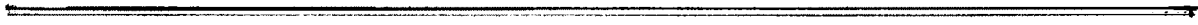


## CHAPTER - III

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THE CHANGES IN POPULATION CHARACTER

- .....
- 3.1 Introduction
  - 3.2 Review of literature
  - 3.3 Population growth in division
  - 3.4 Distribution of population
  - 3.5 Population density
  - 3.6 Urban-Rural distribution of  
population
  - 3.7 Birth rate
  - 3.8 Death rate
  - 3.9 Sex composition
    - 3.9.1 Regional analysis of sex ration
  - 3.10 Literacy pattern
    - 3.10.1 Rural-Urban literacy rate
  - 3.11 Distribution of Scheduled Tribes  
population
  - 3.12 Distribution of Scheduled Castes  
population
  - 3.13 Migration
-

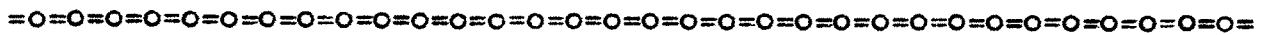


- 3.13.1 Methodology
- 3.13.2 Identification of out in-migration  
at district level
- 3.13.3 Causes of out migration
- 3.13.4 Causes of in-migration
- 3.14 Conclusion
- References

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### 3.1 INTRODUCTION :

It is important to understand at this stage the meaning of population characteristics. Population characteristics include such characteristics as the marital status, literacy and educational status, labour force status. Population structure implies the age and sex structure of the population. Population characteristics, however, can and do change through 'social mobility' that is, through movements of individuals from one status to another, for example - from 'single' to 'married' status and also through fertility, mortality and migration.

The study of population characteristics is an important aspect. The study of the structure and characteristics of population, which is also known as the study of composition of population, covers this aspect of population studies, and it embraces the following basic personal, social and economic characteristics or attributes of any population : age, sex, race, nationality, religion, language, marital status, household and family composition, literacy and educational attainment, employment status, occupation, income etc. (Bhende,1978).

The study of population characteristics is classified into two groups - 1) Ascribed characteristics 2) Achieved characteristics. Ascribed characteristics may be considered

to be biologically or culturally assigned and the individual can not exercise his own choice. It includes such characteristics as age, sex, race and mother tongue. Such characteristics as nationality, religion (and caste) may, of course, be later changed by an exercise of an individual's choice, through he/she is born with them, and in that sense may be considered to be ascribed characteristics.

The achieved characteristics, on the otherhand, are those which are normally open to the individual's choice. Examples of such achieved characteristics are those which relate to marital status, educational attainment, labour force status, occupation, industry etc. (Bhende,1978).

Population may be distributed into such groups, according to each of the foregoing characteristics. For instance, when sex is considered, the entire population may be classified into two groups. The study of population characteristics thus relates to the distribution of one or more of these characteristics within a population. Such a type of study is particularly needed in a country where a conseious effort is being made to change the functional character of population and improve its standard of living.

Several uses of the study of population characteristics may be identified. (1) It helps in an elaborate study of any population and thus make comparisons possible. (2) The data on

population characteristics is useful in the preparation of inventories of human resources, so necessary for effective developmental planning. (3) When reliable information on births and deaths is not available from the civil registration system, it may be obtained by utilising the data on age-sex distribution of the population available from a census. (4) Data on the distribution of population attributes provide material for the study of social and economic structure of the population and the changes in this structure (Bhende, 1978).

### 3.2 REVIEW OF THE LITERATURE :

A systematic study of the population characteristics has emerged recently in geographical literature. The geographical studies of population characteristics have been plenty in India and other countries. The concept of population characteristics is widely studied by sociologists, economists, geographers, demographers, planner, ecologists and administrators etc. In geography many scholars like Maya Banerjee (1975) studied literacy in Singbhum Bihar. Gosal Gurdev Singh (1964) literacy in India, an interpretative study. Golden, Hilda H. (1968), 'Literacy international Encyclopaedia of Social Sciences'. Gopal Krishan and Mahadev Shyam (1977) literacy in India, have attempted literacy areas and their structure. Phanibhusan Roy (1979) studied pattern of absorption of population in gainful

occupation - A case study of five cities in West Bengal.  
H.R. Betal (1976) studied mapping techniques with special reference to density of population in Midnapore, attempted population characteristics studies.

In the present chapter, a few important characteristics of population are analysed. Since the regional data is available at district level the unit of study is district. The study of each character is attempted through various aspects such as, sex ratio is studied for all the population of district and also for rural and urban population. Similarly the birth rate, death rate, literacy ratio, migration, S.C. and S.T. population has been studied in detailed.

### 3.3 POPULATION GROWTH IN DIVISION :

Any change in population number is called growth. If this change is in the negative direction i.e. if population decreases, the growth is negative.<sup>1</sup> When the change is positive direction, i.e. population increases, the growth is positive. This is to indicate that a growth does not necessarily always mean only an increase.<sup>2</sup> The term growth is used in its broadest connotation to cover change in population numbers inhabiting a territory during a specific period of time, irrespective of the fact where the change is either negative or positive. The growth of population is a factor associated with man's occupation, cultural background,

historical events and political ideology. Population growth is the function of three basic determinants - fertility, mortality and mobility. The difference between human fertility and mortality is called natural increase of population. The trends of population growth are basic to change in over all geographic personality of any area. The analysis of growth of population may be approached in two ways i) The net growth of population over years and analyse them ii) Alternatively, may analyse individual changes as they occurred - birth, deaths and migration based on vital statistics. The purpose of this point is to examine the dynamics of population numbers in study region (Panibhusan Ray, 1979).

#### Intercensal Changes in Population :

This is the most conventional method of describing population growth and is much in vogue among the geographers. Only two figures are necessary two population numbers at two different point of time. If the two populations at two points of time '0' (preceding) and '1' (succeeding) are denoted by  $P_0$  and  $P_1$  the change in population numbers may be measured by  $P_1 - P_0$  and relative change by the ratio  $P_1 - P_0 / P_0$ . It is then multiplied by a constant, say 100 and called percentage growth not a rate of growth.

Maharashtra as a whole has registered 25.36 percent as a decadal growth rate for the period 1981-1991. This growth

rate is higher than that of the period 1971-1981. When both growth rate are compared the difference is observed that percentage of the growth rate for period 1981-91 is higher 0.82 than that of the period 1971-81 decade. The state has the addition of 159 lakh during 1981-91 as compared to 124 lakh during 1971-81 period.

Table 3.1 : Population growth in study region.

Sr. No.	District/State	Decennial growth of population 1971-81	Decennial growth of population 1981-92
1	Maharashtra	+ 25.54	+ 25.36
2	Division	+ 21.32	+ 23.46
3	Pune	+ 31.04	+ 31.93
4	Satara	+ 18.02	+ 19.92
5	Sangli	+ 18.91	+ 19.83
6	Solapur	+ 15.88	+ 24.57
7	Kolhapur	+ 22.73	+ 21.05

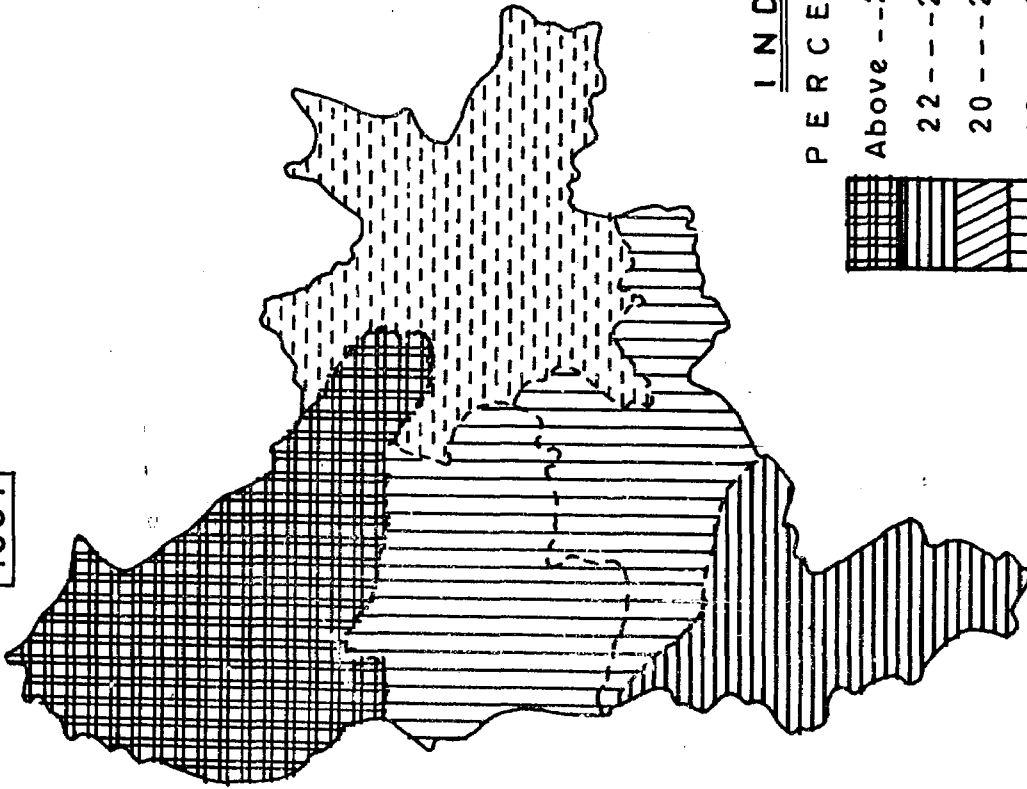
SOURCE : Compiled by author, based on Census 1991.

According to 1981 census, very high birth rate is observed in pune district, whereas high birth rate is observed in Kolhapur and moderate in Satara and Sangli district. Poor birth rate is found in Solapur district. The 1991 census reveals that very high birth rate is observed in Pune district,

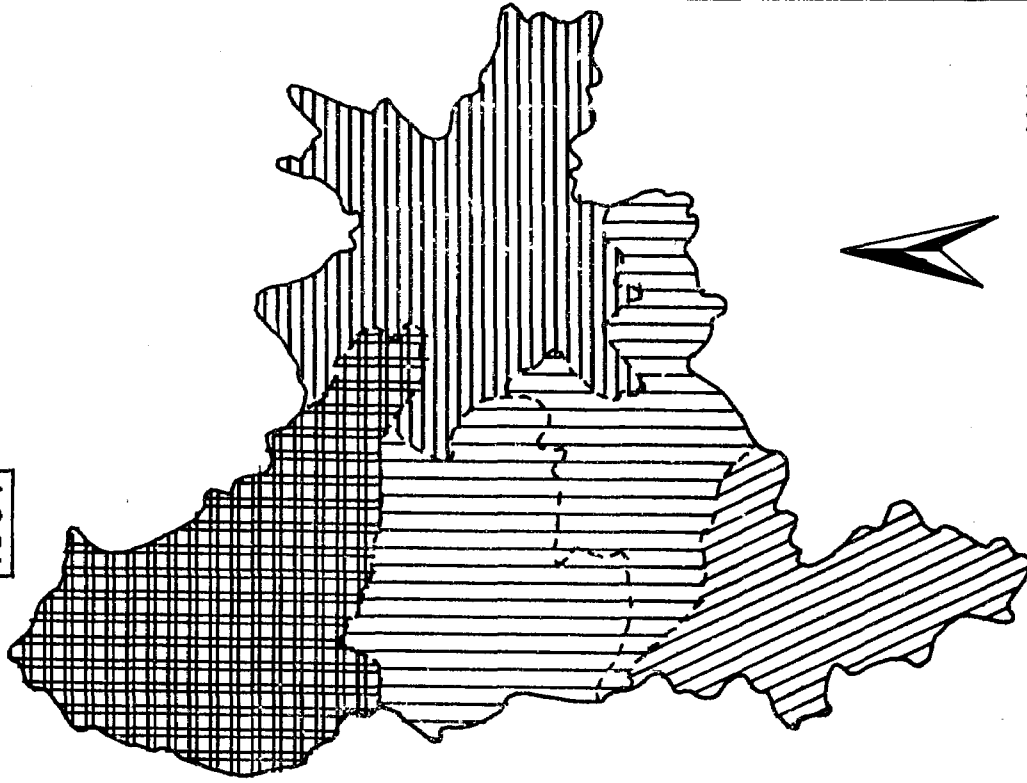


PUNE DIVISION  
GROWTH RATE OF POPULATION

1981



1991



I N D E X  
P E R C E N T A G E

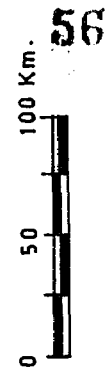
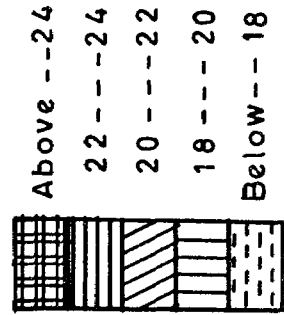


Fig.3.1

whereas high birth rate is observed in Solapur and Kolhapur district and moderate birth rate is observed in Sangli and Satara districts as shown in Fig.3.1. It clearly shows that the birth rate of Kolhapur district is decreases and in remaining all other districts their birth rate is increases as shown in Table 3.1.

#### 3.4 DISTRIBUTION OF POPULATION :

The study of any population is concerned not only with its size and characteristics, but also with how it is distributional patterns and variation occurring at the point of time (1981). The study of population distribution is useful to understand the regional patterns of population concentration through which densely populated and sparcely populated areas can be identified. It is necessary not only to describe how population is distributed over various spatial areas in terms of density, composition and dynamics, but also to seek reasons for the patterns of this distribution and for changes in these patterns.

The task of describing patterns of population distribution, and of seeking explanations for particular patterns and changes in these patterns, are undertaken to demographers, geographers. The analysis the patterns of population distribution is fundamental to the understanding of population geography of an area, because it is the pattern of population

distribution and density with which all these characteristics of population are intimately related. The United Nations explains 'Each population lives in a given area and a study of the geographical distribution deals with way in which they are distributed over the territory.' When changes taken place in the existing pattern of population distribution, the resulting changed pattern is referred to as population redistribution. The intent of present study is distributional pattern of population in Pune division.

The region under study has a total population 16,413,956 persons according to the 1991 census. The region with 18.61 per cent of the total state area, has about 20.79 percent of the state population. The physical and human factors affect the distribution of population. (The distribution of population is uneven because of above factors affect on the distribution). The most populous city is Pune in the study region and others are Solapur, Kolhapur, Sangli and Satara.

General distribution of population gives clear idea of distribution. In the study region Pune, Solapur and Kolhapur districts have recorded higher population than that of Sangli and Satara districts. The western side of each district consisting of hilly region known as the Sahyadrian ranges has low density of population whereas the eastern side of each district records low density. Only the middle portion of each district records moderate distribution of population. The river basins

such as Krishna, Bhima records a high concentration of population. The area with higher industrial locations show high concentration of population.

Population is concentrated in fertile plains and the hilly portions remain sparsely populated. Transport routes have facilitated the distribution of population where transport routes are absent population thins out. It is clear that the distribution of population is mostly influenced by the physiography of region.

### 3.5 POPULATION DENSITY :

Population density refers to the population of a particular area per square mile or square kilometer. The concept of population density is one of the important factors used to determine population distribution, growth and migration. The people may be so spread as to yield a linear or dispersed pattern of population distribution. On the other hand, the term density of population refers to a ratio between population and land area. It is a measure of the degree of population concentration and is generally expressed in terms of number of persons per unit area. If growth of population is uniform the density of all constituent units will increase in the same proportion from one time point to another, but a differential pattern of population growth various constituent unit will lead to

variations in population densities (Chandana,1980). The density of population of study region during 1981-1991 is shown in Table 3.2.

**Table 3.2 : Density of population in Pune division  
1981-1991.**

District	Area in sq.km.	Population 1981	Population per sq.km.	Population 1991	Population per sq.km.
Pune	15,643	4,164,470	266	5,532,532	353
Satara	10,480	2,038,677	195	2,451,372	233
Sangli	8,572	1,834,293	214	2,209,488	257
Solapur	14,895	2,588,139	174	3,231,057	217
Kolhapur	7,685	2,457,095	320	2,989,507	389
Maharashtra	307,713	62,784,171	204	78,937,487	256

**SOURCE :** Primary Census Abstract (Final) 1991.

**Spatial Pattern of Population Density :**

The region under study has average density of 228 persons per sq. km. in 1981. As compared to Maharashtra's average density was 204 persons per sq.km. According to 1991 census average density of study region is 287 persons per kilometer which is more than Maharashtra's average 256 persons per kilometer. However, there are some districts in study region which have recorded

higher density than the state average. Since average density may not give realistic picture of density variations, the study of districtwise density is attempted here.

Five categories of population density have been considered for analysis (Table 3.2). These are very high (above 350 persons per sq.km), high (300-349 persons per sq.km), moderate (250-299 persons per sq.km), low (200-249 persons per sq.km), and very low (below 200 persons per sq.km) density areas.

Table 3.3 : Categories and density of population

Density category	Density class per sq.km.	District category 1981	District category 1991
Very high density	Above 350	-	Pune, Kolhapur
High density	300 - 349	Kolhapur	-
Moderate density	250 - 299	Pune	Sangli
Low density	200 - 249	Sangli	Satara, Solapur
Poor density	Below 200	Satara, Solapur	-

SOURCE : Compiled by the author, based on Census Report, 1991.

According 1981 census, high density of population observed in Kolhapur district because agricultural development associated

with socio-economic facilities. Moderate density of population was observed in Pune district. Whereas low density of population was confined to Sangli district. Besides these, poor density (below 20) of population occurs in Satara and Solapur district. Low density is predominantly found in drought prone area which has inadequate irrigation facilities and poor nature of agriculture.

The 1991 census reveals that very high density of population observed in Pune and Kolhapur districts. These districts enjoy substantial agricultural and industrial development which is associated with socio economic development. The employment opportunities and encouraging socio-economic atmosphere have attracted people from surrounding areas. Moderate density of population is observed in Sangli district. Besides these, low density of population is observed in Satara and Solapur districts as shown in Fig.3.2.

#### Changing Pattern of Population :

We observed decadal change in population density in Table 3.1 in the year 1981 total population of division was 13,082,672 with 228 persons per sq.km. The density increased by 287 persons per sq.km. in 1991. There appears some regularities in the increase in density between 1981 to 1991. This general picture of density may not give an accurate presentation of density of district.

# PUNE DIVISION POPULATION DENSITY

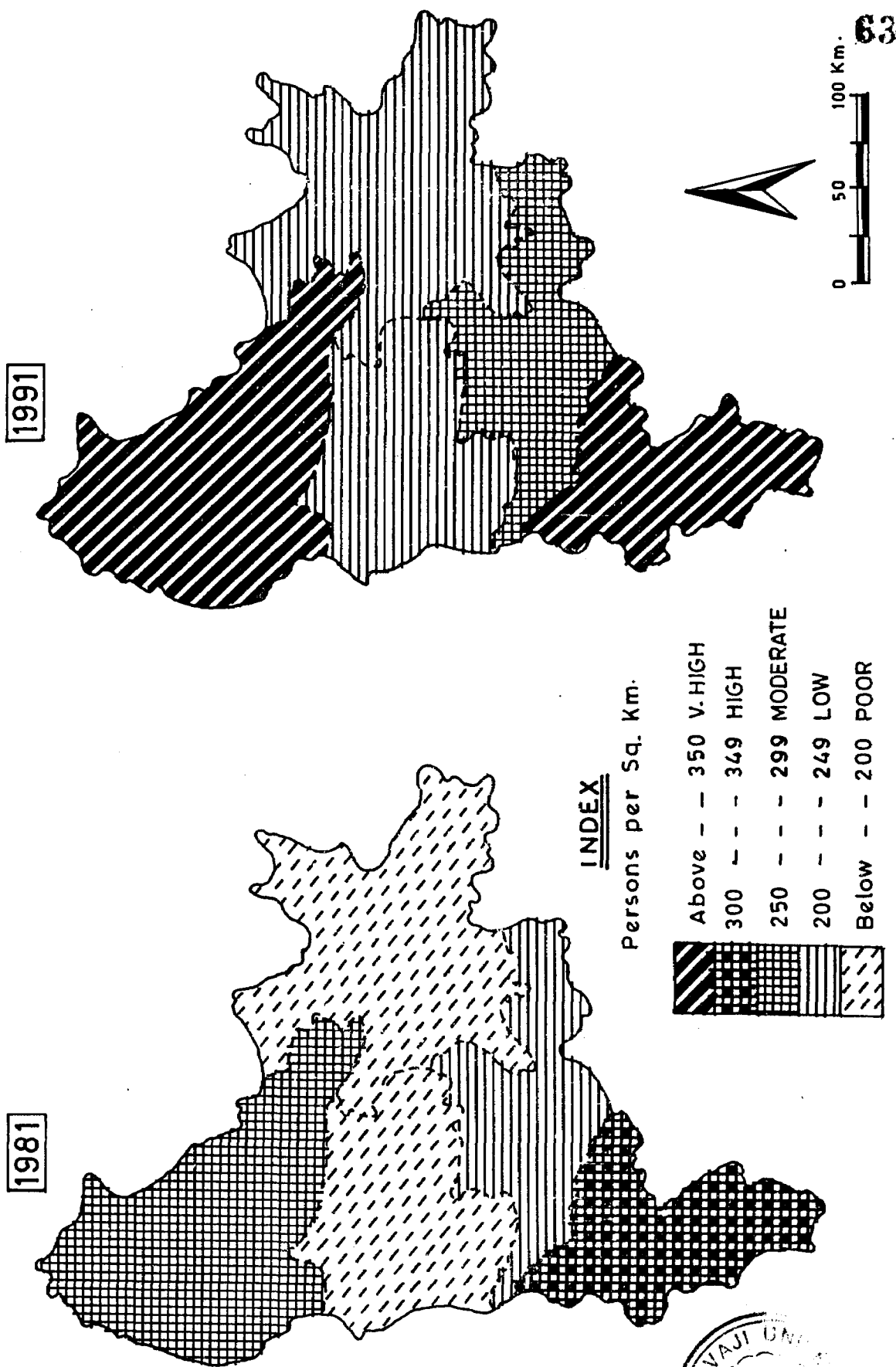


Fig. 3.2





The changes are observed in all categories of density. In 1981 the category of Kolhapur and Pune districts are very high and moderate respectively, but in 1991 it is changed into very high density of population. The very low density of population category in Satara and Solapur are change upward trend in the increase of population density during these decade.

### 3.6 URBAN RURAL DISTRIBUTION OF POPULATION :

There exist a wide disparity in urban and rural distribution. These disparities are attributed to the following factors.

- i) Development of industry
- ii) Development of transport and communication
- iii) Development of social and economic facilities
- iv) Employment opportunities.

In the study area in 1981 there is 72.78 percent rural population and 27.22 percent urban population. As compare to Maharashtra the study region has less percentage of urban population. However in the study area Pune district has 52.67 percent rural population and 47.33 percent urban population, which is 12.30 percent more than the urban population in the study area is found in Satara district and lowest rural population in Pune district, whereas other

**Table 3.4** : Rural-Urban population (percentage 1981-1991).

State/ District	Rural urban popul- ation %	Person in 1981	Males in 1981	Females in 1981	Person in 1991	Males in 1991	Females in 1991
Maharashtra	Rural	66.97	66.33	66.72	61.27	60.04	62.59
	Urban	35.03	36.67	33.28	38.73	39.96	37.41
Division	Rural	72.78	71.98	73.59	71.65	71.18	72.17
	Urban	27.22	28.02	26.41	28.35	28.82	27.83
Pune	Rural	52.67	51.31	54.12	49.24	48.44	50.11
	Urban	47.33	48.69	45.88	50.76	51.36	49.89
Satara	Rural	86.96	85.98	87.89	87.09	86.36	87.80
	Urban	13.04	14.02	12.11	12.91	13.64	12.20
Sangli	Rural	78.48	77.95	79.03	77.16	76.76	77.58
	Urban	21.52	22.05	20.97	22.84	23.24	22.42
Solapur	Rural	70.60	70.43	70.77	71.19	71.32	71.05
	Urban	29.40	29.57	29.29	28.81	28.68	28.95
Kolhapur	Rural	75.18	74.23	76.16	73.59	72.91	74.30
	Urban	28.82	25.77	23.84	26.41	27.09	25.70

**SOURCE** : Compiled by author, based on Census Report 1981-1991.

PUNE DIVISION  
RURAL POPULATION

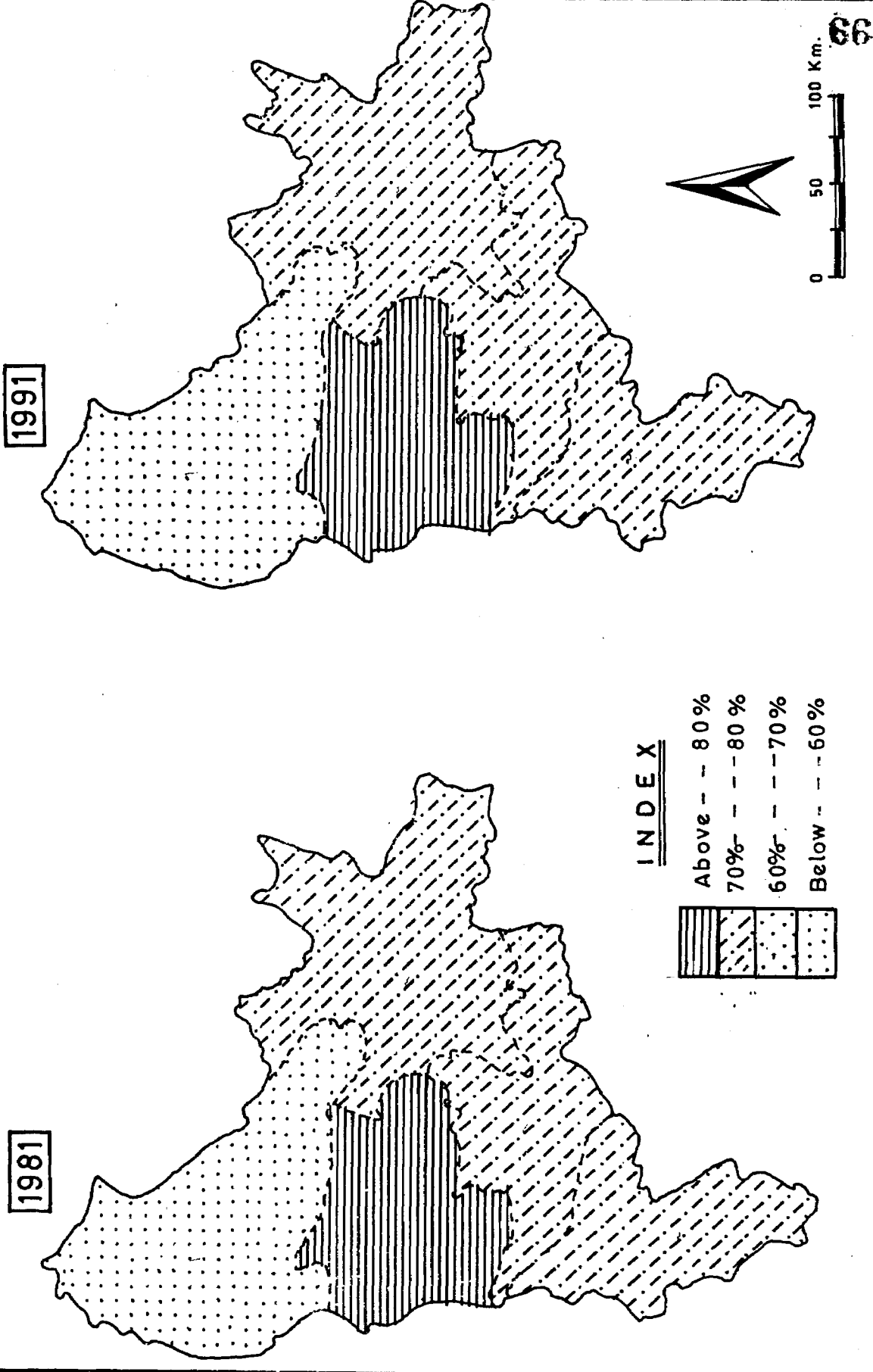


Fig.3.3

districts have rural population varying between 70 to 80 percent as shown in Fig.3.3.

In study area in 1991 there is 71.65 percent rural population and 28.35 percent urban population. As compare to Maharashtra the study region has less percentage of urban population (10.38 percent). However in the study area Pune district has 49.24 percent rural population and 50.76 percent urban population which is 12.03 percent more than the urban population of the state. The highest rural population is observed in Satara district that is 87.09 percent, whereas other districts have rural population varying between 71 to 77 percent. The urban population is clearly shown in Fig.3.4.

The comparative analysis of male and female rural population also gives interesting picture. In 1981 in Pune district more female population (2.81) is found in rural areas as compare to male population same is observed in Satara, Sangli and Kolhapur districts. While in Solapur district it is some what equal. In the year 1991 there is very little change in male/female percentage of population.

In respect of urban population in 1981 all districts have more dominance of male population as compare to female population. In 1991 also male population dominates the urban areas, only Solapur district shows equal percentage of male and female population.

PUNE DIVISION  
URBAN POPULATION

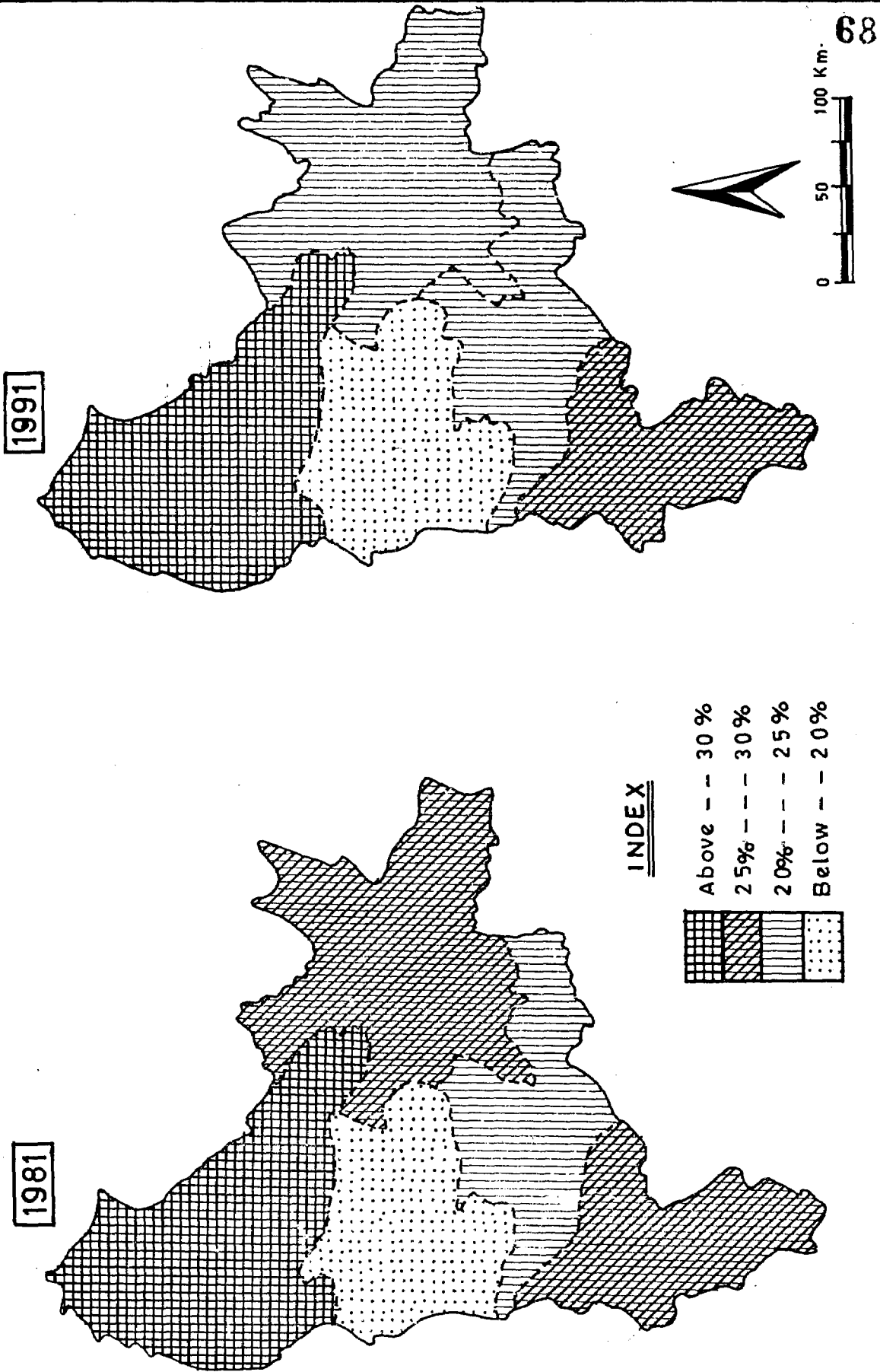


Fig. 3.4

### 3.7 BIRTH RATE :

Fertility is concerned with addition of new members to a population as a result of birth, that is the actual performance of a population in bearing children, which is the biological capacity of the population to bear children.

Fertility, mortality and migration are the three processes which may act to change the size of composition of a population. The first of these factors is probably of greater significance in industrialized nation rather than the other two factors. Whereas mortality rate appears to have fluctuated widely in area and through time in the past centuries and appears to have been largely responsible for changing rate of population growth. At present, mortality rate is comparatively low and stable in many countries only to technological, biological development (Clarke, 1968). The birth rate is expressed in several terms, such as the crude birth rate, age specific birth rate, parity-specific birth rates.

#### Regional Analysis :

In the study area in 1981 the birth rate is 21.78 percent. It is also found that the birth rate of study region is more than Maharashtra. The highest birth rate is observed in Solapur district (24%) and lowest birth rate is found in Sangli district (20.7%), where as other



districts of study region observed normal as shown in Fig.

3.5. The birth rate in rural areas in the study region is 17.86 which is higher than the State of Maharashtra. In case of urban areas the birth rate in study region is 33.48 which is higher than that of state of Maharashtra by 5.18. The higher rural birth rate is observed in Solapur district (19.3) and lowest in Pune district (16.6). In other district is found between 17.3 to 18.3 as shown in Table 3.5.

Table 3.5 : Birth Rate (1981-1991).

State/ District	Birth rate in 1981			Birth rate in 1991		
	Rural	Urban	Total	Rural	Urban	Total
Maharashtra	17.2	28.3	21.3	18.6	27.7	22.2
Division	17.86	33.48	21.78	19.4	36.8	23.6
Pune	16.6	26.5	21.30	18.0	25.4	21.9
Satara	17.8	42.7	21.2	19.4	51.7	23.8
Sangli	17.3	31.5	20.7	18.9	34.6	22.5
Solapur	19.3	35.2	24.1	23.6	36.9	27.8
Kolhapur	18.3	31.5	21.6	17.0	35.3	21.8

SOURCE : Director of Health Service, Govt. of Maharashtra.

In 1991 the birth rate in the study region is observed 23.6 which is more than the State of Maharashtra. The highest

PUNE DIVISION  
BIRTH RATE

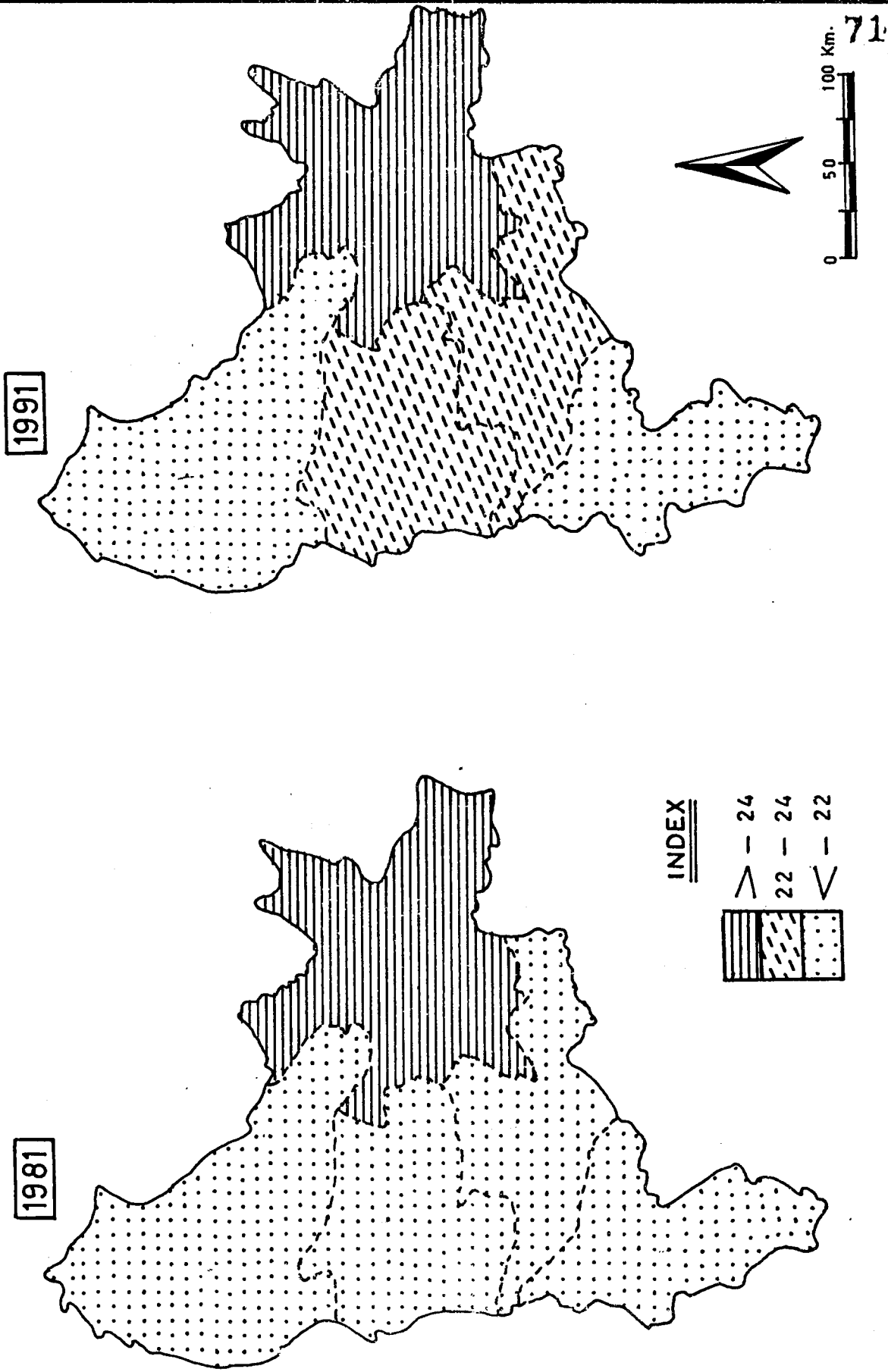


Fig.3.5



birth rate is found in Solapur district (27.8) and lowest one is found in Kolhapur district (21.8). The birth rate in Pune, Satara and Sangli districts are observed as 21.9, 23.8 and 23.5 respectively. In case of Satara and Sangli districts there is progressive change in birth rate of 1991 as compare with that of 1981 as shown in Fig.3.5. In case of rural area the birth rate in study region is observed 19.4 which is more (0.8) than the state. The birth rate in rural areas is highest in Solapur district and lowest in Kolhapur district, the difference between highest and lowest is 6.6. In the district of Satara, Sangli and Pune the birth rate in rural areas are observed between 18 to 19.4. The birth rate within urban areas in study region is 36.8 which is more than that of State of Maharashtra. It is observed that the birth rate in urban areas is higher than the rural areas. In study area it is highest in Satara district (51.7) and lowest in Pune district (25.4). In other district like Sangli, Solapur and Kolhapur it is observed between 34 to 37 as shown in Table 3.6. The birth rate (1981) in study area was 21.78 and it increased upto 23.6 in 1991. In case of rural and urban areas the birth rate shows increasing trend.

### 3.8 DEATH RATE :

The basic measure for the study of mortality are death rates, crude death rates, age specific death rates etc. Mortality that is the occurrence of death is a highly variable phenomenon

in terms of its causes and the age at that time of death. Reliable death rates depends on the availability of reliable death registration data for the numerator and reliable population data for the denominator (Chandna,1980). Every effort should be made to evaluate the completeness of registration before interpreting the significance of death rate.

Table 3.6 : Death rate (1981-1991).

State/ District	Death rate in 1981			Death rate in 1991		
	Rural	Urban	Total	Rural	Urban	Total
Maharashtra	6.0	7.3	6.5	5.6	6.8	6.1
Division	5.36	8.2	6.16	5.2	8.3	6.0
Pune	4.7	7.7	6.2	4.9	7.3	6.1
Satara	5.4	8.6	5.8	5.5	8.3	5.8
Sangli	5.5	9.5	6.4	4.8	9.7	5.9
Solapur	5.5	7.7	6.2	5.9	8.0	6.5
Kolhapur	5.7	7.5	6.2	4.9	8.0	5.7

SOURCE : Director of Health Service, Govt. of Maharashtra.

Regional Analysis :

The death rate in 1981 is observed 6.16 in the study region which is less than that of State of Maharashtra. The

highest death rate is observed in Sangli district (6.4) and lowest one in Satara district (5.8). In remaining all the districts same death rate is observed that is 6.2 as shown in Fig.3.6. The average death rate in rural areas of study area in 1981 is 5.36 which is less than that of state of Maharashtra. The lowest death rate in rural areas is observed in Pune district (4.7) and other districts have rural death rate varying between 5.4 to 5.7. The death rate in the study region in case of urban areas is 8.2 which is more than that of state of Maharashtra. The highest death rate in urban areas is observed in Sangli district (9.5) and in case of Kolhapur district it is found less (7.5). In other districts it is observed between 7.5 to 9.5 as shown in Table 3.5.

In 1991 the death rate in study region is 6 which is near about equal to that of state. The highest death rate is observed in Solapur district (6.5) and lowest one is observed in Kolhapur district (5.7), whereas remaining districts have death rate between 5.7 to 6.5 as shown in Table 3.6. In case of rural areas the death rate of study area is 5.2 in 1981. In the study region Solapur district recorded higher rural death rate whereas Sangli district observed lower rural death rate. The death rate in the study region in case of urban areas is 8.3 which is more than state of Maharashtra. The higher urban death rate is observed in Sangli district and lower in Pune district, whereas in other district urban death rate is varying between 8 to 8.3 as shown in Table 3.6.

PUNE DIVISION  
DEATH RATE

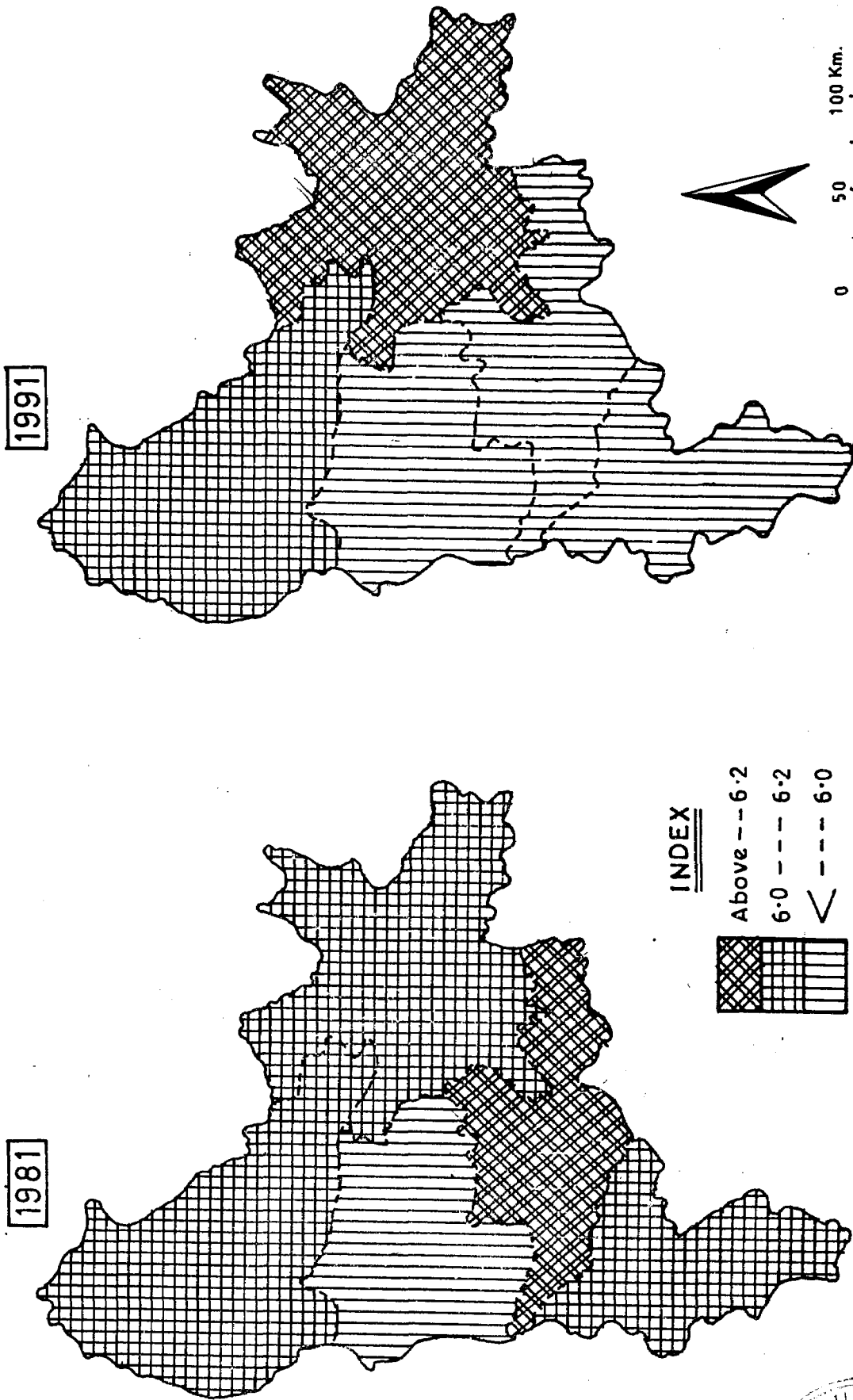
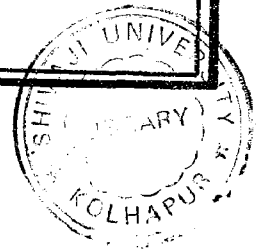


Fig. 3.6



### 3.9 SEX COMPOSITION :

A study of sex ratio between two sexes is important for population geographers. " A clear knowledge of the pattern of sex ratio helps to explain the employment and consumption pattern, social needs of the people and perhaps the psychological characteristics of a community," (Franklin,1956). The sex composition or the relative proportion of males and females in a population at a given instant is the result of preceding hundred years of births, deaths and migration (Thompson and Lewis,1965). Sex is the characteristic which is most likely to be declared accurately at census enumeration.

Table 3.7 : Sex ratio for rural and urban areas  
(1981-1991).

District/ State	Rural 1981	Urban 1981	Total 1981	Rural 1991	Urban 1991	Total 1991
Maharashtra	987	850	937	975	876	935
Division	997	925	973	983	909	968
Pune	988	883	937	969	906	936
Satara	1085	916	1060	1052	926	1035
Sangli	980	919	967	977	932	966
Solapur	946	931	942	933	945	936
Kolhapur	986	895	962	984	916	966

SOURCE : Compiled by author based on census report 1981-91.

Sex ratio is significant demographic and cultural index and can be of value to the population geographers in a discussion of regional characteristics. The sex ratio can reflect the biological, social, economic and migrational characteristics of the population. Social, economic and community life are affected in many ways by large imbalances in sex composition. A great imbalance in the sex ratio would trend to result in a lowered fertility and slower growth. Sex ratio itself is a ratio of three basic factors i) Sex ratio at birth ii) Migration iii) Differential deaths among the two sexes. Another factor may be applied to India is under enumeration especially of women (Natrajan,1972). Sex ratio has a profound effect in other demographic elements like growth of population, marriage rates, occupations etc.

### 3.9.1 Regional Analysis of Sex Ratio :

The Table 3.7 represents that the sex ratio in Pune division is 973 which is higher than (36) that of state (937) in 1981. In this region the highest sex ratio is observed in Satara district (1060) and the lowest sex ratio is found in Pune district (937). In case of rural areas of this region the sex ratio is observed 997 which is more than that of Maharashtra state. The highest sex ratio in rural areas of Pune division is observed in Satara district (1085) and lowest is observed for Solapur district (946). In the same year the sex ratio regarding urban areas within Pune division

is observed 925. It is greater than the sex ratio of Maharashtra state by 75. The sex ratio of urban areas in Pune and Kolhapur districts are found less than 900 remaining all other districts within study region is found more than 900.

In 1991 the average sex ratio in the study region is 968 which is greater than that of state of Maharashtra by 33. It shows decreasing trend from 1981-1991 period. In Satara district sex ratio is found adverse which is 1035 female against 1000 male and it is highest in the study region. It is because of migration of male workers in the developing industrial sector and also decline in emigrants, due to increasing better opportunities of employment. In Kolhapur and Sangli districts the sex ratio is found equal 966, in Pune and Solapur districts the sex ratio is also equal 936 shown in Fig.3.7. In the same year (1991) the average sex ratio in rural areas within the study region is observed 983, it is more than the sex ratio of rural areas of Maharashtra. Within study region in the same year (1991) the sex ratio in rural areas is observed highest in Satara district 1052. It is because of migration of working male population towards urban centres. In all other districts the sex ratio in rural area is found less than 984 and lowest sex ratio is observed in Solapur district that is 933. In case of urban areas of this division in 1991 the average sex

PUNE DIVISION  
SEX RATIO

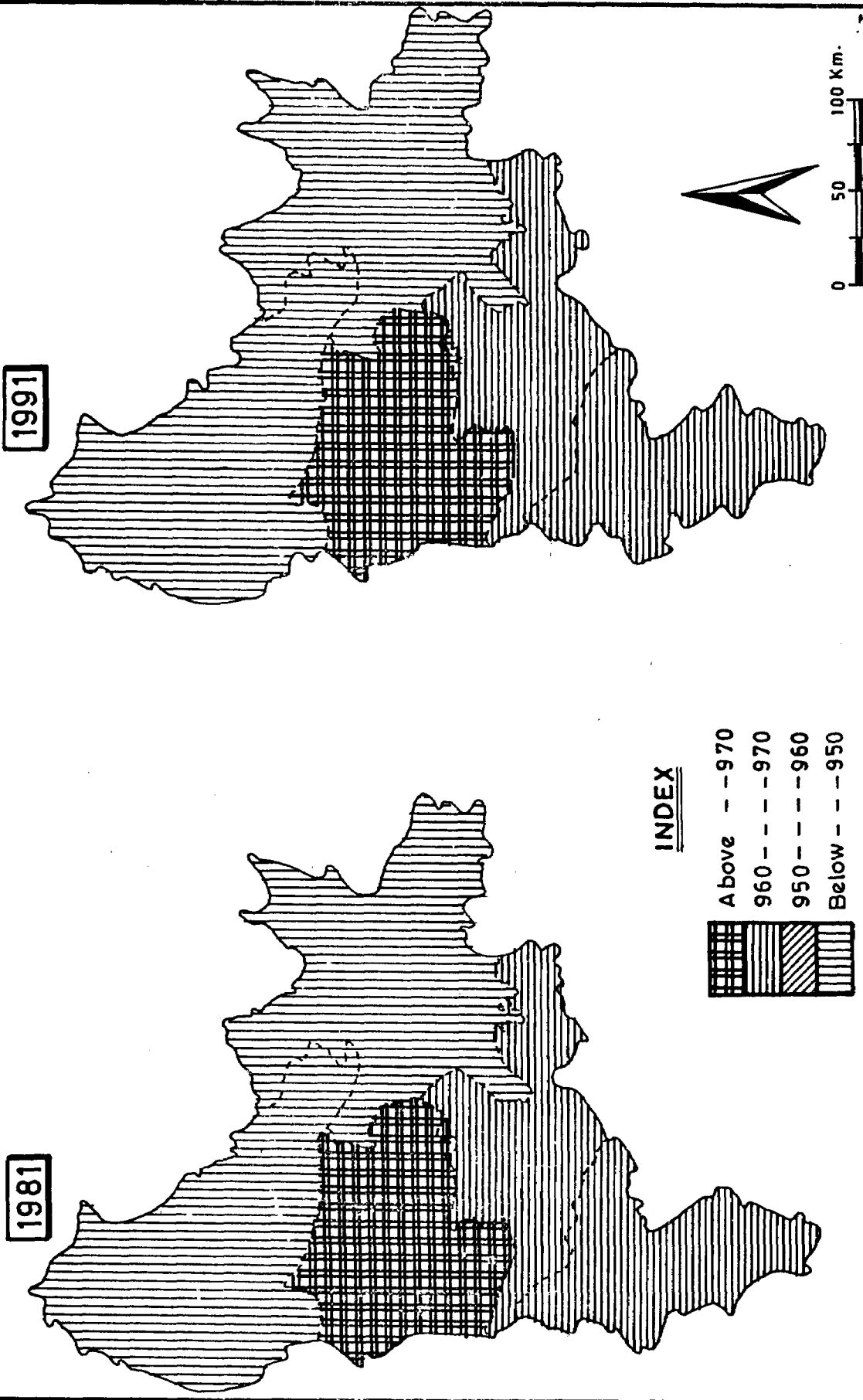


Fig. 3.7



ratio is observed 909 which is more than the urban sex ratio of the Maharashtra state. When it is compare with the sex ratio of rural area of the division it is observed less in 1991. It is observed that the sex ratio within urban areas in all districts is between 906 to 945. It is also observed that there is decrease in sex ratio of this region. The same thing is found in case of Pune, Satara, Sangli and Solapur district but in Kolhapur district the sex ratio in 1991 is increased by 4 during the span of a decade. Above observations clearly show that Pune district has high urbanization and high degree of industrialization while Satara district has low urbanization and low industrialization only agriculture is dominant. The sex ratio is high in those districts where the degree of urbanization is low, agriculture is only important economic activity resulting in male out migration. Due to different socio-economic conditions sex ratio varies from one district to another. Development of secondary and tertiary activities checks male out migration in division and consequently sex ratio is unfavourable.

### 3.10 LITERACY PATTERN :

In the modern context a wide diffusion of education is indispensable for the process of development. A certain minimum level of literacy is therefore the basic requirement for a people to get out of ignorance and backwardness. Any

person who is able to both read and write with some one understanding any language is regarded as a 'literate' according to Indian census (Chandrasekhar,1971). Literacy rate is one of the important demographic elements, which is a good measure of human progress towards moderanization (Chandna,1968). An over all progress in literacy and education is necessary in a country in this context.

Table 3.8 : Literacy rate (percentage 1981-1991).

State/ District	Literacy rate in 1981			Literacy rate in 1991		
	Persons	males	females	persons	Males	Females
Maharashtra	47.18	58.79	34.79	53.77	63.55	43.30
Division	47.02	59.86	33.83	54.21	64.69	43.33
Pune	54.03	65.16	42.14	59.56	68.43	50.06
Satara	48.15	61.39	35.67	55.87	66.96	45.08
Sangli	46.87	59.70	33.60	52.69	62.76	42.17
Solapur	40.68	53.61	26.96	46.25	57.49	34.23
Kolhapur	45.36	59.45	30.79	56.69	67.83	45.09

SOURCE : Compiled by author, based on Census report.

Literacy had a little direct functional value for the traditional subsistence agricultural economy, largely self contained rural life, mainly oral worship religion and feudal system of society as obtaining in country till recent past. Literacy is essential because learning remained the priviledge

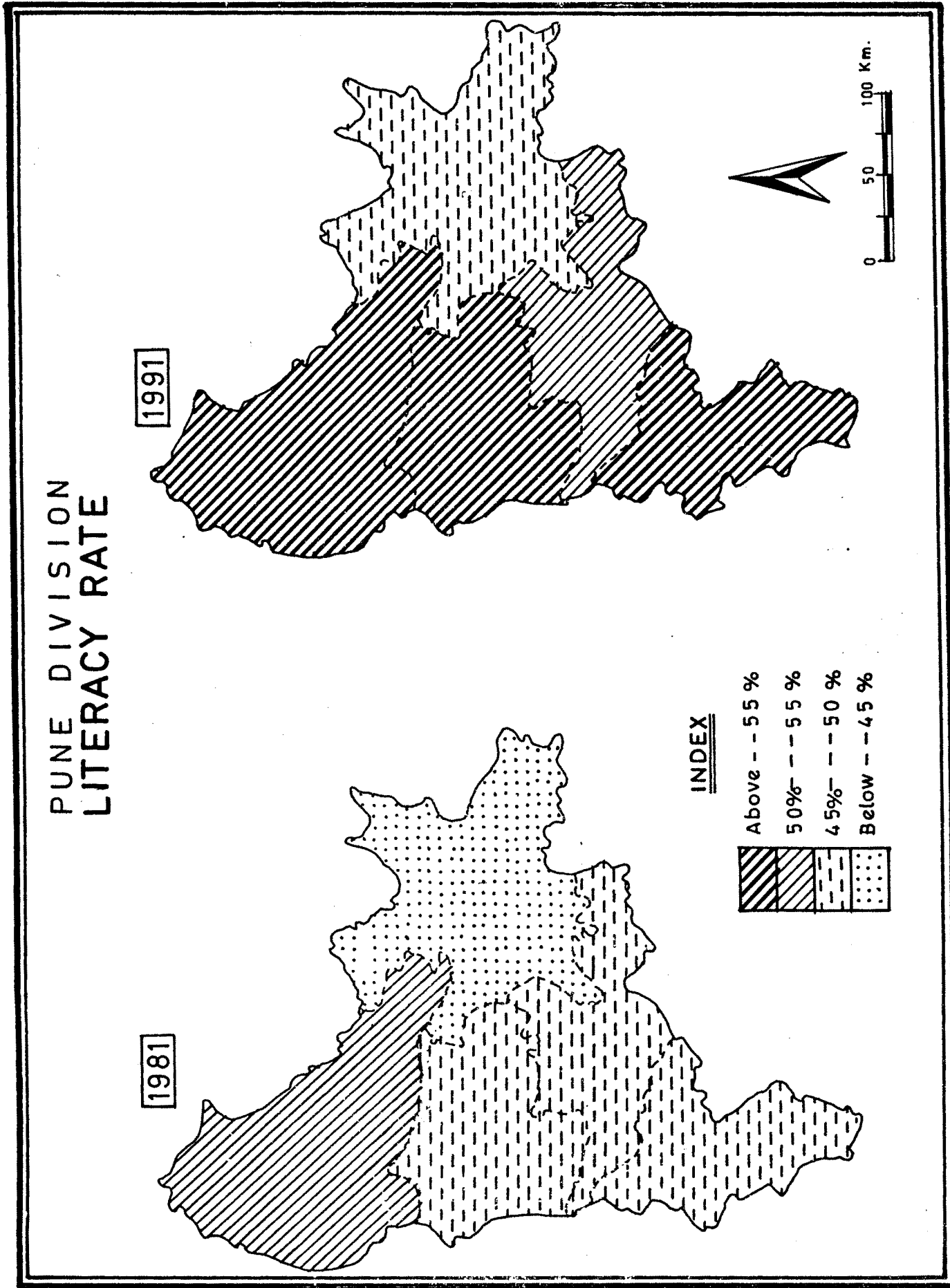


Fig. 3.8

of priestly and business classes for whom reading and writing was an occupational necessity (Gosal,1964). The comparison for compulsory education is of still recent century when the national leaders were espousing the cause of universal literacy. Above all, literacy itself works as vicious circle with illiterate parents not being a sure guarantee to education of their children.

#### Regional Analysis :

The literacy rate of the study region is 47.02 in 1981. It is more than the literacy rate of Maharashtra state (Table 3.8). The highest literacy rate is observed in pune district (54.03%) and lowest rate is observed in Solapur district (40.68%). Other districts of study region are in moderate category as shown in Fig.3.8. The literacy rate of male population in pune division is 59.86 percent, it is also more than that of State of Maharashtra. The highest male literacy rate is found in Pune district, which is more than 65 percent, Satara district ranks second with literacy rate of 61.39 percent. In other districts literacy rate of male population is less than 60 percent. In the same year in case of female population, the divisional literacy rate is 33.83 percent which is less than the percentage of state. The highest female literacy rate is observed in pune district that is more than 40. In remaining all other districts of this division the female literacy rate is less than

40 percent. In the district of Solapur, it is observed 29.96 percent which is lowest in the study region.

In the year 1991 the literacy rate of Pune division is 54.21 percent which has increased by 7.19 percent in the decade. The lowest literacy rate is found in Solapur district. In Pune, Satara and Kolhapur districts, it is found more than 55 percent as shown in Fig.3.8. In the same year, in case of male population the divisional literacy rate is observed 64.69 percent which is more than that of state of Maharashtra. The lowest male literacy rate is observed in Solapur district. It is below 60 percent. In remaining all other districts of this region, it is observed more than 60 percent. The male literacy rate in this decade is increased by 4.83 percent. In case of female population during the year 1991, the literacy rate is observed 43.33 percent in the study region, which is less than that of state. The highest female literacy rate is observed in Pune district (50.06%), and in Solapur district. It is observed lowest (34.23%) as shown in Table 3.9. In the remaining all other districts in this region, the female literacy rate found between 42 to 46 percent. If we compare the female literacy rate of 1991 with 1981, it shows increasing trend.

#### 3.10.1 Rural-Urban Literacy Rate :

In the modern context it is by the position of women society that we judge the progress of a community towards the

socio-economic advancement. There exist a wide disparity in the literacy rate of urban and rural areas.

Table 3.9 : Rural-Urban literacy rate (1981-1991).

State/ District	Rural Urban	Person 1981	Male 1981	Female 1981	Person 1991	Male 1991	Female 1991
Maharashtra	Rural	38.15	51.25	34.88	45.43	56.94	23.60
	Urban	63.92	71.80	54.65	66.99	73.50	59.56
Pune	Rural	42.71	56.34	28.91	50.19	61.64	38.33
	Urban	66.62	74.46	57.75	68.66	74.83	61.83
Satara	Rural	45.41	51.12	32.77	53.87	65.47	42.76
	Urban	66.41	75.28	56.73	69.38	76.44	61.75
Sangli	Rural	43.13	56.57	29.41	49.70	60.50	38.51
	Urban	60.53	70.77	43.39	62.82	70.28	58.82
Solapur	Rural	38.91	48.05	21.03	41.61	53.38	28.95
	Urban	54.55	66.85	41.34	57.75	67.72	47.19
Kolhapur	Rural	39.78	55.14	24.31	52.74	65.15	40.05
	Urban	62.26	71.88	51.51	67.73	75.11	59.67
Division	Rural	41.19	55.04	27.04	49.62	61.23	37.72
	Urban	62.07	71.85	51.34	65.27	72.88	57.85

SOURCE : Compiled by Author, based on Census Report.

The Table 3.9 represents that in the study area in 1981, the rural literacy rate is 41.19 percent and urban literacy rate is 62.07 percent. As compare to Maharashtra, the study region has literacy rate within rural areas found more and within urban areas it is found less. In the study area the highest rural literacy rate is observed in Satara district (45.41%). In Solapur district, the rural literacy rate is found less (34.91%) as shown in Fig.3.9. The highest urban literacy rate is observed in Pune district (66.27%) and lower urban literacy rate is observed in Solapur district (54.55%). Remaining all other districts the urban literacy rate is observed inbetween 60 to 66 percent as shown in Fig.3.10. In the study area the urban literacy rate of male is observed 71.85 percent. It is highest in Satara district and lowest in the Solapur district.

In case of female urban literacy rate in the study area it is observed 51.34 percent and it is less than urban male literacy rate. The lowest urban female literacy rate is observed in Solapur district (41.34%). In Pune, Satara and Kolhapur districts, it is observed more than 50 percent and it is more than that of Maharashtra state. In case of Solapur district it is less than 50 percent and remaining all other districts it is more than 50 percent. In case of female in rural areas of the study region, the literacy rate

PUNE DIVISION  
RURAL LITERACY RATE

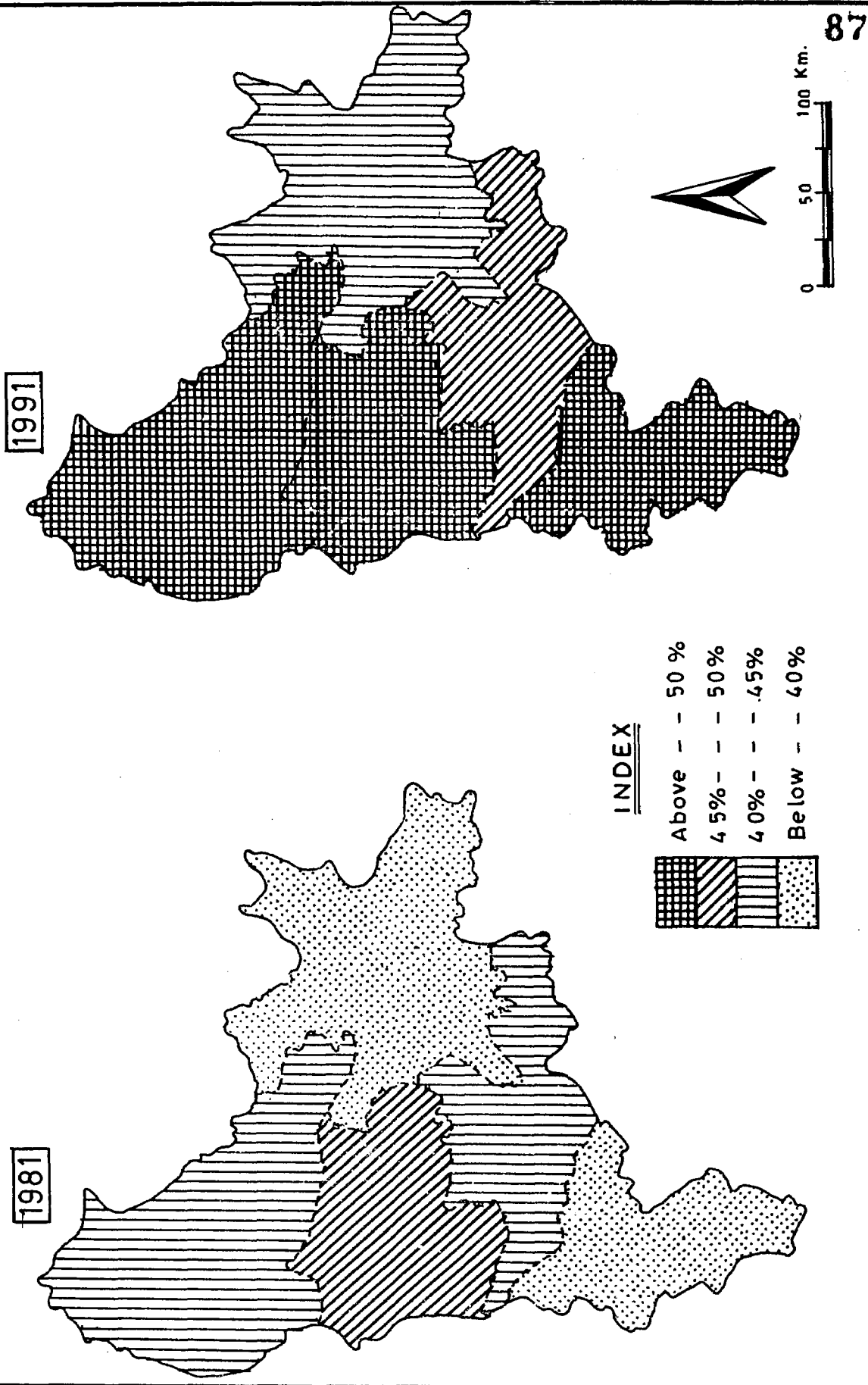


Fig. 3-9



is observed 27.28 percent and it is near about one half of rural female literacy rate of the State of Maharashtra. In Satara district the female literacy rate is highest (32.77%) and in Solapur district it is found lowest (21.03%) as shown in Table 3.9.

In the study area in 1991 the urban literacy rate is observed 65.27 percent, which is near about equal the urban literacy rate of Maharashtra. It is also observed that the literacy rate of rural areas in the study region is 49.62 percent which is more the literacy rate of Maharashtra state, but it is very little than the urban literacy rate. The highest urban literacy rate in this region is found in Satara district (69.75%). In remaining all other districts of this region the urban literacy rate is observed inbetween 62 to 69 percent as shown in Fig.3.10. In case of rural literacy rate of male population within the study region it is 61.23 percent and is more than the rural literacy rate of Maharashtra. Except Solapur district the male literacy rate in rural areas is observed more than 60 percent.

In study area the female literacy rate in rural areas is observed 37.72 percent, which shows the increasing trend. It is more than the rural literacy rate of Maharashtra. In the districts of Kolhapur and Satara the female literacy rate in rural areas is observed more than 40 percent and in the remaining all other districts it is observed less than 40 percent.

PUNE DIVISION  
URBAN LITERACY RATE

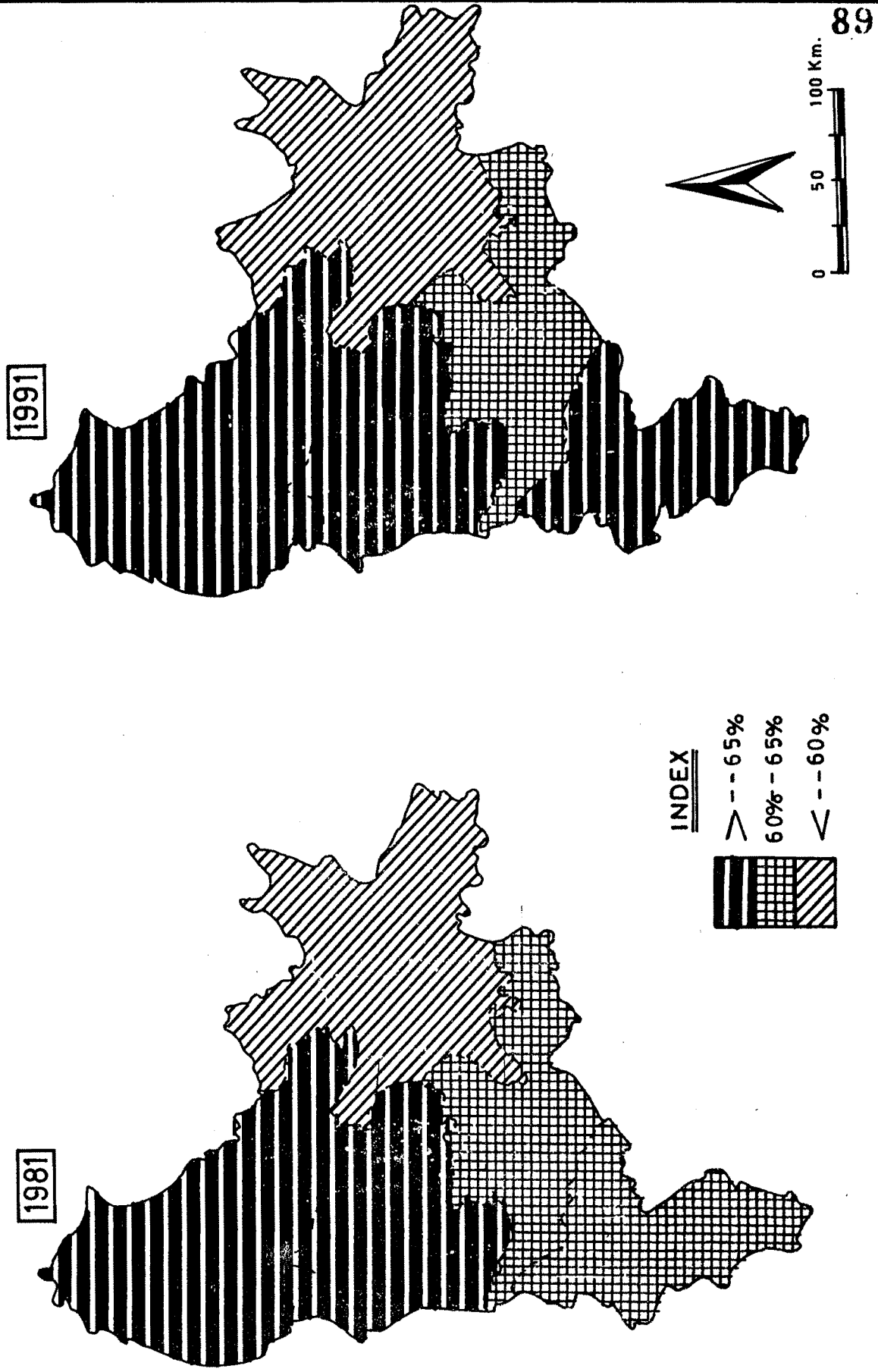


Fig. 3.10

### 3.11 DISTRIBUTION OF SCHEDULED TRIBES POPULATION :

In 1981 out of total population of 62,784,171 persons 5,772,038 were enumerated as Scheduled Tribes, they constituted 9.19 percent of the total population. According to 1991 census, out of total population of 78,937,487 in Maharashtra 7,318,281 belongs to the category of Scheduled Tribes. They constitute 9.27 percent of total population in the state. Thus the proportion of the Scheduled Tribes to the total population in the state has remained more or less constant.

Table 3.10 Rural-Urban Scheduled Tribes population  
(percentage 1981-1991).

State/ District	Percentage of S.T. rural and urban population to total population in 1981			Percentage of S.T. rural and urban population to total population in 1991		
	Total	Rural	Urban	Total	Rural	Urban
Maharashtra	9.19	12.67	2.74	9.27	13.24	2.99
Division	1.65	2.27	0.85	1.43	1.94	0.91
Pune	3.81	6.41	0.92	3.91	6.52	1.38
Satara	0.64	0.66	0.48	0.75	0.75	0.75
Sangli	0.85	0.92	0.59	0.49	0.54	0.30
Solapur	1.98	2.04	1.83	1.50	1.34	1.88
Kolhapur	1.09	1.30	0.45	0.49	0.58	0.25

SOURCE : Compiled by author, based on Census Reports.

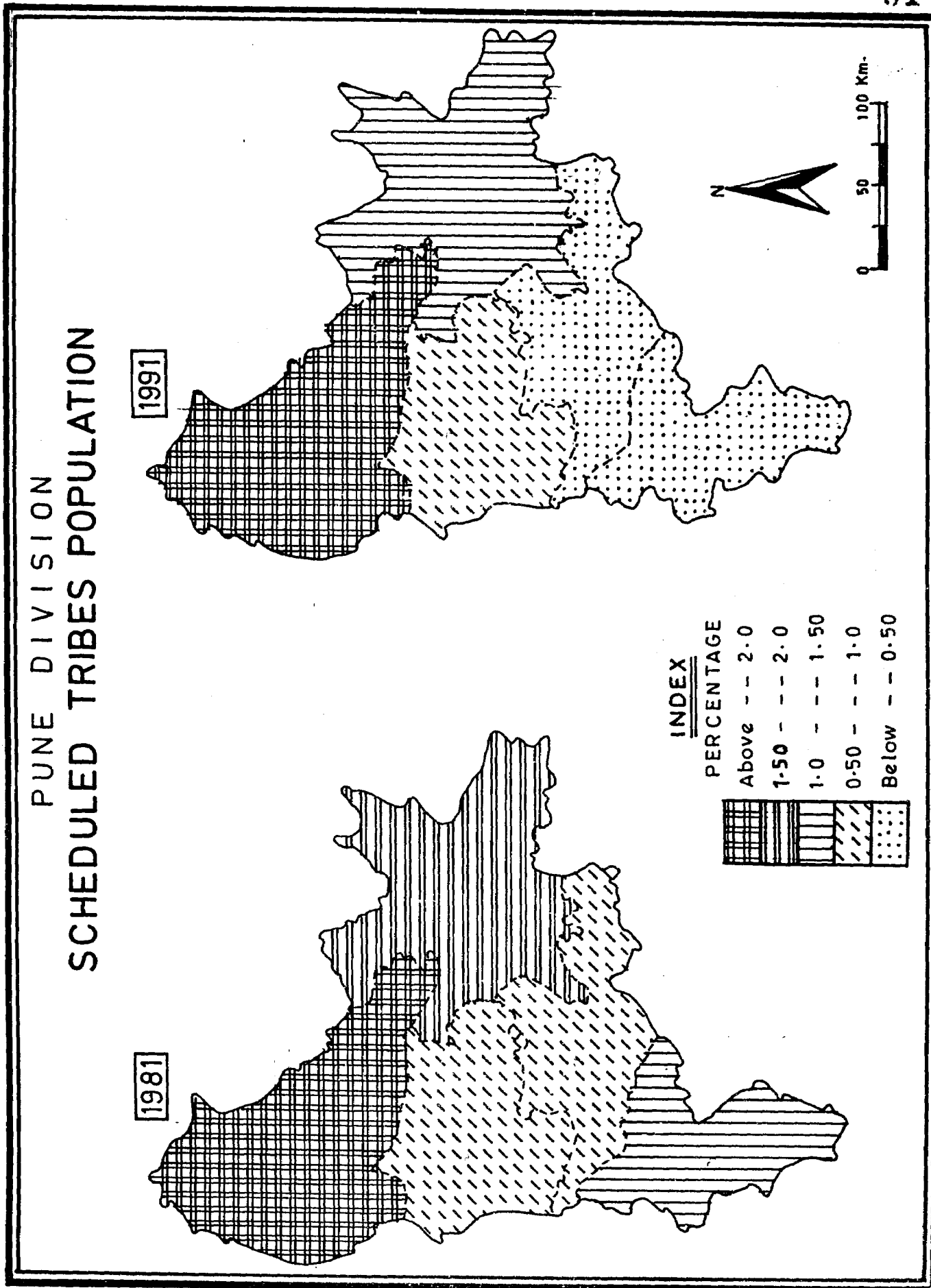
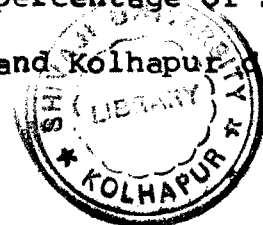


Fig. 3.11

Regional Analysis :

From the Table 3.10, it is observed that in the year 1981 Pune division shared 1.65 percent of the state Scheduled Tribes population while in the year 1991 it decreased upto 1.43 percent. In the same year (1981) percentage of Scheduled Tribes population in the study region is less than that of Maharashtra state, the same thing is found in 1991 also. In Pune division in 1981 the highest percentage of Scheduled Tribes population is observed in Pune district (3.81%) and lowest percentage of Scheduled Tribes population in Satara and Sangli districts and moderate in Solapur district as shown in Fig.3.11. In case of percentage of Scheduled Tribes population in the study region is observed 2.27 percent which is very less than that of state of Maharashtra. In 1991 the percentage of Scheduled tribes population in study region is observed 1.94 percent, it is also less than the percentage of Maharashtra. In 1991 the percentage of Scheduled Tribes rural population in study region is observed 1.94 percent, it is also less than the percentage of Maharashtra. In case of Maharashtra state the percentage of Scheduled Tribes rural population shows increasing trend, but in the study area it shows decreasing trend. In 1991 the percentage of Scheduled Tribes rural population is highest in Pune district (6.52%) and lowest percentage is observed in Sangli district (0.54%). The percentage of S.T. rural population in 1991 in Satara, Solapur, and Kolhapur district



is varying between 0.58 to 1.34 percent. In case of percentage of Scheduled Tribes urban population in 1981 it is observed 0.85 percent in the study region and in 1991 it is increased upto 0.91 percent. The percentage of Scheduled Tribes urban population is less than the state of Maharashtra during both the years. It is also found that the percentage showing the increasing trend (0.81, 0.91%). In 1981 only in Solapur district the percentage of Scheduled Tribes urban population is found above one percent and remaining all other districts, it is observed less than one percent. In 1991 the percentage of S.T. urban population in Pune and Solapur districts, is observed more than one percent. In the remaining all other districts it is observed less than one percent.

### 3.12 DISTRIBUTION OF SCHEDULED CASTES POPULATION :

The distribution of Scheduled Caste population carries all characteristics of main body of population. The natural and cultural factors affect on the distribution of Scheduled Castes population. Generally the factors influencing the general distribution of population. There is only one factor which has its own characteristics. It is the allocation of the duties of different Scheduled Castes. The Scheduled Castes population is a component of the entire population in India.

**Table 3.11 : Rural-Urban Scheduled Castes population  
(1981-1991 percentage).**

State/ District	Percentage of rural urban S.C.population to total population in 1981			Percentage of rural urban S.C.population to total population in 1991		
	Total	Rural	Urban	Total	Rural	Urban
Maharashtra	7.14	7.12	6.43	11.09	11.47	10.50
Division	9.65	10.16	10.19	12.33	11.81	12.87
Pune	7.54	5.64	9.64	11.41	8.22	14.50
Satara	6.21	5.90	8.29	9.51	9.24	11.29
Sangli	11.16	11.10	11.34	12.56	12.33	13.34
Solapur	11.29	15.59	11.17	12.41	15.89	14.23
Kolhapur	12.06	12.59	10.50	12.75	13.37	10.99

**SOURCE :** Compiled by author, based on Census Report.

**Regional Analysis :**

From Table 3.11 it is observed that the percentage of Scheduled Castes population in 1981 is 9.65 percent, in pune division it is more than the state percentage. In 1991 it shows increasing trend (11.81%). In Pune and Satara districts the percentage of Scheduled Castes population is observed low, whereas in other districts it is observed more as shown in Fig.3.12.

# PUNE DIVISION SCHEDULED CASTES POPULATION

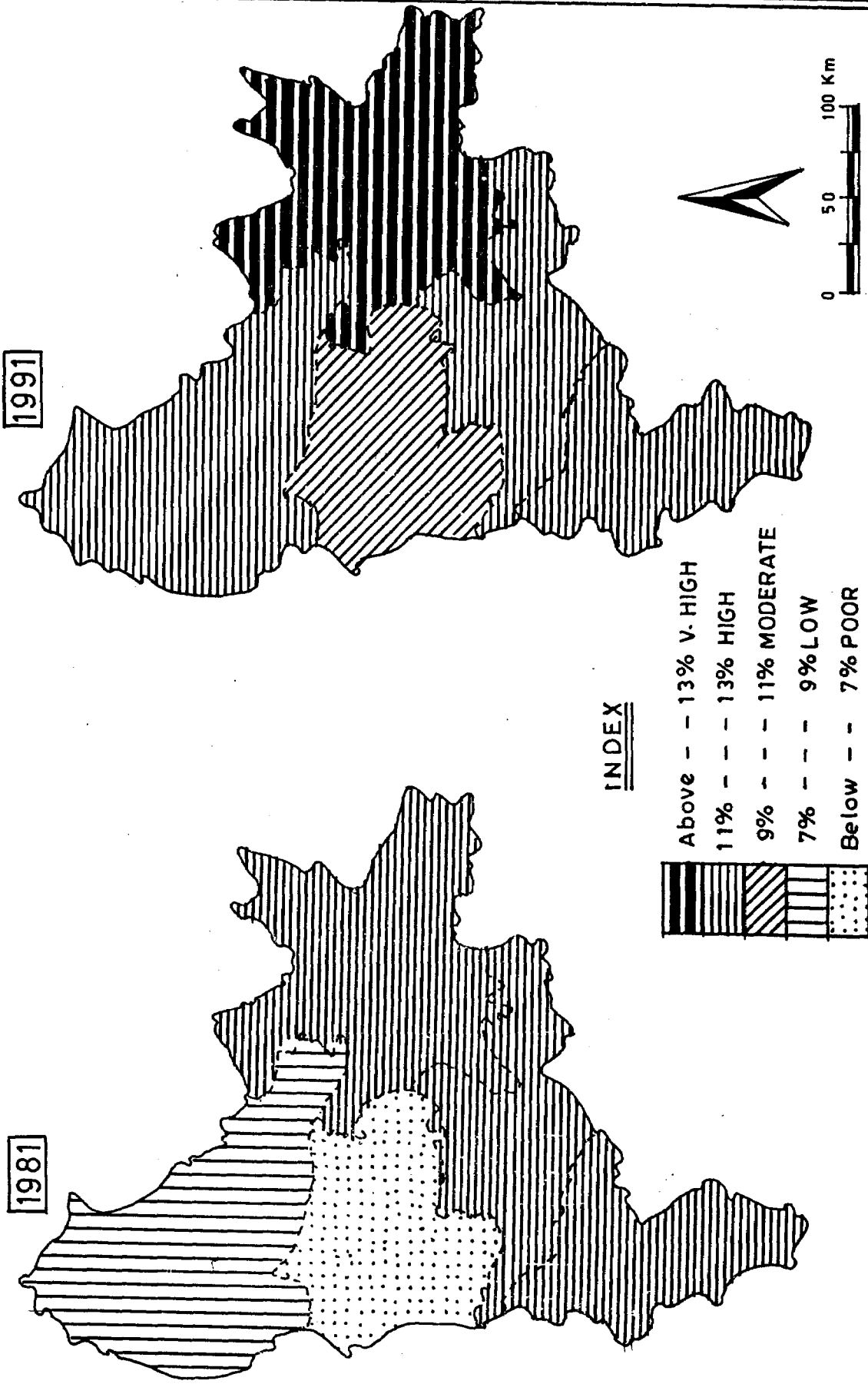


Fig. 3.12



In case of percentage of rural Scheduled Castes population in 1981 the division has observed 10.16 percent Scheduled Castes population, which is more than state percentage. In Solapur district have observed highest percentage of Scheduled Castes population (15.59%) and, Pune district have observed lowest percentage of Scheduled Castes rural population. In 1991 the rural Scheduled Castes population percentage is showing increasing trend which is near about equal to the percentage of state. In the same year Pune and Satara districts have observed less than 10 percent of rural Scheduled Castes population and in remaining all other districts it is observed more than 10 percent.

There exists wide disparity in the percentage of Scheduled Castes of urban population in the study region is observed (10.19%) and in 1991 it shows increasing trend (12.87%). In both the year this percentage is higher than the percentage of state in 1981 the highest percentage of Scheduled Castes urban population is observed in Sangli district (11.34%) and lowest percentage is observed in Satara district (8.29%). In other districts it is observed inbetween 9.64 to 11.17 percent. In 1991 the percentage of urban Scheduled Castes population is observed more than 10 percent. In the study area Pune district have observed highest percentage (14.50%), Kolhapur district lowest percentage (10.99%) of Scheduled Castes population in 1991, it shows increasing trend.

A progressive change in Scheduled Caste population of 1991 is seen as compared with the Scheduled Castes population of 1981 (Fig.3.12).

### 3.13 MIGRATION :

Population Geography is concerned with demonstrating how spatial variations in growth, distribution and composition of population are related to the spatial variations in the nature of places. Spatial variations in a population, no doubt, are a functions of a host of physical, economic and cultural factors. They operate through dynamic of population change. Migration is defined as a permanent or semipermanent change in residence involving some distance from one's community (Zelinsky,1971). Besides of fertility and mortality, population migration is the only source of regional variations in population over space and its composition. Migratory movements are products of social, cultural, economical, political and physical circumstances in which individuals and societies find themselves. It is thus a response of human organism to economic, social and demographic forces in the environment. Population mobility has increased with technical and economic progress. Each movement provides an important network for the diffusion of ideas and information (Kailash Matho,1984).

Economists are interested in the study of migration because it is related to business to supply of skilled and

and unskilled workers, to growth of industries, employment and occupational status of the migrants planners and policy makers concerned with migration (Bhende,1978). According to the Indian census, it is seen that migration is solely by the concept of places of birth. Migration is determined by the places of birth. Migration is the most fundamental to the understanding of everchanging space content and space relation at an area. It is an instrument of cultural diffusion and social integration and result is more meaningful redistribution of population. Its impact is three fold. (1) on the area of in-migration (2) on the area of out-migration (3) on the migrant themselves.

### 3.13.1 Methodology :

The present study is concerned with population mobility. The migration data is not directly available for analysis of migration patterns. Only statistical information is available. For this purpose there is the place of birth data, unfortunately this data is not available for an areal unit smaller than district, Therefore, it is very difficult to show the spatial patterns of the migration with smaller unit.

Some of the scholars have estimated internal migration with the help of percentage of total population in minority linguistic groups. The data related to labour

force migration cross classified by age and level of education. Migration records are probably the least satisfactory of all population data, partly because the collection is poorly organised and partly because population is inherently difficult to standardize in unit for counting. Migration is a vague statistical concept with few information criteria to determine who is migrant and who is not. Hence, in the present work we have used some techniques to identify the migration patterns of the district by secondary data source.

In the area under study we have to identify the out migration and immigration pattern of pune division at district level. The migration of a district is determined with the help of the difference between natural increase and actual increase of the population in a particular district at a given period. The actual increase is measured with the help of the difference between the two population counts in the beginning and at the end of the period. While the natural increase is measured with the help of the difference the average total number of births and deaths in a study period.

$$\begin{array}{llll}
 P_2 - P_1 = & \text{Actual increase of population} & \dots & \text{I} \\
 B - D = & \text{Natural increase of population} & \dots & \text{II} \\
 P_1 = & \text{Population of the district in} & & \\
 & \text{1981} & \dots & \text{III} \\
 P_2 = & \text{Population of the district in} & & \\
 & \text{1991} & \dots & \text{IV}
 \end{array}$$

B = Total birth recorded in district during 1981-91 ... V

D = Total deaths recorded in the district during 1981-91 ...VI

If  $(P_2 - P_1) > (B - D) =$  in-migration

$(P_2 - P_1) < (B - D) =$  out migration (Bhende 1978).

Table 3.12 : Migration in study area.

Sr. No.	State/ District	Actual increase ( P <sub>2</sub> - P <sub>1</sub> )	Natural increase ( B-D )	Remark out migration in-migration
1	Maharashtra	16153316	12708936	in-migration
2	Pune	1368062	874140	in-migration
3	Satara	412695	441247	out migration
4	Sangli	378276	366775	in-migration
5	Solapur	620913	688215	out migration
6	Kolhapur	483177	481311	in-migration

SOURCE : Compiled by the author, based on 1981, 1991 Census data.

### 3.13.2 Identification of out immigration

at district level :

The region under study is Pune division and the period 1981-1991. A comparative study of the distribution of total and immobile population among the districts has a great relevance in ascertaining the shift in levels of population mobility. Above

table clearly shows the immigration and the out migration of the districts. In the study region Pune, Sangli and Kolhapur districts show immigration while Satara and Solapur districts show out migration. The state of Maharashtra shows immigration.

As compared to the district immigration and out migration, Pune district shows higher immigration in the division. The distribution and share of immigration as compared to state, Pune district has 14.33 percent immigration whereas Sangli district share is 0.33 percent of share to the state immigration. The share of immigration of Kolhapur district is negligible. On the otherhand Solapur and Satara districts show out migration. In the study region Solapur district recorded a large scale out migration while Satara district has observe small scale out migration. Solapur and Satara districts are drought prone areas of Maharashtra due to scanty rainfall the agricultural production is uncertain hence most of the people out migrate sesonally or permanently.

### 3.13.3 Causes of out migration :

The region under study has following important causes for the out migration of population.

- (1) Solapur and Satara districts show out migration in the period 1981-91. Above two districts are under constraints

on the regional development due to adverse relief and it is the major cause for pushing the population out in the study region.

- (2) In the Satara district eastern part Man, Khatav, Phaltan and Khandala are the talukas have affected drought prone areas. So goodgrains are not sufficient and also water problem is serious, so that people migrate to another region in search of work.
- (3) In the Solapur district 70 percent area is under drought prone, so there are a number of problems such as drinking water, foodgrain. So people migrate to another region.
- (4) The region is abutted by backbone of Sahyadris terraces and bears a much dissected appearance on account of rifts and erosion by upgraded streams. The plain is also interrupted by parallel and transverse series of hills, which reach the plateau, thus denying the plain of uniform level and continuous character. The plain is drained by parallel streams which bring about vast eroded material from their upper reaches and deposit it in the lowest zone that is above the plateau level.
- (5) According to the levels of economic development Satara and Solapur districts clearly show low level of development so that these districts show out migration.
- (6) Occupational structure clearly shows that Satara and Solapur districts are under the dominance of primary sector economy.

Above causes are responsible for out migration of population from these two districts.

#### 3.13.4 Causes of in-migration :

In the study region Pune, Sangli and Kolhapur districts have immigration. The causes of immigration are as follows.

- (1) As compared to eastern and western part of Kolhapur, Sangli and Pune districts central part of above districts have more irrigation and consequent intensity of farming influences immigration flow of the above region. Krishna and Bhima basin are irrigated. This attracts agricultural workers in the region.
- (2) Industrialisation is considered to be the key factor to economic development, and hence without it, the development of agriculture, commerce and trade and transportation and communication will almost be impossible. Study region has made considerable progress in industrial development occupies important place on the industrial map of the state. The major industries are around the cities large and small industries are developed at many urban centres. In Pune district number of industries are well developed in Pimpri Chinchwad industrial belt.
- (3) Various other technical projects have been developed in the region, this technical development have created many employment opportunities for which people from other part immigrate.
- (4) The development of industries and transport facilities mainly connected with Bombay, Bangalore and other cities



have created many employment opportunities in trade. Commercial horticultural cropping pattern is also an attraction for immigration. In the study region each district have a dominance of horticulture. Agricultural production provides trade opportunity in the region.

### 3.14 CONCLUSION :

The salient feature of the study of changes in population character reveals several out standing characteristics. In respect of population growth, it is observed that higher growth of population is found in Pune district while Sangli and Satara districts records low growth of population. In respect of density of population in the year 1981-91 Kolhapur district records highest density in the study region, while lowest density is observed in Satara, Solapur and Pune districts shows increase in the density of population in 1991 year. The study urban-rural population distribution shows that Pune district has more urban population in 1981-1991 span of period. While Satara district shows poor urbanization and moderate urbanization is observed in Sangli, Solapur and Kolhapur districts. Surprisingly Satara district shows decline in urban population in 1991 by one percent. Same is the case with Solapur and Kolhapur districts. This decline in the urban population is due to declassification of some of the small town of these areas. The analysis of birth and death

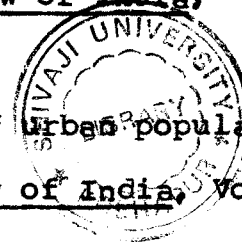
rate of population reveals that in 1981, most of the districts have same birth rate as that of the Maharashtra state. Only Solapur district shows higher birth rate surprisingly the urban population of Satara district is very low but urban birth rate is highest in the study area same trend is continued in 1991 year. Rural birth rate of the study area is nearer to the state birth rate in all most all the districts. The analysis of death rate indicates that death rate of urban population in Sangli district is very high as compare to other areas of the study region. Rural death rate in all the districts of study area is nearer to average death rate of the division. The observation shows that the sex composition of total population is very high for Satara district for 1981-1991 period. All remaining areas have comparative low sex ratio is observed for Pune district followed by Kolhapur, Sangli and Solapur districts. The impact of industrialization and migration of male workforce in Pune district is responsible for this imbalance. On the other hand out migration of male population of Satara district is responsible for high sex ratio. The analysis of literacy pattern shows close association with development of region progressive highly urbanized Pune district has higher percentage of literacy. Solapur district shows low percentage of literate population. The distribution of Scheduled Castes population and Scheduled Tribes population indicates that more percentage of Scheduled Tribes population is concentrated in

urban areas of Pune district, while in respect of Scheduled Caste population more percentage is found in Kolhapur district followed by Sangli, Solapur, Pune and Satara districts. Migration is very much related to economic development of region industrially developed areas of Pune, Sangli and Kolhapur districts have immigration of working population. Highest immigration is observed in Pune district. On the other hand Solapur and Satara districts show out migration, where highest out migration is from Solapur district. This is because of low economic development in the region, drought conditions and poor agricultural development.

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