI.   Areas of very low density:

The region under study has only one district namely Gadchiroli falling n this category. This district is located in eastern part of the study region. The very low density in this district is because of inaccessible hilly forested upland terrain, unhealthy climate, lack of industrial development, inadequate transportation facilities and lack of commercial

agricultural practices. All these in combination influenced the population density of this district. The population is mostly tribal.

b)   Rural population density:

Rural population density in the State is 185 persons per sq.km.. It may be seen from table 3.1 that there is a wide variation in rural density, ranging from 63 persons per sq.km. in Gadchiroli district to 328 persons per sq.km. in Kolhapur district.

Rural population density is high (above 200 persons per sq.km.) in 10 districts viz. Kolhapur, Raigarh, Sangli, Jalgaon, Latur, Nanded, Nasik, Bhandara, Thane and Pune (Fig. 3.3). Rich fertile soils, high to moderate rainfall, healthy climate, irrigation facilities have made agriculture more secure in these districts. Double cropping and variety of cash crops and no. of agro-based industries are also responsible for high rural density in these districts.

Rural populations density is low (below 150 persons per sq.km.) in 4 districts namely Gadchiroli, Chandrapur, Yavatmal and Wardha (Fig. 3.3). It is due to the poor soils, thick forest cover, undulating topography, lack of industrial development, poor irrigation facilities, low urbanization and transportation facilities.

The remaining 17 districts of Maharashtra observed the moderate rural density ranging from 151 to 200 persons per sq.km.
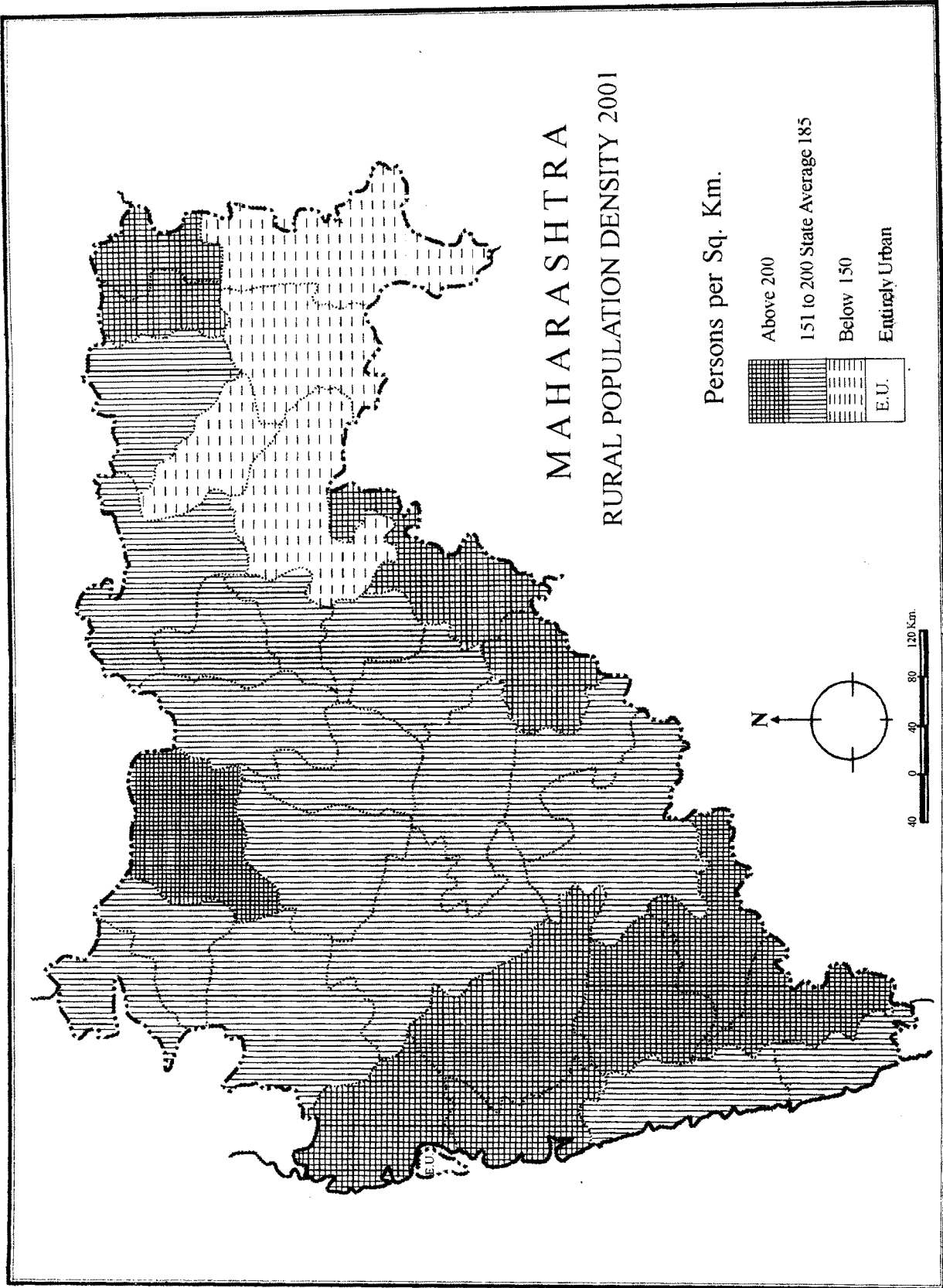
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RURAL POPULATION DENSITY 2001

Persons per Sq. Km.

Above 200

151 to 200 State Average 185

Below 150

E.U. Entirely Urban

N

0 40 80 120 Km.

Fig. 3.3

C)   **Urban population density:**

As per 2001 census, the average density of urban population in the State is 6,586 persons per sq.km. It may be seen from table 3.1 that there is a wide variation in urban density ranging from 840 persons per sq.km. in Hingoli district and 21,190 persons per sq.km. in Mumbai district.

Urban population density is high (above 7,000 persons per sq.km.) in Mumbai suburb, Mumbai, Pune, Kolhapur, Solapur, Latur, Buldhana, Nagpur and Wardha districts (Fig .3.4). Mumbai and Mumbai suburb districts are entirely urban. Mumbai is also known a industrial capital of India. All these districts provide transport, educational, medical and administrative facilities. There is more population migration from rural to urban areas.

Urban population density is low (below 5,000 persons per sq.km.) in Thane, Raigarh, Sindhudurg, Ratnagiri, Satara, Sangli, Nasik, Aurangabad, Beed, Usmanabad, Chandrapur, Ahmednagar, Nanded, Parbhani, Jalana, Bhandara and Gadchiroli districts (Fig. 3.4).

The remaining districts of Maharashtra observed the moderate urban density (5,000 to 7,000 person per sq.km.). The density of urban population has been moderate in 15 districts of State.
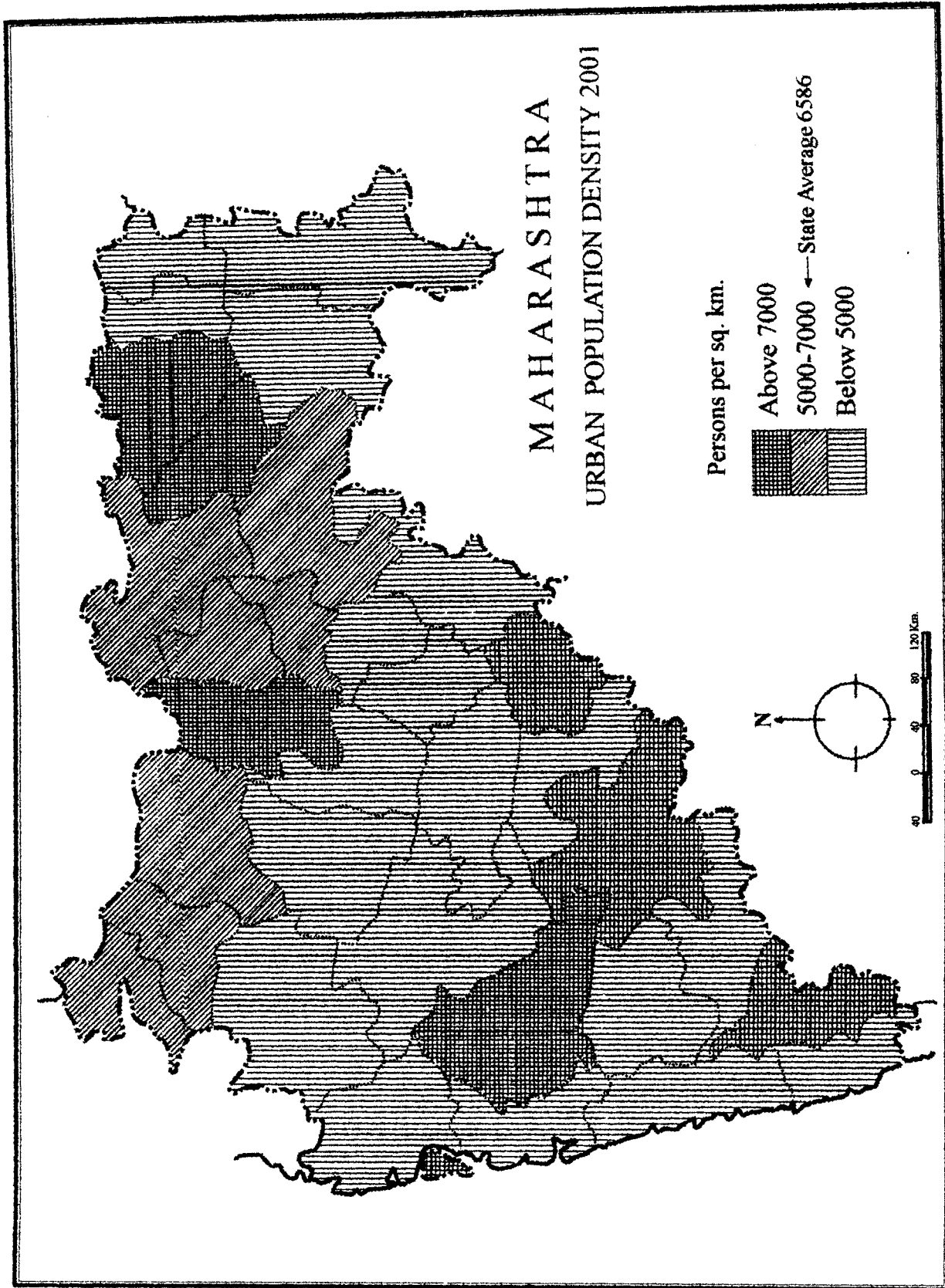
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URBAN POPULATION DENSITY 2001

Persons per sq. km.

Above 7000
5000-7000 ←— State Average 6586
Below 5000

Fig.3.4

3.2.3 CONCENTRATION OF POPULATION:

The study of population distribution is well understood by regional patterns of population concentration. Wide regional disparities in the concentration of population are observed at district level in the State. The population concentration is high in some areas while it is low in other areas. To determine the concentration of population the location quotient method is used. On the basis of quotient values, the region is divided into high, moderate and low concentration of population (Fig. 3.5).

a)   Overall Concentration of Population:

Six districts lie under high concentration of population. The district of Mumbai has the highest concentration of population. This is followed by Mumbai suburb, Thane, Pune, Kolhapur, and Nagpur districts (Fig. 3.5). These six districts together contributes 36.49 percent population of the State, while, they shared 14.09 percent area of the State. Industrialization, transportation, educational and medical facilities, trade and commerce are mainly responsible for this high concentration of population.

The low concentration of population (below 0.9 location quotient value) is observed in 21 districts. Out of them 3 districts are in Nasik division, 4 districts in Nagpur division, 4 districts in Amarawati division, 6 districts in Aurangabad division, 2 districts in Pune division and 2 districts in Konkan division. These district together contribute 41.58

52

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CONCENTRATION OF POPULATION
2001

Location quotient Value
Above 1.1
9-1.1
Below .9
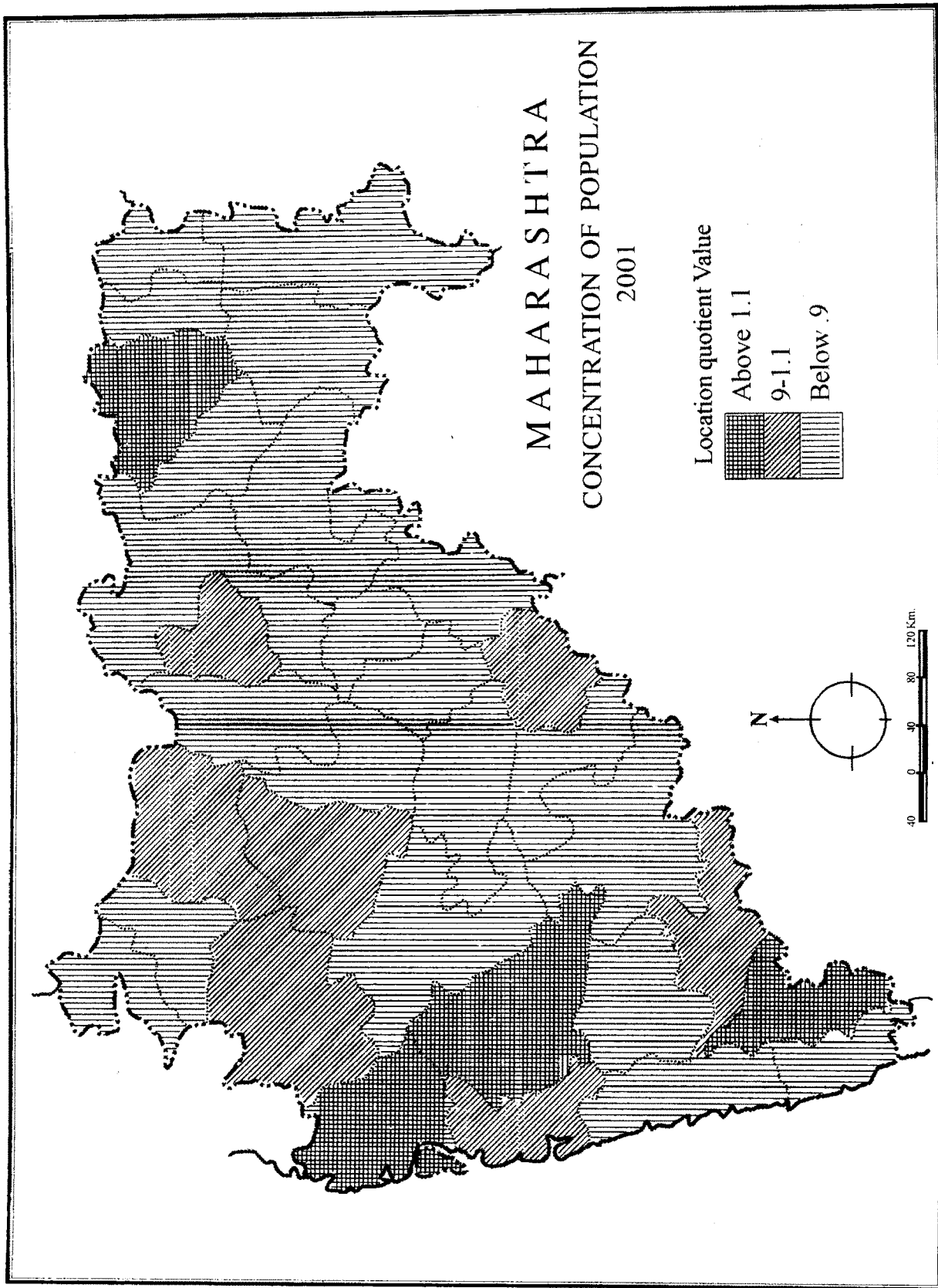
N

0   40   80   120 Km.
40

Fig. 3.5

percent population to the total population of the State while they together represent 61.00 percent area of the State. Unfavourable geographical conditions, small portion of land under cultivation, poor soil and poor transportation facilities are responsible for low concentration of population.

The remaining districts of Maharashtra observed the moderate concentration of population. The value of location quotient of this category ranges from 0.9 to 1.1. Seven districts namely Nasik, Jalgaon, Akola, Bhandara, Aurangabad, Sangli and Ratnagiri have moderate concentration of population. All these districts together contributed 21.93 percent population to the total population of the State, while they shared 24.91 percent area of the State.

The administrative division-wise concentration of population is also analysed by Lorenz curve technique. Fig. 3.6 and Gini's co-efficient value 0.22 clearly shows the low concentration of population in relation to area in the State. The Konkan division contributes 25.64% of total population of the State, while it shared only 9.98% area of the State. Population concentration is low in Amarawati division. It contributes 10.27 percent population of the total population of the State and share only 14.95 percent area of the State.
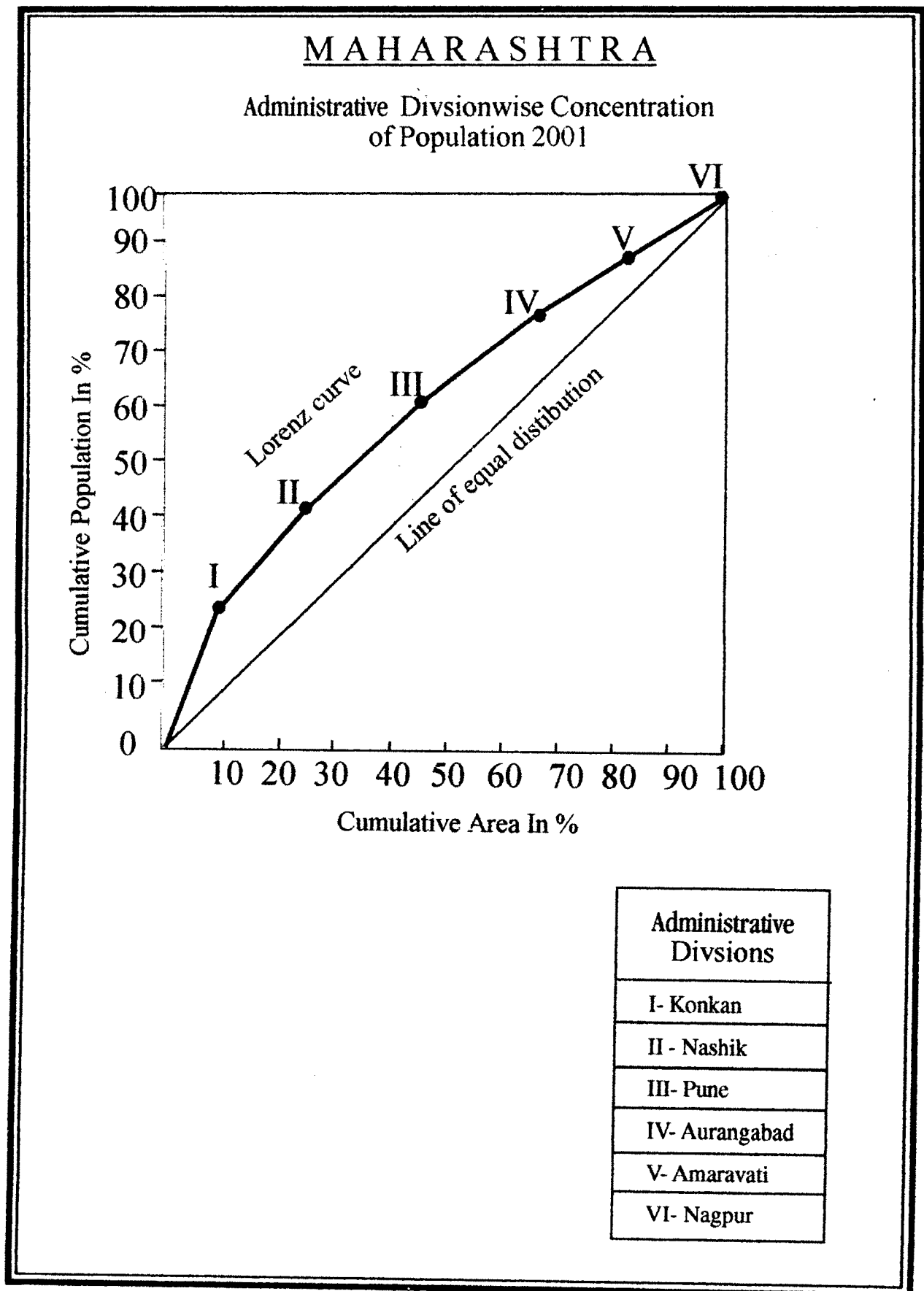
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Administrative Divsionwise Concentration of Population 2001

Administrative Divsions
I- Konkan
II - Nashik
III- Pune
IV- Aurangabad
V- Amaravati
VI- Nagpur

Fig 3.6

b) Concentration of rural population:

The district-wise variations are also observed in concentration of rural population. Nine districts lie under high concentration category of rural population. The Kolhapur district has the highest concentration of rural population. This is followed by Thane, Raigarh, Sangli, Satara, Jalgaon, Latur, Nanded and Bhandara districts (Fig. 3.7a). These nine districts together contribute 34.27 percent rural population to the total rural population of the State, while they together shared 26.53 percent rural area of the State. These districts have high concentration of rural population due to rich fertile soil, high rainfall, irrigation facilities, double cropping and agro-based industries.

The low concentration of rural population (below 0.9 location quotient value) is observed in 7 districts namely Sindhudurg, Yavatmal, Osmanabad, Nagpur, Wardha, Chandrapur and Gadchiroli. These Disricts together contribute 15.54 percent of rural population of the State, while they together share 22.4 percent rural area of the state. It is to be recorded that Mumbai and Mumbai suburb districts have no rural population. They are entirely urban districts.

The remaining districts of Maharashtra observed moderate concentration of rural popuiation. The value of location quotient of this category ranges from 0.9 to 1.1. In the region under study 13 districts, Viz. Ratnagiri, Pune, Solapur, Nasik, Ahmednagar, Dhule, Aurangabad, Beed, Parbhani, Jalana, Amarawati, Buldhana and Akola fall in this

a.
MAHARASHTRA
CONCENTRATION OF RURAL POPULATION
2001

b.
MAHARASHTRA
CONCENTRATION OF URBAN POPULATION
2001

Location Quotient Value

Above 1.1

.9-1.1

Below -9

E.U.   Entirely Urban
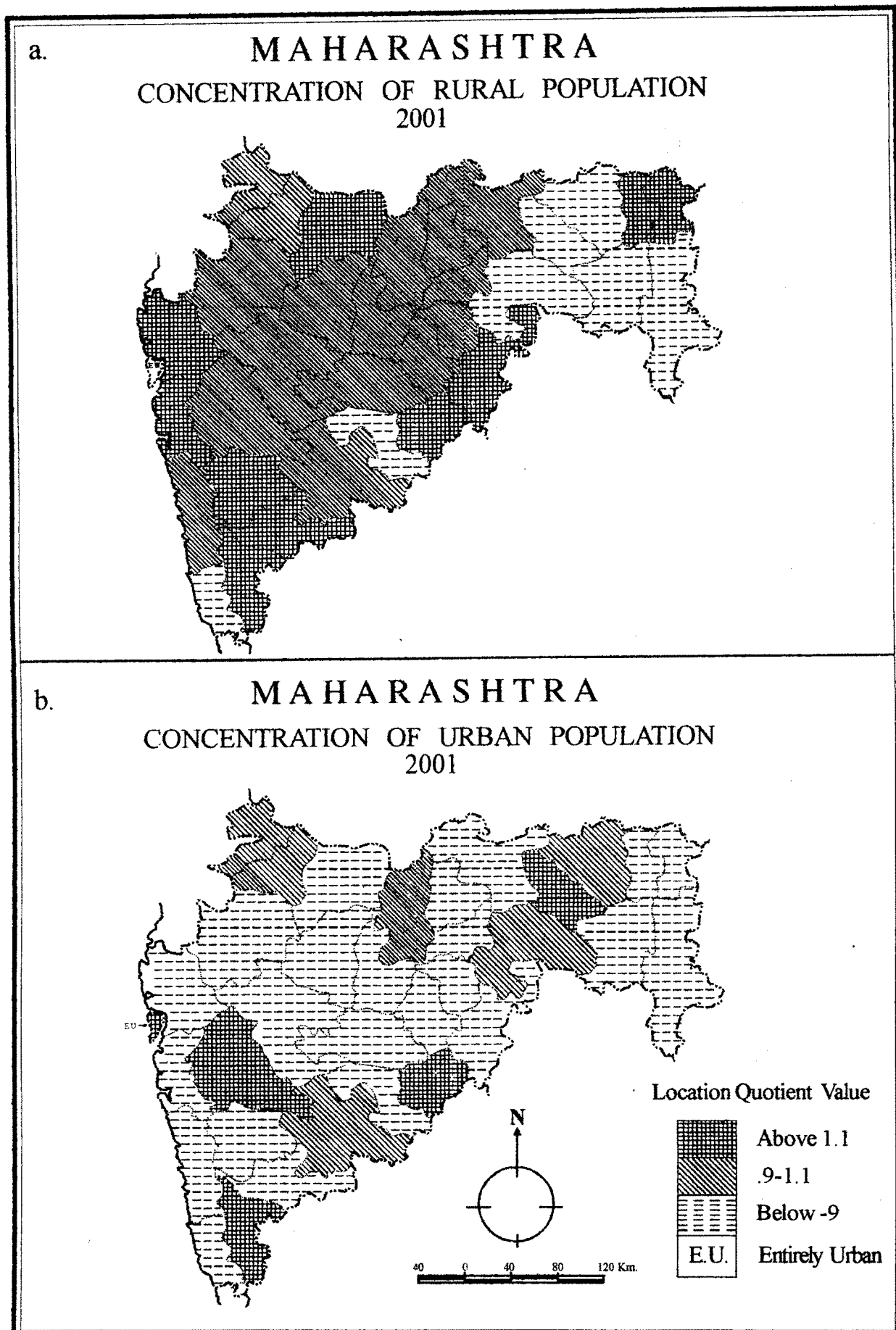
N

40   0   40   80   120 Km.

Fig 3 7

category (Fig. 3.7a). These districts together contribute 50.07 percent rural population of the State, while they share 51.07 percent rural area of the State.

c)   **Concentration of urban population:**

There are district-wise variations in concentration of urban population. Six districts lie under high concentration of urban population viz. Mumbai, Mumbai suburb, Pune, Kolhapur, Latur and Wardha. The districts of Mumbai, Mumbai suburb have the highest concentration of urban population. These districts together contribute 43.28 percent of urban population of the total urban population of the State, while they share 22.86 percent urban area of the total urban area of the State. Industrialization, transport network, educational and medical facilities are mostly responsible for high concentration of urban population.

The low concentration of urban population is observed in 20 districts of Maharashtra. There are 4 districts in Konkan division, 3 districts in Nasik division, 6 districts in Aurangabad division, 2 districts in Amarawati division, 3 districts in Nagpur division and 2 districts in Pune division. These districts together contribute 43.04 percent urban population of the State, while 64.78 percent urban areas of the State.

Moderate concentration of urban population is observed in Buldhana, Nagpur, Solapur, Yavatmal and Dhule districts of the State. These districts together contribute 13.18 percent urban population of the

State, while 12.36 percent urban areas cover from total urban area of the State (Fig. 3.7b).

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