SPATIO-TEMPORAL CHANGES OF POPULATION OF SANGLI DISTRICT

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CERTIFICATE

This is to certify that the thesis entitled, ***"SPATIO-TEMPORAL CHANGES OF POPULATION OF SANGLI DISTRICT".*** *Which is being submitted herewith for the award of the Degree of Vidyavachaspati (Ph. D.) in Geography of Tilak Maharashtra Vidyapeeth, Pune is the result of original research work completed by* ***Mr. Dhananjay Bhimrao Karnik*** *under my supervision and guidance. To the best of my knowledge and belief the work incorporated in this thesis has not formed the basis for the award of any Degree or similar title of this or any other University or examining body.*

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DECLARATION

I hereby declare that the thesis entitled ***"SPATIO-TEMPORAL CHANGES OF POPULATION OF SANGLI DISTRICT"*** *is the original research work carried out by me under the guidance of Dr. T. M. Varat, Head, Department of Geography, New Arts Commerce and Science College, Ahmednagar for the award of Ph. D. degree in Geography to the Tilak Maharashtra Vidyapeeth, Pune. This has not been submitted previously for the award of any degree or diploma in any other university.*

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CHAPTER – 1
INTRODUCTION

1.0 INTRODUCTION

Population geography is a systematic branch of geography. It lays emphasis upon regional differentiation of areas in terms of their population. It dose not study man as phenomena itself but as on area characterizing and area differentiating element (Ghosh, 1985).

The core of geography is formed by the distribution and nature of physical and cultural factors over the surface of the Earth. Man being the most important factor on the earth, the studies related to distribution of people and their characteristics become most important.

According to Chandna (1996), in modern geography, nature and distribution of physical and cultural factors are studied. As well as in particular region, particular type of physical and cultural environment prevails should given stress on. This means that stress is given on cause effect relationship. In study of man and environment relationship, it is essential to know the characteristic of human group.

Ghosh (1985) stated that man is the main focus of study in population geography in addition to the conclusion of man's culture, his economic activities and his general distribution at present or in the past there exist a need for better understanding of spatial effects of population. Similar to the distribution of any other natural resources, the distribution of population on the

surface of the earth is uneven. The uneven distribution of population influences various aspects of human life.

According to Chandna (1996), it is essential to study distribution of population since it influences the future plans for development, political moves and rate of development. The concept of density of population is related to population size to the land area with a view of assessing crudely the pressure of population upon the resources of the area. The objective of course, has been arrived for a better understanding of the population resources relationship.

In the study of the growth of population, it is essential to study psychological aspects such as attitude of people towards family planning, study of population problem along with number, it is also necessary to consider resources that are available in the region. The size and composition of population decide the nature of production. Growth of population is influenced by economic factor such as standard of living and per capita income. Migration aspects of population are influenced by political set up and Government Policies.

Population geographer gives prime importance to sex composition. The separate data for males and females are important for various types of planning and for the analysis of other demographic characteristics such as fertility, mortality, migration, marital status, economic characteristics etc. Chandna (1996) concluded that the balance of sexes play partly contrasting and partly complimentary role in the economy and society, the study of sex composition assumes added significance for a population geographer.

According to population geographers, literacy is a main qualitative attribute of population which is a fairly reliable index of socio cultural and economic development of an area. The trends in literacy are indicative of the pace at which the society of the region is getting transformed. Chandna and Sidhu (1980) stated that Literacy is essential for eradicating poverty, removing mental isolation, cultivating peaceful and friendly relation and also for promoting a free play of the democratic process, hence literacy for a region, is essential for its economic development, social advancement and democratic change. Apart from this, literacy influence various other democratic attributes like fertility, mortality, economic pattern etc.

In a geographical analysis of population change, migration holds a prominent place. Gosal (1961) stated that it is most fundamental to the understanding of continuously changing space content and space relationship of an area. The trends in migration have also been considered as sensitive index of changing pattern of economic opportunities in an area.

Chandna (1996) stated that the occupation of individual refers to his trade, profession or the type of work. Population geographer's analysis the lively hood patterns of an area which reveals its diverse economic, demographic and cultural characteristics. It provides background knowledge for formulating plans and programmes for its social and economic development.

1.1 REVIEW OF LITERATURE

Reference has been made to various seminal works on this topic executed at the international, national and regional level by various geographers and social scientists. This has helped to clarify the concept and to obtain a better understanding of the research.

Prakash (1970) containing to the countries most populous state of Uttar Pradesh has mapped tehsil and district level data to analyze the pattern of density and distribution of population. Ghosh (1970) and Kumar (1971) have separately studied The Distributional pattern of Bihar's population. Hiremath and Karennavar (1978) looked in to the pattern of land utilization in relation to population density and some other variables. Das (1979) made a study of "population pressure and intensity of cropping in Assam''. Chandna (1980) made a detailed analysis of distributional pattern of scheduled caste population in India. Gill (1980) discussed distribution and density of rural population in Hissar district (Hariyana) in 1971. Mehta and Matharao (1980) made a detailed study of population in Bist Doab (Punjab).

Understanding of growth trends of population is important for any meaningful socio- economic planning of an area. However, studies on population growth in India face certain data. Singh (1970) has mapped the growth patterns in Uttar Pradesh, Mishra (1970) in Ganga- Ghagra Doab and Singh (1969) has analyzed the net migration and migration tendencies of rural population of Hissar district (Hariyana). Above three studies dealing mainly with growth of population at regional and local levels. Sawant and Khan (1982)

examined factors responsible for the natural growth rate of population in Western Maharashtra. Gill (1982) made a study of population growth in Hissar district during 1951-71.

Literacy is a crucial factor in demographic and socio-economic transformation. Krishan and Shyam (1977) made a comprehensive study of literacy in India. In another study Krishan and Shyam (1978) discuss in detail the rural-urban differentials in literacy. Siddique (1977) focused on literacy patterns in Uttar Pradesh. Gosal (1979) analyzed in detail the spatial patterns of literacy in India. Dutta (1982) examined pattern of literacy in Southern district of West Bengal. Shashikala (1982) examined changes in literacy patterns of Indian cities during 1921-71.

Sex-ratio is very significant attribute of population. Apart from its impact on fertility, it also determines the socio-economic pulse of a people. Ayyar and Srivastava (1978) focused on urban sex ratio of Madhya Pradesh. Sex-ratio at birth, male- female differential in mortality, and migration studies by Chandna and Sidhu (1979). Pednekar and Sita (1980) analyzed spatial patterns of sex-ratio in South Konkan (Maharashtra) during 1951-71. Siddhique (1982) made a study of regional aspects of sex-ratio in Uttar Pradesh.

The studies on working force and occupational structure, despite their importance for planning socio-economic development, Krishari (1981) analyzed in detail the spatial variations in the proportion of non-agricultural workers in rural India. Chander (1981) examined pattern of working force in India in 1971. Gill (1981) discussed changes in occupational structure of rural

population of Hissar district during 1951-71. Kaur (1982) made a comprehensive analysis of changes in occupational structure of India during 1961-71.

Population study is a part and parcel of any regional study, because population is the great resource among all the resources. The disparity in spatial development in economy of the region is the combined result of natural environment, its resources and existing demographic structure and spatial pattern of population of the region. It is indeed that through analysis of population feature an applicant of regional differences can be fully made. An analysis of various aspects of population, i.e., growth, distribution, density, sex ratio, literacy, occupational structure and urbanization etc. provides a clear understanding of the problems in the region which must be taken for rational, regional and inter-regional planning.

Population differs from area to area not only in terms of their number, but also in terms of all their biological, socio- economic, cultural and dynamic aspects. The determinants of population characteristics have spatial variation. The study of population, as a specific population geography, is basically concerned with the spatio-temporal variations in different aspects of population. This type of study is helpful to suggest comprehensive planning for a region.

1.2 CHOICE OF STUDY REGION

The Maharashtra state is one of the progressive states of India and is divided in six administrative divisions and one of them is Western

Maharashtra. This administrative division includes 5 districts i.e. Pune, Satara, Kolhapur, Solaplur and Sangli. The present research problem is concerned with Sangli District.

To ensure the coherence and close interconnection of interdisciplinary research and to strengthen the philosophical underpinnings of the relationship between social and natural sciences towards a better understanding of the man-environment system. Geography is one of the few sciences, which has bridged this discontinuity between the natural and social sciences. This connecting position holds out possibilities for potential researchers to work in various fields of demographic analysis and planning, which are in themselves multidisciplinary. Thus the following research work is associated with and will find relevance demography.

It is believed that a distinct demographic profile, emerging from the present research will help formulate a population policy for Sangli District.

The choice of the study area and importance of the topic is the result of several considerations given as under.

1) It is one of the most dynamic and variable region in population characteristics.
2) Within the study area there is a spatial variation in Growth, Sex ratio, distribution and density, literacy and occupational structure of population.
3) The region has varied problem relating to the population growth and pressure which are challenges for planners and researchers.

4) It is felt that study of population pattern and population temporal changes offer a helpful approach for solving various problems related to the planning and development of the area.

1.3 STUDY REGION

Sangli district is one of the important Southern districts of Maharashtra. On the western part of it, River Krishna runs North-West to South-East and the other two rivers namely Man and Bor flows in the eastern part of district. The Sangli district is located between 16^0 45'to 17^0 33'North latitude and 73^0 42' to 75^0 40' East longitude occupying 8572 sq.km. area. The total population of Sangli district is 25, 83,524 according to 2001 census. The density of population is 301 persons per sq. km. The height of western part of district is 700 to 1100m. from the mean sea level. The highest plateau namely "Jat Plateau" lies in eastern part of district whose height is of about 600 to 800 m. from mean sea level. In the district, there are two major river basins that are Krishna basin and Man basin. Its height is of about 500 to 600m. from mean sea level. The proportion of rainfall goes on decreasing from West to East; it is 500mm to 200mm. There are eight tahsils (2011) and 724 villages in all.

1.4 OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

1. To the study the Physical setting of the study area.
2. To study the distribution and density of population in the study area.
3. To examine the spatial and temporal changes in the sex ratio within study area.
4. To analyse the spatio-temporal change of literacy in the study area.

5. To study the occupational structure of the study area.

1.5 DATA SOURCE

As census data is reliable and accurate the said has been used for this study, The nature of data is secondary in character. However, before using for data it is necessary to get familiarized with the used by for census.

The present study was partially based on secondary data. Therefore, required data was collected from the following main sources:

i) District Census hand books of Sangli District from 1981 to 2011.

ii) The data sources like newspaper, magazines and journals etc.

iii) Government of Maharashtra, Socio-economic Review and District Statistical Abstracts of Sangli district (1981-2011).

1.6 METHODOLOGY

The spatio-temporal changes of population of Sangli District will be studied. Tehsil is the main unit of study. In the present study the collected data will be tabulated and analyzed by using various cartographic techniques. Wherever, necessary data were represented with the help of suitable cartographic techniques like line graph, pie chart, bar graphs, choropleths, proportional circles etc.

Ratio of urban-rural population is also a popular measure adopted in census surveys in India.

Population Density of study area is calculated to analyze man-land ratio by using Density equation given below:

1. Arithmetic Density = $\frac{\text{Total Population}}{\text{Total area}}$

2. Rural Density = $\frac{\text{Total Rural Population}}{\text{Total Rural Area}}$

3. Urban Density = $\frac{\text{Total Urban Population}}{\text{Total Urban Area}}$

4. Physiological Density = $\frac{\text{Total Population}}{\text{Gross Cropped Area}}$

The sex ratio has been calculated as number of females per thousand males. The sex ratio obtained by using following formula that yield females per thousand males:

1. General Sex Ratio = $\frac{\text{Total female population}}{\text{Total male population}} \times 1000$

2. Rural Sex Ratio = $\frac{\text{Total rural female population}}{\text{Total rural male population}} \times 1000$

3. Urban Sex Ratio = $\frac{\text{Total urban females population}}{\text{Total urban male population}} \times 1000$

The literacy rates analyzed to show general, rural, urban, male and female population literacy.

The maps used in research work are generated with help of Global Mapper 13 and CorelDraw 13.

1.7 DESIGN OF RESEARCH WORK

The First chapter seeks to present the review of literature, source of data, methodology, and objectives of the present research work.

Chapter second focuses attention on the physical profile of the study region.

Chapter third deals with distribution and density of population of the Sangli District.

Chapter fourth deals with growth of population of the Sangli district.

The fifth chapter deals with the Sex ratio of the Sangli District.

Chapter sixth deals with the magnitude of literacy of Sangli District.

Chapter Seventh deals with the occupational structure of Sangli District.

And the last eighth chapter deals with the summary and conclusion.

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CHAPTER – 2
PHYSIOGRAPHY

2.0 INTORDUCTION

Sangli district is almost an epitome of the whole Maharashtra, except for seashore. It also represents almost every aspect of Maharashtra's geographical, industrial and cultural status. In the field of rural development, the district has witnessed outstanding leadership of a National status. In Historical period Satavahanas, Vakatakas, Chalukyas, Rashtrakutas and Yadavas had direct rule over this area as can be seen from the literary references to adjacent areas. The Rashtrkutas of Manpur (Satara district) might have direct rule over this region as Sangli district is closely situated. The Southern Shilaharas had direct rule over this region is cleared from their copperplates.

In the post –Yadav period Bahamani's were ruling over this area. This region was under the jagir of Bahaman Shah. Later on, till the end of Bahamani rule this region was under their rule. Succeeding 5 Shahi's were ruling in different areas of Deccan. Adilshahi included this region under their rule and Sangli district was the part of Bijapur prant. After that it went to Adilshahi till Aurangzeb conquered Deccan.

After the arrival of Shahu, the region was the part of the Maratha territory. During Peshwa's time the jagir of this region was given to Patvardhan family. Till the end of Peshwa rule Sangli district remained under Patvardhan's family. Sangli region was active during the freedom movement.

The Culture of the region is not much different from the other districts of Southern Maharashtra. As it is closer to the Southern Indian states like Andhra Pradesh and Karnataka the district has influence of the traditions from these areas but at not much extent.

2.1 LOCATION AND BOUNDARIES

The Sangli district is one of the districts in Maharashtra state. The Sangli district lies between 16^0 45' to 17^0 33' North latitude and 73^0 42' to 75^0 40' east longitude and its area of 8572 square kilometer. It extends from the Eastern slopes of Sahyadri ranges in the East-Westerly direction for about 205 km. in length. The region is bounded on the North by Satara and Solapur district, on the West by Ratnagiri district, on the South by the river Warana and Kolhapur district and on the South-East and East by the state boundary of Karnataka states (Fig. 2.1)

Sangli city is the headquarter situated 420 k.m. away from Mumbai and 240 k.m. away from Pune by road. Belgaum is at a distance of 145 Km and Bengluru is at a distance of 750 k.m. from Sangli. Thus it has 21 rank in area of the Maharashtra state.

2.2 PHYSIOGRAPHY

The region falls partly in Krishna basin and partly in Bhima basin. Consequently, it is divided into different drainage systems. The hills of the district may broadly be grouped as follows:-

a. The Bhairavgad- Kandur hills and their spurs.
b. Machchhindragad –Kamal Bhairav hills.
c. Mahimangad and Panhala range with off shoots.

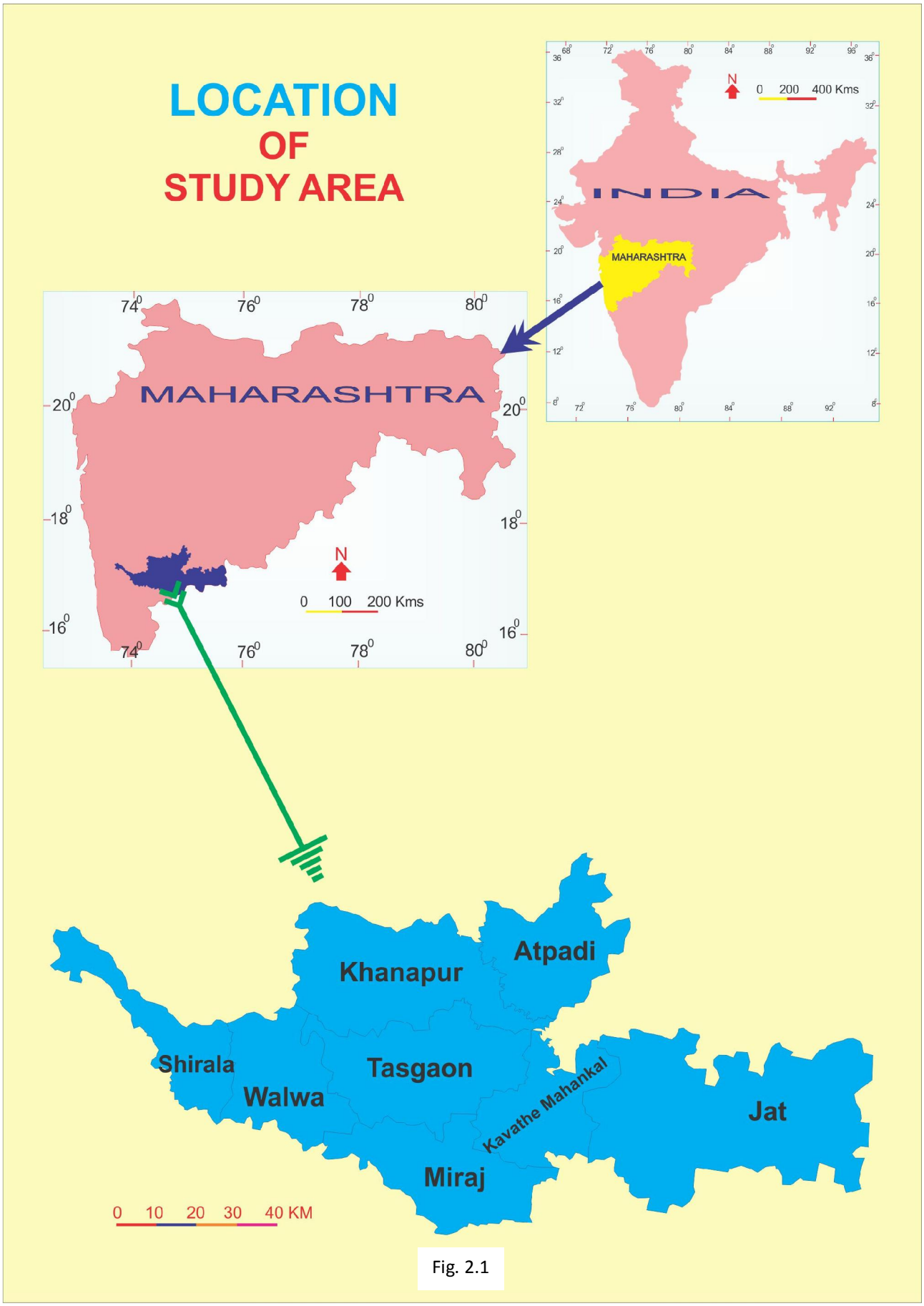
LOCATION
OF
STUDY AREA
INDIA
MAHARASHTRA
N
0 200 400 Kms
MAHARASHTRA
74°
76°
78°
80°
20°
18°
16°
N
0 100 200 Kms
Atpadi
Khanapur
Shirala
Walwa
Tasgaon
Kavathe Mahankal
Jat
Miraj
0 10 20 30 40 KM

Fig. 2.1

d. Hills of the North-Eastern part of Khanapur taluka.

Machchhindragad-Vardhangad range is an offshoot of Mahadev hills which is approximately the boundary of the district.

The physiographic profile of the Sangli district may include relief, geology, drainage pattern, soil, climate etc. Here these aspects are given to represent physiography of Sangli district.

2.3 RELIEF

Relief affects agriculture operation in many ways. Relief directly affects land use and growth and distribution of crops. Relief influences land cultivation and farming in a region by affecting the cause of altitution. Sangli is a part of the larger Deccan Peninsula of India. The average height of the area is about 600 meters. The maximum height is 918 meters which is observed in north eastern part of the district. The lowest point is the extreme east part where the height 480 meters above sea level. On the basis of altitudes the district is divided in to three divisions i.e.

i. Height below 600 meters
ii. Height between 600 to 700 meters
iii. Height above 700 meter

The Plains (Height below 600 meters)

The zone of 500 to 600 meters include Eastern and North-Eastern parts of Jat tahsil, the eastern part of Atpadi tahsil, the Southern part of Khanapur tahsil, the Western part of Tasgaon tahsil and the Southern part of Kavathe Mahankal tahsil. The height of the North Eastern part of Jat tahsil is less than 500 meters. The Agrani river plain area is located in the Southern part of Kavathe Mahankal tahsil, Man river plain area is isolated in the North Eastern

part of Atpadi tahsil and the Bor river plain located in the eastern part of Jat tahsil.

The Plateau (Height between 600 to 700 meters)

The altitude zone of 600 to 700 meters include the Northern part of Miraj tahsil, the central part of Khanapur tahsil, the East Central part of Jat tahsil, the Southern part of Kavathe Mahankal tahsil. The height of Khanapur plateau varies from 700 to 900 meters, some peaks having the height of more than 900 meters are found along the North Eastern fringe of plateau. The height of Jat plateau varies from 600 to 700 meters and maximum height is 758 meters. The Khanapur Plateau is comparatively less undulating than the Jat Plateau.

The Foot Hill (height above 700 meters)

The South Central part of Jat tahsil, the extreme Western part of Atpadi Tahsil, the North Eastern part of Miraj tahsil, the Western part of K. Mahankal tahsil and the Eastern part of Tasgaon tahsil are included in the altitude zone of above 700 meters. This zone can be divided in to three subdivisions –

1. The foot hill areas lying to the West of Khanapur-Jat Plateau.
2. The foot hill areas lying to the East of Plateau.
3. The hilly and foothill area lying to the West of the Yerala River plain. The average slope of this area is comparatively more than the other areas and the slope is very steep along the border of the plateau.

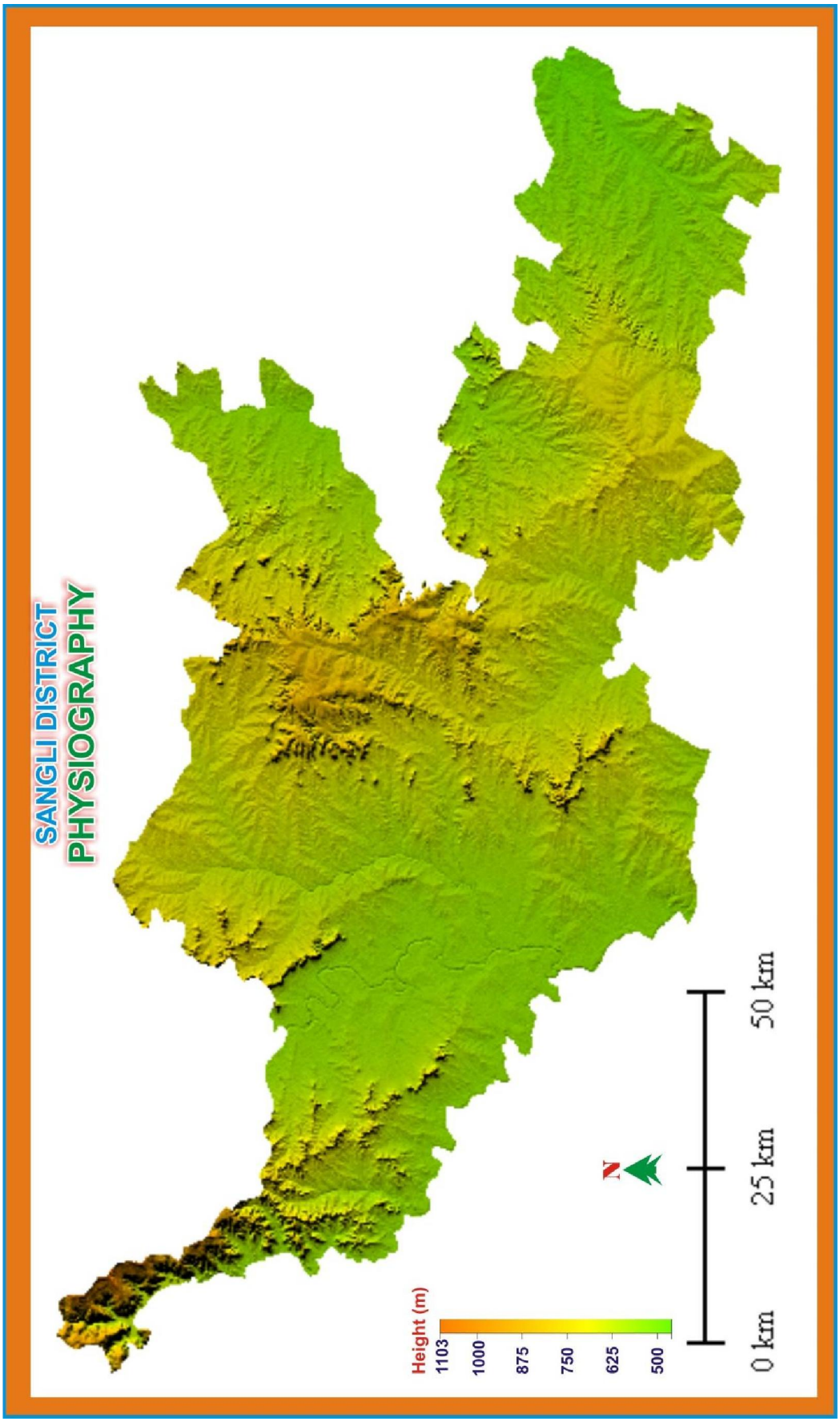
SANGLI DISTRICT
PHYSIOGRAPHY
Height (m)
1103
1000
875
750
625
500
N
0 km
25 km
50 km

Fig. 2.2

2.4 DRAINAGE

Within the limits of Sangli district the Krishna forms the main river system through Shirala taluka in the West may be described as belonging to Warana and the Eastern part of the distsrict as belonging to the Bhima drainage (Fig. 2.3). The main rivers are:

1. The River Warana

In the West, in Shirala tahsil, Warana, a right bank tributary of Krishna forms the boundary between Kolhapur and Sangli district. Its banks are steep and broken.

2. The River Krishna

Krishna basin is the most fertile part of the district. Krishna is Master River which runs in the district for a distance of about 108 km. Narsinhpur, Bahe, Borgaoan, Walva, Bhilwadi, Sangli, Miraj etc., are located on the banks of river Krishna. Krishna river course is very important for agriculture. The Krishna is unfit for navigation. The channel bed is only about 40 to 45 meters across and except the monsoon season the river is so shallow that it is possible to drive even bullock-carts across the bed in about knee-deep water.

3. The River Yerala

It flows North to South in a valley flanked by the Vardhangad-Machchhindragad range on the right (on the West) and by Mahimangad-Panhala range on the left (on East).The Yerala River is the left bank tributary of Krishna river. It collects water from the Western and central part of Khanapur and Tasgaon tahsil.

4. The River Agrani

This river system is confined to arid parts of Tasgaon and Kavathe Mahankal tahsil. Agrani is a seasonal river.The river Agrani rises above Balvadi in Khanapur plateau and flows 3.29 kms. East of Khanapur, deeply incised in the plateau. The narrow valley bottoms of this river and its incised tributaries are the only areas of fertile soil with facilities for well irrigation in the other side barren plateau areas. The East bank tributaries of Agrani River have cut down relatively broader valleys and hence, there is a greater intensity of agriculture and the valley is consequently larger and more frequent to the East of the river than to the West.

5. The River Man

The river Man has only about 18 kms of its course within and on the border of the Sangli District. But along with its tributaries, it is responsible for draining the North-Eastern parts of Khanapur and Miraj talukas and the Northern part of Jat taluka comes into Bhima River. The Mhaswad canal created on Man just before its entry into the district provides irrigation facilities to the East of the river in Khanapur taluka. To the West of the river are a number of tributaries draining the slopes of Khanapur plateau eastwards.

6. The River Bor

The River is principally drained in the eastern part of Jat taluka with its tributaries of Dodda and Darai. These tributaries turn northwards towards Bhima River. The river Bor rises on the northern slopes of the water divide about 4.8 kms to the North-East of Jat where it is known as ‘Don’.

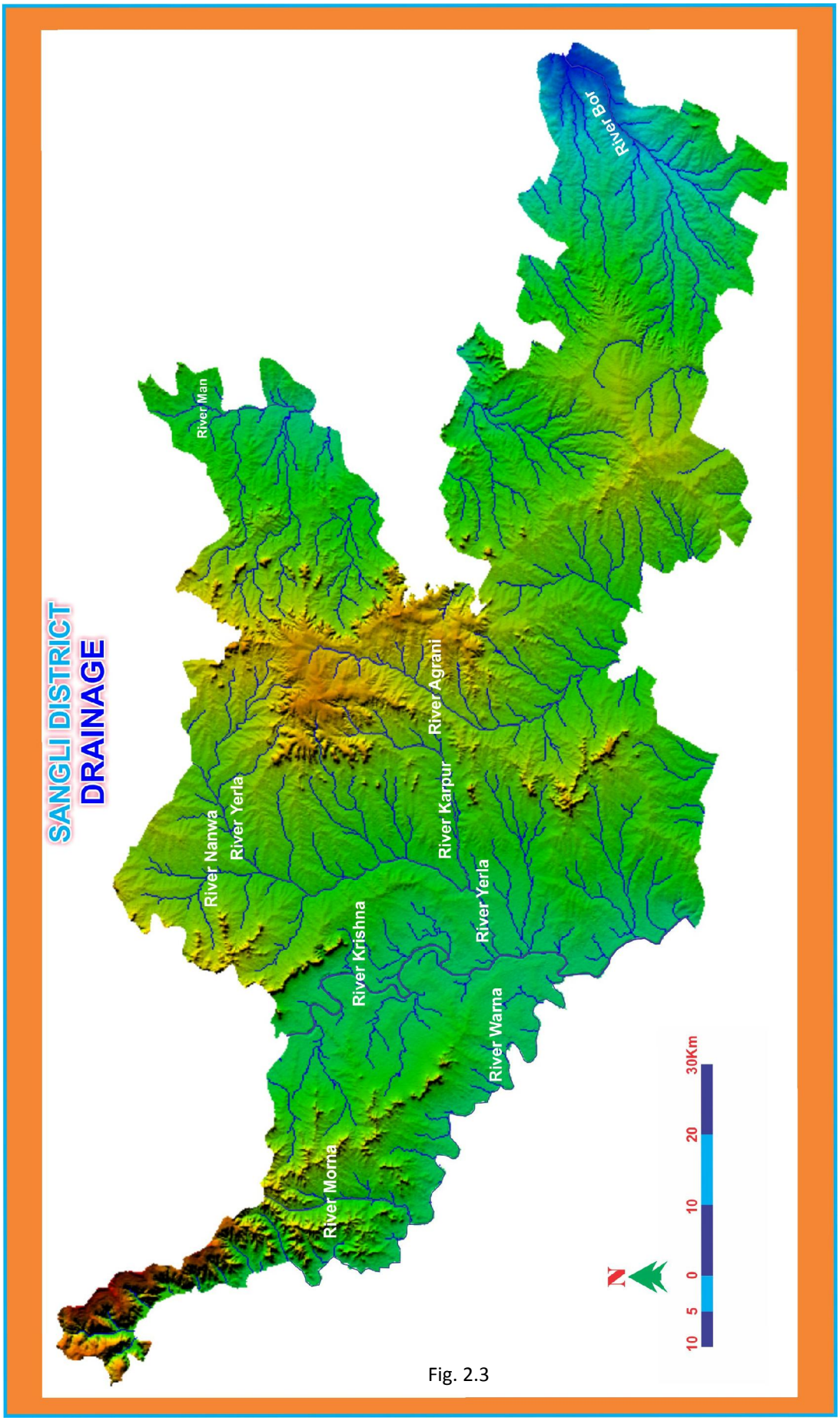
SANGLI DISTRICT
DRAINAGE
River Bor
River Man
River Agrani
River Karpur
River Yerla
River Nanwa
River Yerla
River Krishna
River Warna
River Morna
N
10 5 0 10 20 30Km

Fig. 2.3

2.5 CLIMATE

Temperature

Temperature in the district remains sufficiently high and conductive to the growth of tropical crop of large variety throughout the year. Sufficient temperature and sunshine are available throughout the year and provide ripening condition for the crop. The weather is cool and healthy in the hot season in western part and chilly during rainy season. In this part rainy season is cooler than the winter season, which affects the ripening of the crop, thus ripening of crops requires more time in the western part than other parts of the district. The warmth increases as one proceed from west to east. In the central and eastern part of the district, there is considerable heat during hot season. The eastern part is hotter than the other and temperature variations are found from season to season, and agricultural operations are closely associated with the different season. As there is only one observatory at Sangli from which metrological data is made available and which is taken as representative for the district.

In the Matter of daily average minimum and maximum temperature ranges not much variation is observed in the region. The average maximum temperature of 38.5°c and minimum temperature of 12.8°c are recorded at Sangli Station. There is a spell of high range of temperature for four month from November to February. However, the maximum temperature ranges from 36.5°c in March to 34.4°c in June.

2.6 SOILS

Soil Constitute the next most important basic resources for agriculture (Bennet) 1955. Besides climatic consideration the texture and depth of soil, its ingredients salinity, alkalinity status, drainage condition and the position of ground water table all go to determine the crops which would be suitable for an area and the mode and extent of irrigation to be applied to them (Government of India 1976). The study of soils of region including in the mechanical and chemical properties and processes of formation is essential for understanding its agriculture land use and production dynamics.

The soil formation in the district has been pre dominantly influenced by the climate. The district has three distinct climatic zones.

There are some important soil types

1. Deep-black Soil

Deep black soil of Krishana valley occurs particularly in the area having assured rainfall. They cover mainly the Krishna river flood plain comprising the part of western Tasgaon, Walwa and Western Miraj tehsils in central part. These are fertile soils, highly retentive of moisture and yield bumper crops provided that the balanced water supply is made.

2. Medium-deep Soils

These soils occur in the areas of the rainfall is low. They have reddish brown color, clayey texture and granular to blocky structure producing coarse crops seasonally.

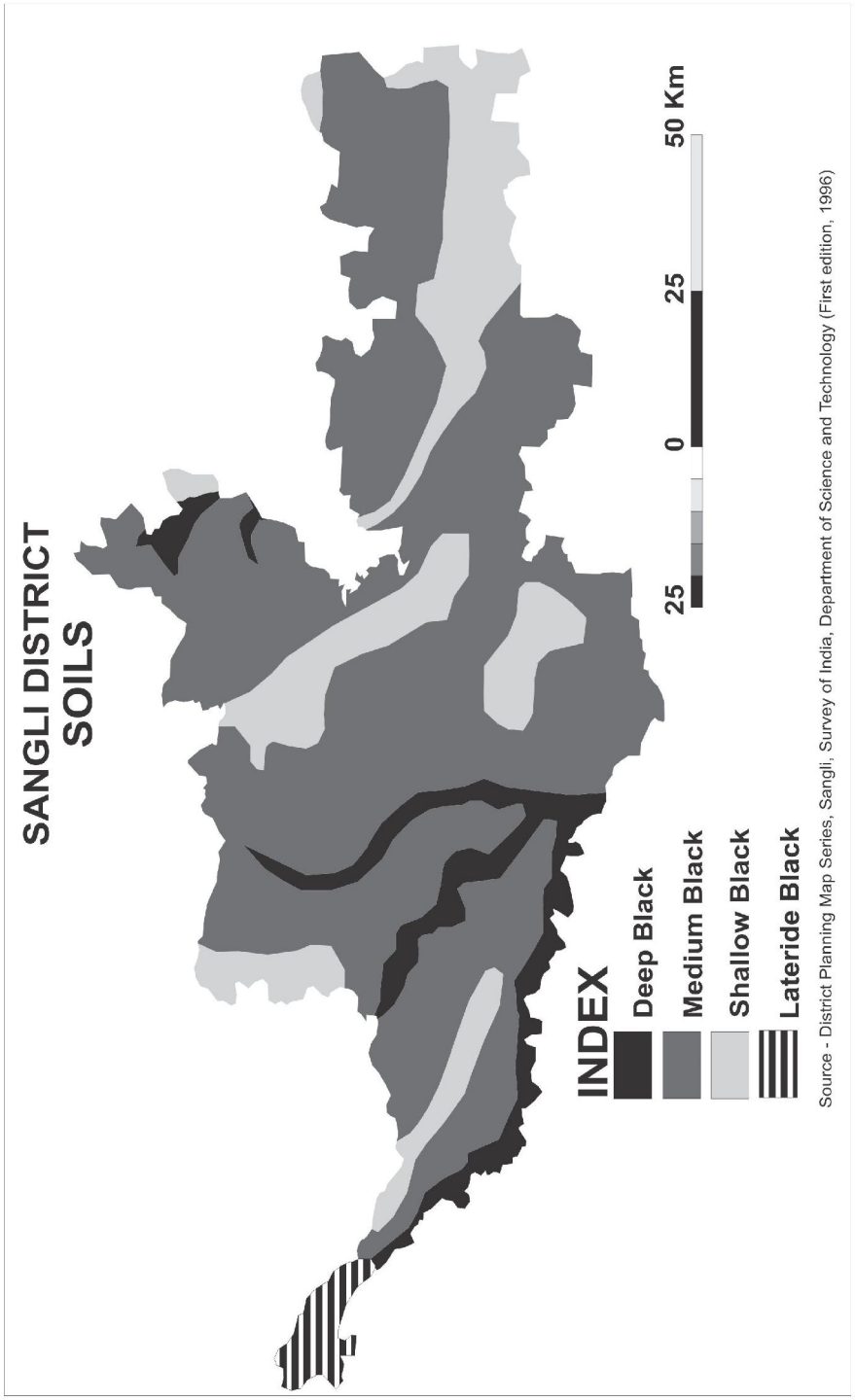
SANGLI DISTRICT
SOILS
INDEX
Deep Black
Medium Black
Shallow Black
Lateride Black
25
0
25
50 Km
Source - District Planning Map Series, Sangli, Survey of India, Department of Science and Technology (First edition, 1996)

Fig. 2.4

3. Shallow black Soils

Shallow soils are confined to the Eastern part of Jat tehsil. These are light brown and reddish brown in color, loamy sands to sandy clay in texture. They possess very poor fertility status and are used rarely for agricultural purpose due to insufficient depth.

4. Laterite Black soils

Laterite soils occur on up Ghats in the extreme Western hilly portion of the district in Shirala tehsil, which receive very high rainfall. These soils are slightly acidic and poor in fertility and are mainly suitable for rich and hill millets.

2.7 TOURIST PLACES

The district Sangli is a beautiful place, because it has temples, various trees, old painting. The district attracts many tourist due to its natural wealth, beauty and test of delicious fruit that is Grapes.

AUDUMBER

In Tasgaon tehsil 8 kms East of Bhilavadi Railway Station the place is known for Dattatraya temple which was built in the honors of Narsimha Saraswati who was a great saint and who is supposed to be an incarnation of Dattatraya. Narsimha was born in poor Brahmin family of Madnava and Amba in A.D.1304. The shrine is located on the bank of Krishna which is beautiful place. On the opposite bank there is a temple of Bhuvaneshvari, which is also contemporary to saint Narsimha.

KHARSUNDI

Atpadi tehsil is known for Siddhedwara temple of Yadav period, latter on completely renewed.

NARSINGHPUR

Walwa taluka is known for Narsimha temple.

SANGLI

A district headquarter and a beautiful city, place of Patvardhan family of Peshwa period, had a fort called Ganesh Durga which now houses several government buildings. The town has Willingdon College, Museum, Ganpati Temple which is built by Patvardhans is very much famous. It has still old paintings. There are few more temples in the town.

SHIRALA

A tehsil headquarter is famous for Nagapanchami festival and Venomous snakes are caught to sport by the folk.

TASGAON

A tehsil headquarter which was the place of Patvardhans, has a famous Ganesh Temple.

2.8 REFERENCES

1. District Census Handbook 1981, 1991 and CD for 2001.
1. Maharashtra State Gazetteer, Sangli District.
2. Socio-economic review and District Statistical Abstract of Sangli district.

CHAPTER - 3
DISTRIBUTION AND DENSITY OF POPULATION

3.0 INTRODUCTION

Population density is related to the number of people and the space occupied by them. The concept on density of population is most revealing and is a useful tool in the analysis of the diversity of man's distribution in space (Clarke, 1972). Population distribution and densities of population are very closely associated to each other. Population analysis is a part and parcel of any regional study as population is a great resource of all the resources and an essential element of all regional geography, although past regional studies involved a detailed examinations of demographic influences and effects. Without serious consideration of such aspects, it is impossible to assess the social and economic evolution of any region. Size and density of population are the fundamental issues and their disparities are of prime concern to population geographers. The geographer's task is to explain this diversity in terms of physical, social, demographic, economic, political and historical factors as an inter-related influence (Clarke, 1976). What is most important in understanding these phenomena i.e. is the dynamism of the processes as population distribution is an ever changing fact and the cause and effect too vary in spatio-temporal matrix. A study of population distribution should, therefore, be supplemented by a discussion on the pattern of population density.

The spatial organizations of any region is perceived in the occupancy and nature of the spread of population over the region reflecting intra-regional variations of the resources base within the spatial framework (Deshpande, Arunamchalam and Bhat, 1980). Economic characteristics play an important role in the overall development of an area. These characteristics reflects on the economic status of any region of given point of time. Hence, it is essential to study the distribution of population in the study area.

The density of population is the synthesis of all the geographical phenomena. It expresses equivalent manner in which man has taken advantage of the land occupies. Land and people constitute two vital elements of an area so that the ratio between the two is of fundamental consideration in all population studies. Population study of a area is made per square km. In other words the relationship between people and land is usually expressed as a simple arithmetic ratio which divides total population by total area. The pattern of population in an area. In case the land area is small for a given population the density will be high but if the land area is large then the density will be low. Density depends on many natural and human factors, such as a soil, rainfall, Climate, economic resources, and so on. Since these factors differ in many places, density will also differ. Density measures the degree of population concentration in a particular area.

3.1 DEFINATION OF THE POPULATION PROPORTION:

The field of Population distribution may be defined as the study of nation's or community's population in terms of area, sub-divisions; such as

regions, states, socio- economic areas, urban and rural residence and census tracts. This includes the study of population residing in the smaller areas, units, as well as the study of total number of inhabitants" (Bogue).

As population geographer's main task is to explain spatial variations in population distribution. In terms of all such influences or factors that provide this spatial pattern in temporal dimensions, the author has assembled the requisite population data both tehsil wise and village wise from the 'Censuses' of Sangli district, 1981 and 2001. A Census has been defined as "the total process of collecting, compiling and publishing of demographic data pertaining at a particular time, to all persons in a defined territory" (Shrivastava).

3.2 CONCEPT OF POPULATION PROPORTION:

It is essential to understand some of the basic concepts connected with the subject under study. By population distribution we mean geographical and spatial study of distribution of population of a territory and the way in which the people are distributed over it. When, however, changes take place in the existing pattern of population distribution, it is called population re-distribution. An urban place is a place which is demarcated as such regardless of boundary determining criteria. For the purpose of population distribution a locality has been defined as a distinct population cluster, in which the inhabitants live in closely adjacent structures. The author used tehsil boundaries, village boundaries and urban places as localities for population distribution. From urbanization we mean a process in which rate of growth of urban population is greater than the

growth rate of non-urban population. From urbanism we mean the way of living in urban areas.

3.3 DISTRIBUTION OF POPULATION (1981- 2011)

The concept of population density is one of the important factors used to determine population distribution and it is a measure of degree of population concentration. The term density of population refers to a ratio between population and land area, generally expressed in terms of number of persons per unit area. If growth of population is uniform then the density of all units will increase in the same proportion from one point of time to another. The differential pattern of population growth varies consistently and unit will lead to variations in population densities (Chandna and Sidhu). The distribution of population is more locational while the density is more proportional, concerned with the ratio between the size of population and the area. Thus, when one is dealing with distribution, the concern is more for the pattern of spread of population and when one is dealing with density, the concern is more focused on the man-land ratio.

Table No. 3.1 and fig. No. 3.1 represent variation of population with respect to region and reveals that proportion of population over the region from tehsil to tehsil and has fluctuated over decades during 1981 to 2011.

Table 3.1

POPULATION DISTRIBUTION IN STUDY REGION

Tehsil	Year							
	Population				Population in %			
	1981	**1991**	**2001**	**2011**	**1981**	**1991**	**2001**	**2011**
Miraj	506320	634639	756048	854581	27.65	30.54	29.26	30.28
Tasgaon	300597	310318	429761	716310	16.42	14.93	16.63	14.75
Khanapur	217958	221999	258231	313233	11.90	10.68	10.00	11.10
Atpadi	84016	111557	125263	138455	4.59	5.37	4.85	4.91
Jat	193096	240647	283950	328324	10.54	11.58	10.99	11.63
K. M'kal	97274	117901	144596	152327	5.31	5.67	5.60	5.40
Walawa	301302	293380	427377	456002	16.45	14.12	16.54	16.16
Shirala	130649	147773	158298	162911	7.13	7.11	6.13	5.17
District Total	1831212	2078214	2583524	2822143	100.00	100.00	100.00	100.00

*Source – Census of India, Sangli district 1981, 1991, 2001 & 2011.

1) Region of Very High Percentage of population (Above 20.5 percent)

It is observed that during 1981 to 2011, higher percentage of population in the study region was confined in Miraj tahsil. Because of developments in irrigation facilities and characterised by the emergence of agro-based industries like sugar, gur, cotton and dairy. Miraj, Sangli and Kupwad, Madhavnagar, Budhagaon are emerged as a major urban centres of industrial and commercial activities, educational, medical as well as these centres have good transport facilities e.g. Miraj railway junction and good job opportunities.. So very high percentage of population in this tahsil is due to these factors.

2) Region of High Percentage of population (15.5-20.4 percent)

High percentage of population was observed in Tasgaon and Walawa tahsil in 1981, 2001 to 2011. Generally these tahsils are distributed in such manner that entire region gets represented. Topographically and climatically variations affected the concentrations and distribution of population in these tahsils. In spite of having low rainfall and high range of variations, recent

developments in irrigation have encouraged the emergence of commercial agriculture in this region, especially, the sugarcane cultivation with an assured market in the form of sugar industries and grape cultivation. Islampur city in Walwa tahsil is adjacent to N.H.4 hence, good educational facilities are available and it has become a trade centre as well as there is industrial zone. It helped to increase population density.

3) Region of Moderate Percentage of population (10.5-15.4 percent)

Table No. 3.1 and fig no. 3.1 shows that in in 1981 to 2011 moderate proportion of population was mainly restricted in Khanapur and Jat tahsils. Khanapur and Jat tahsils have received more opportunities with regard to agriculture and they are also endowed with the existence of small towns and urban centres engaged mainly in primary activities. Whereas seasonal variations in rainfall, low degree of irrigation development, the scarcity condition and adverse geographical conditions have led to limited economic growth. Further this has resulted into out-migration of population seeking job opportunities outside the region.

4) Region of Low Percentage of population (Below 10.4 percent)

During 1981 to 2011, Kavathe-Mahakal, Shirala and Atpadi tahsils were covered under low category with regard to population concentration. These tahsils consisting of highland zone are characterised by existence of undulating

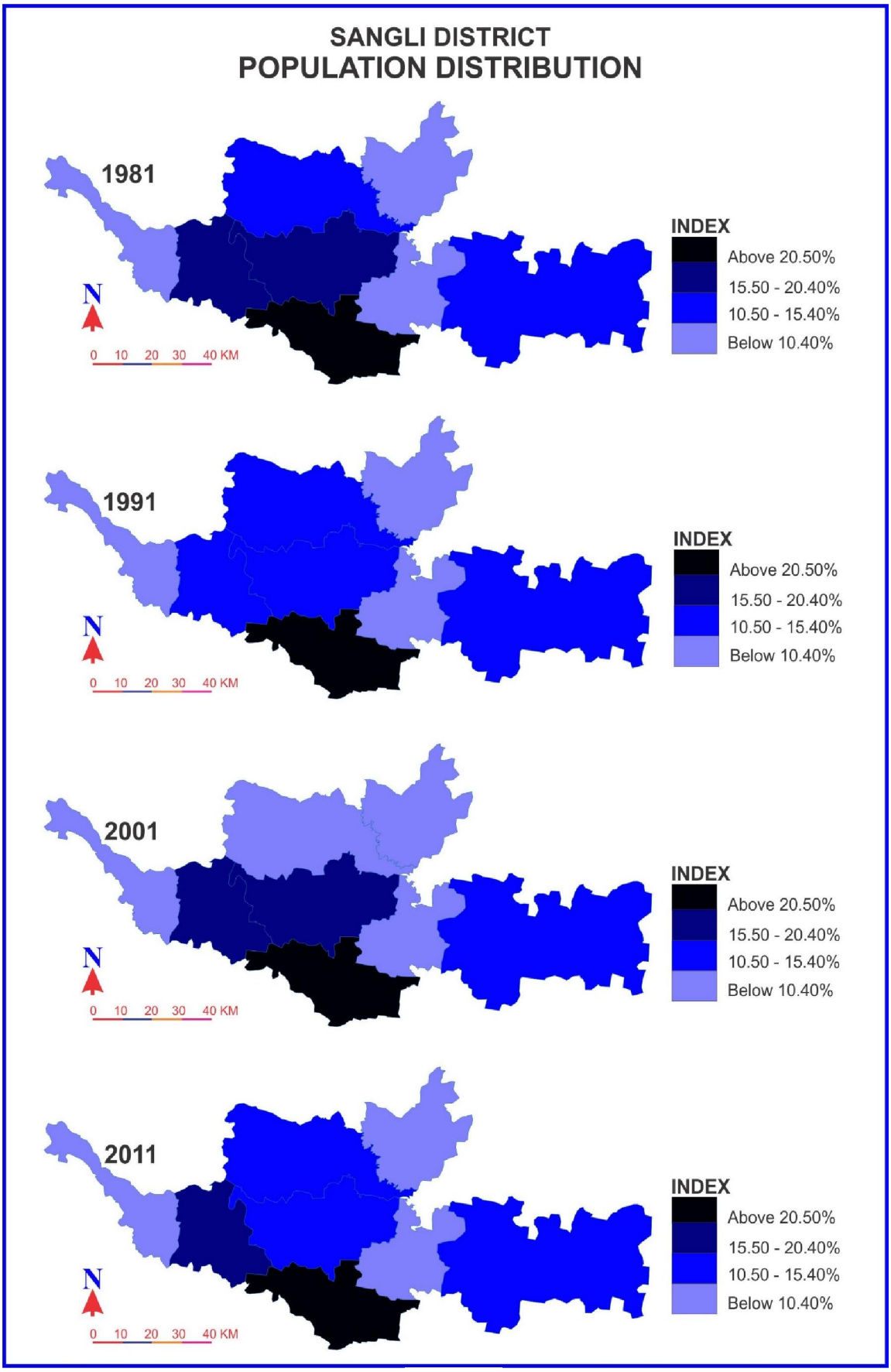
SANGLI DISTRICT
POPULATION DISTRIBUTION
1981
1991
2001
2011
N
0 10 20 30 40 KM
INDEX
Above 20.50%
15.50 - 20.40%
10.50 - 15.40%
Below 10.40%

Fig. 3.1

topography. These adverse geographical conditions have limited growth and development of other economic activities as well as due to lack of transport facilities such as railway, road ways industrial growth is less. These factors have led to low concentration of populations of these tahsils. Due to regional imbalances in these tahsils and poor employment opportunities have resulted into diverse migration of population.

3.4 POPULATION DENSITY

The concept of population density is one of the important factors used to determine the population distribution, growth and migration. The term density of population refers to a ratio between population and land area generally expressed in terms of number of person per unit area.

Density of population includes crude, rural, urban, physiological, agricultural and nutritional. A high density indicates high standards of living and lower density indicate low standard of living. Analysis of the types of density of population are as follows.

3.4.1 ARITHMETIC DENSITY (1981- 2011)

The most common type of population density is arithmetic density. Arithmetic density is a simple ratio between total population and the total land area. It is the measure of population pressure on land, because it merely spells out a simple quantitative relationship between man and land, both of which may be widely varying quality (Chandna and Sidhu).

Table No. 3.2 indicates the patterns of arithmetic density in the study region during 1981-2011. The density differs from tahsil to tahsil with the time. Fig. No. 3.2 further shows the analysis of decadal variation in density within the study region.

The average arithmetic density of Sangli district in 2011 is 338 persons per sq.km, which is slightly lower than that of the state average and national average. Among the 35 districts of the state, Sangli holds the 10th place. In 1981, with an average density of 213 the district held the 7th rank. In 1991and 2001 an average density of 249 and 309 respectively.

Table No. 3.2

SANGLI DISTRICT: ARITHMETIC DENSITY

Tahsil	Arithmetic Density (per sq/km)				Change		
	1981	1991	2001	2011	1981-91	1991-01	2001-11
Miraj	547	755	899	1016	208	144	117
Tasgaon	270	260	361	349	-10	100	-11
Khanapur	164	175	204	247	11	29	43
Atpadi	96	134	151	167	38	17	16
Jat	86	110	129	150	24	20	20
K. M'kal	138	161	197	208	23	36	11
Walawa	383	447	652	695	64	204	44
Shirala	206	231	248	255	25	16	7
District Total	213	249	309	338	36	60	29

*Source – Census of India, Sangli district 1981, 1991, 2001 & 2011.

1) Region of very high arithmetic density: (Above 450 per sq.km)

Fig. No. 3.2 shows, the density of Miraj tahsil is above 450 persons per sq. km. i.e. very high arithmetic density during 1981 to 2011 decades. Whereas Walawa tahsil moved up into this category during 1991-2011. These tahsils cover area of Krishna River and its tributaries where irrigation facilities, trade, commercial activities, agriculture and industrial development have taken place.

Employment opportunities to population that results into high density of population. But the fluctuation of density decreases decade by decade in the Miraj tahsil but Walawa tahsil recorded increase in population density in 1991-2001 decade by fluctuation 204.

2) **Region of high Arithmetic Density: (301-450 persons per Sq.km)**

High density of population was confined to Tasgaon tahsil during 2001 and 2011 decades. This track has sound development of irrigation and Agricultural economy e.g. the establishment of agro based industry has increased employment opportunities. Tasgaon tahsil decadal fluctuation of density decreased in the 1981-1991 and the 2001-2011 decades, but during the 1991-2001 decade increased i.e.100.

3) **Region of Moderate Arithmetic Density: (151-300 persons per Sq.km)**

It is revealed from table that moderate density of population during 1981 to 2011 was confined to Shirala and Khanapur tahsil. These tahsils are favourable for agriculture and establishment of agro-based industries and industrial zone at Vita attracts people with good urbanization which have resulted into moderate population. And the Atpadi tahsil was confined moderate density population during 2001 to 2011. The decadal fluctuation of density decreased in the Shirala and Atpadi tahsil. But Khanapur tahsil decadal fluctuation increased.

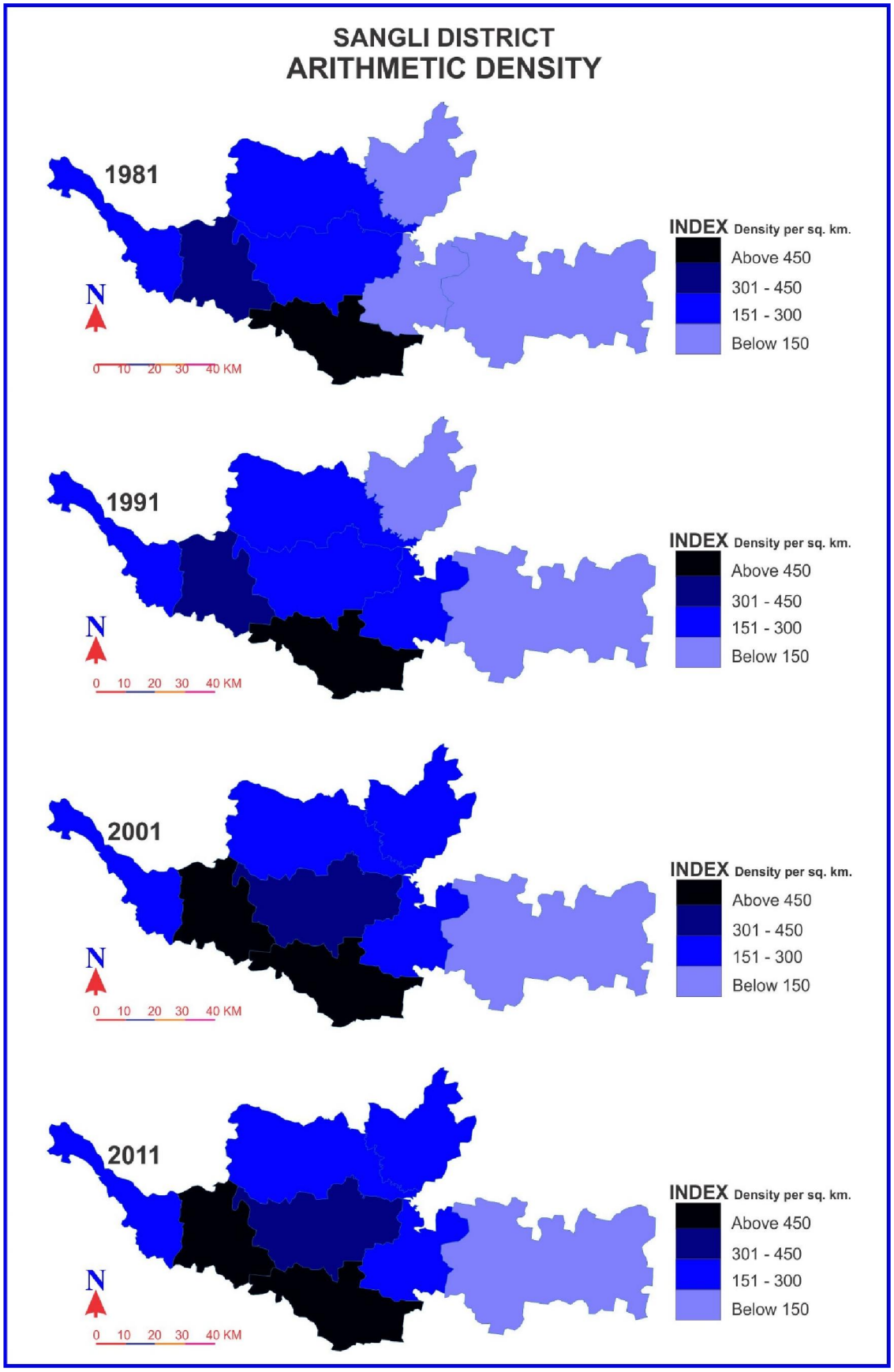
SANGLI DISTRICT
ARITHMETIC DENSITY
1981
1991
2001
2011
N
0 10 20 30 40 KM
INDEX Density per sq. km.
Above 450
301 - 450
151 - 300
Below 150

Fig. 3.2

4) Region of Low Arithmetic Density: (below 150 persons per Sq.km)

Table represents that during 1981 to 2011 Jat tahsil recorded low density of population and Atpadi tahsil recorded low density during 1981 to 1991. The tahsil of high land zone and drought prone zone in east due to uncertain rainfall have adverse topographical and climate conditions. Causes poor economic development due to lack of infrastructure such as roads, water supply, electricity, absence of industry, lack of commercial activities. The Jat tahsil decadal fluctuation of density recorded stable. One more reason of low density is scarcity of food and water and implementation of family planning programmes.

3.4.2 RURAL POPULATION DENSITY (1981-2011)

Rural density is calculated on the basis of the total rural population and total rural land. Table No. 3.3 represents spatio-temporal pattern of Rural density in Sangli district from 1981-2011.

Table No. 3.3

SANGLI DISTRICT: RURAL DENSITY

Tahsil	Rural Density(per sq/km)				Change		
	1981	1991	2001	2011	1981-91	1991-01	2001-11
Miraj	282	323	464	389	41	141	-75
Tasgaon	238	260	333	318	23	72	-15
Khanapur	153	175	171	209	23	-4	38
Atpadi	96	134	151	167	38	17	16
Jat	86	110	129	150	24	20	20
K. M'kal	138	161	197	208	23	36	11
Walawa	369	447	512	536	79	65	24
Shirala	206	224	247	260	18	22	14
District Total	173	205	245	252	32	41	7

*Source – Census of India, Sangli district 1981, 1991, 2001 & 2011.

1) **Region of very High Rural Density: (Above 450 persons per Sq.km)**

Walawa tahsil recorded highest density of about 500 persons per Sq.km in the year 2001 and 2011. The density of population is high as the concentration of rural population around urban centres. The availability of soil and water resources resulted in dairy industry, sugar industry at Walwa village. But its decadal fluctuation of rural density slightly decreases.

2) **Region of High Rural Density: (301-450 persons per Sq.km)**

As seen from table during 1991 to 2011 Miraj tahsil come under this category and 1981 to 1991 Walawa tahsil, 2001 to 2011 Tasgaon tahsil recorded high rural density due to increased birth rate and improvement in irrigation facilities due to Arphal, Takari scheme. And also increased in the cultivated area and agro-based industries in this tahsil. Miraj tahsil decadal fluctuation of rural density decreases in 2001-2011 decade.

3) **Region of Moderate Rural Density: (Below 151-300 persons per Sq.km)**

Table indicates that, during 1981 to 2011 Khanapur and Shirala tahsil rural Density belong to the moderate rural density. And 1991 to 2011 Kavathe-Mahakal recorded moderate rural density. And Atpadi tahsil comes under this category in 2001 to 2011. Because these tahsil varied in topography, soil and rainfall conditions as a result the rural population migrated to industrial zone of Sangli city. The decadal fluctuation of rural density slightly decreases in the tahsils.

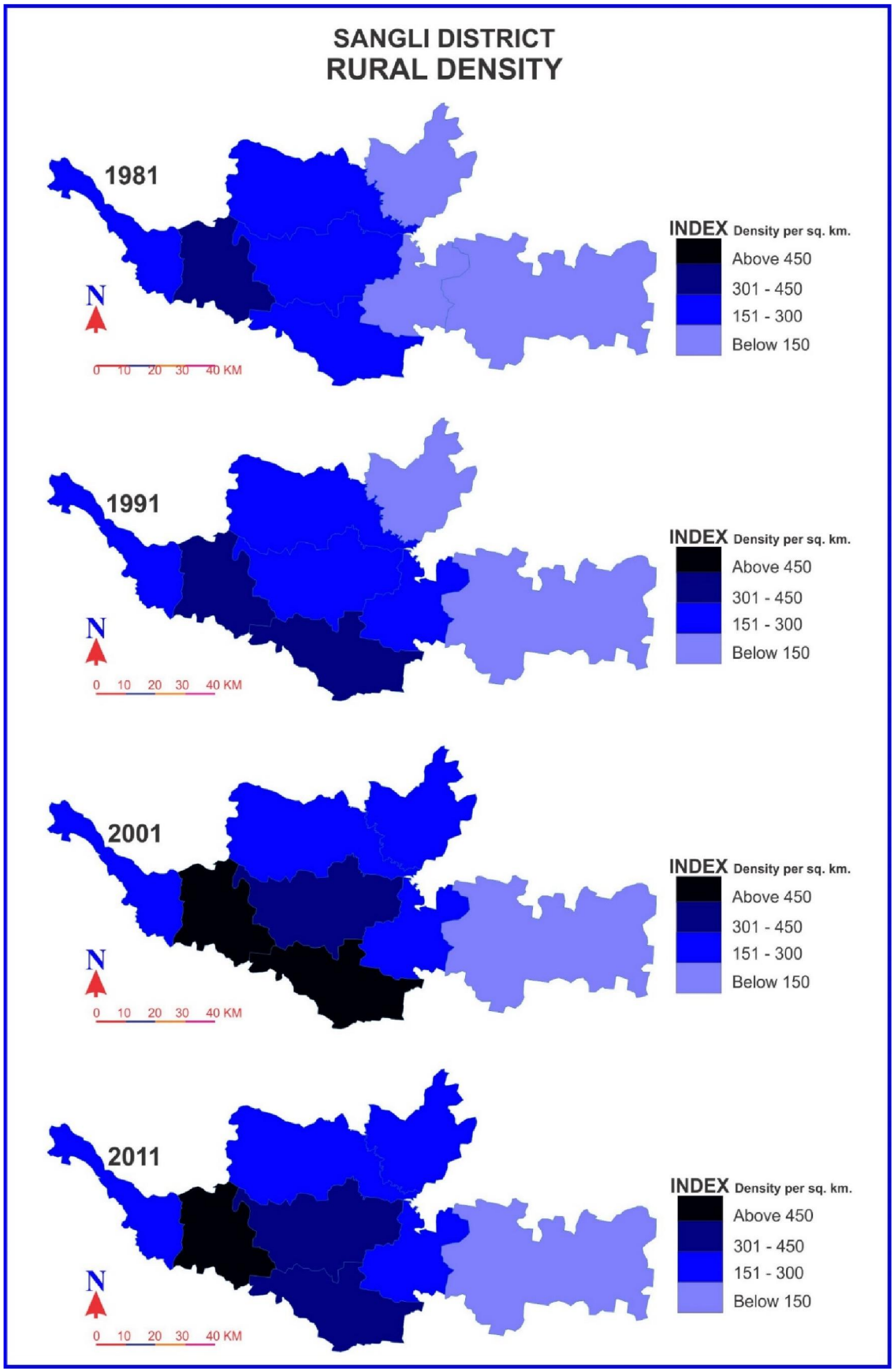
SANGLI DISTRICT
RURAL DENSITY
1981
1991
2001
2011
N
0 10 20 30 40 KM
INDEX Density per sq. km.
Above 450
301 - 450
151 - 300
Below 150

Fig. 3.3

4) Region of Low Rural Density: (Below 150 persons per Sq.km)

It can be observed from the table that during 1981 to 2011 Jat tahsil and 1981 to 1991 Atpadi tahsil belonged to the category. Economic backwardness and adverse geographical conditions such as poor soil, low rainfall, and absence of transportation and lack of resources have affected the spread and distribution in these tahsil. Generally the decadal fluctuation of these tahsil recorded stable.

3.4.3 URBAN POPULATION DENSITY (1981-2011)

The ratio between total urban population and total urban area is called urban population density. Man-land ratio in urban area is an important component in assessing the quality and pattern of urban life.

Table No. 3.4

SANGLI DISTRICT: URBAN DENSITY

Tahsil	Urban Density(per sq/km)				Change		
	1981	1991	2001	2011	1981-91	1991-01	2001-11
Miraj	3195	4218	4254	9909	1023	37	5655
Tasgaon	1075	677	771	874	-398	94	103
Khanapur	435	579	756	873	144	177	177
Atpadi	-	-	-	-	-	-	-
Jat	-	-	-	-	-	-	-
K. M'kal	-	-	-	-	-	-	-
Walawa	465	597	782	89	133	185	111
Shirala	0	561	296	0	561	-264	-296
District Total	1314	1594	1706	3316	280	22	1611

*Source – Census of India, Sangli district 1981, 1991, 2001 & 2011.

1) Region of Very High Urban Density: (Above 6001 persons per Sq.km)

During 2011, Miraj tahsil noted highest urban density of population. In the Sangli district only one Miraj urban centre improved administrative, commercial

and education facilities. The urban density increased due to getting status of Municipal Corporation to Sangli city along Miraj and Kupwad. Hence, industrial zones developed which are known as Miraj MIDC, Kupwad MIDC.

2) Region of High Urban Density: (4001-6000 persons per Sq.km)

It was observed that, in 1991 to 2001 Miraj tahsil of study region belonging to this category. Due to the rise of employment opportunities in agriculture and industrial sector. In the 1991-2001 decade decreases the fluctuation of urban density.

3) Region of Moderate Urban Density : (2001- 4000 persons per Sq.km)

Moderate density of urban population within the study region was noted in Miraj tahsil during 1981. Other causes of increased urban density are, the best medical facilities are available in the forms of Bharti Medical Hospital, Siddhivinayak Cancer Hospital, other private hospitals as well as new educational institutions established such as PVP Engineering College, Budhagaon, Bharati Vidyapeeth Sangli, similarly, the existing educational institutions started new technical and computer courses which helped to increase urban density.

4) Region of Low Urban Density: (Below 2000 persons per Sq.km)

From table, it is observed that low density of urban population was recorded in Tasgaon, Khanapur and Walawa tahsils. In these tahsil infrastructure facilities and commercial activities have not developed. And in these tahsils decreases the decadal fluctuation of urban density.

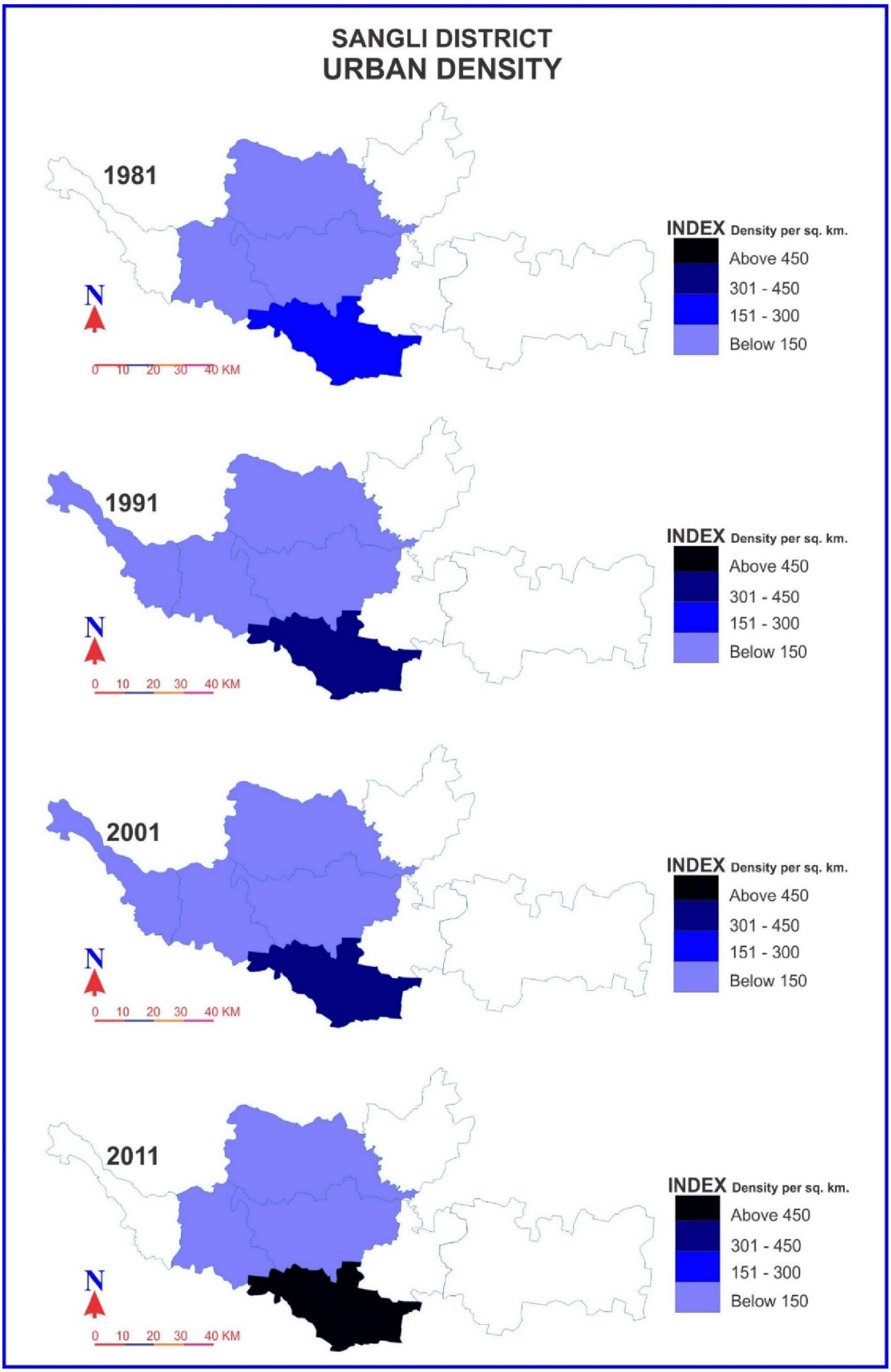
SANGLI DISTRICT
URBAN DENSITY
1981
1991
2001
2011
N
0 10 20 30 40 KM
INDEX Density per sq. km.
Above 450
301 - 450
151 - 300
Below 150

Fig. 3.4

3.4.4 AGRICULTURAL DENSITY OF POPULATION (2001-2011)

Agricultural Density of Population provides comparison between total agricultural population and cultivated area. It is better approach for analyse of land-use in agricultural countries.

Table No. 3.5

SANGLI DISTRICT: AGRICULTURAL DENSITY

Tahsil	2001			2011			Change
	Area	Pop	Density	Area	Pop	Density	2001-2011
Miraj	918.33	87705	**95.5**	918.33	101925	**111**	15.48
Tasgaon	1025.73	129717	**126.5**	1025.73	117816	**114.9**	-11.60
Khanapur	1159.84	85939	**74.1**	1159.84	97793	**84.32**	10.22
Atpadi	808.99	34622	**42.8**	808.99	40896	**50.55**	7.76
Jat	2125.93	91769	**43.17**	2125.93	111290	**52.35**	9.18
K.M'kal	690.8	43965	**63.64**	690.8	44768	**64.81**	1.16
Walwa	756.04	109882	**145.3**	756.04	116360	**153.9**	8.57
Shirala	543.47	40960	**75.37**	543.47	47336	**87.1**	11.73
District Total	8029.13	624559	**77.79**	8029.13	678184	**84.47**	6.68

*Source – Census of India, Sangli district 2001 and CD for 2011.

1) **Region of Very High Agricultural Density: (Above 201 persons per Sq.km)**

No tahsil falls under this category as per the table.

2) **Region of High Agricultural Density : (151-200 persons per Sq.km)**

It is found that, during 2011 Walawa tahsil belonged to this category due to commercialization and increased land under cultivation. The land under cultivation increased because of co-operative irrigation schemes started with the support of sugar factories named Hutatma Kisan Ahir co-operative Sugar Factory, Walwa, Rajarambapu Patil Co-operative Sugar Mill, Sakharale etc.

People took a lot benefit of various government schemes such as drip irrigation, sprinkler system and new fertilizers, hybrid seeds on subsidy. Use of modern machines in agriculture e.g. tractor etc.

3) **Region of Moderate Agricultural Density: (101-150 persons per Sq.km)**

It is found that, during 2001-2011, Miraj and Tasgaon tahsil density belonged to this category. During 2001, Walawa tahsil included in this category. Due to commercial agricultural practices emergence of agro-based industries e.g. Hutatma Sahkari Dudh Utpadak Sangh, Walwa and Rajarambapu Sahakari Dudh Utpadak Sangh, Islampur. The problem of unemployment in other sectors is increasing the burden on agriculture which has resulted in increasing agriculture density.

4) **Region of Low Agricultural Density: (Below 100 persons per Sq.km)**

It is found that, during 2001 to 2011, Khanapur, Atpadi, Jat, Shirala and Kavathe-Mahankal tahsil included in this category. During 2001, Miraj tehsil.

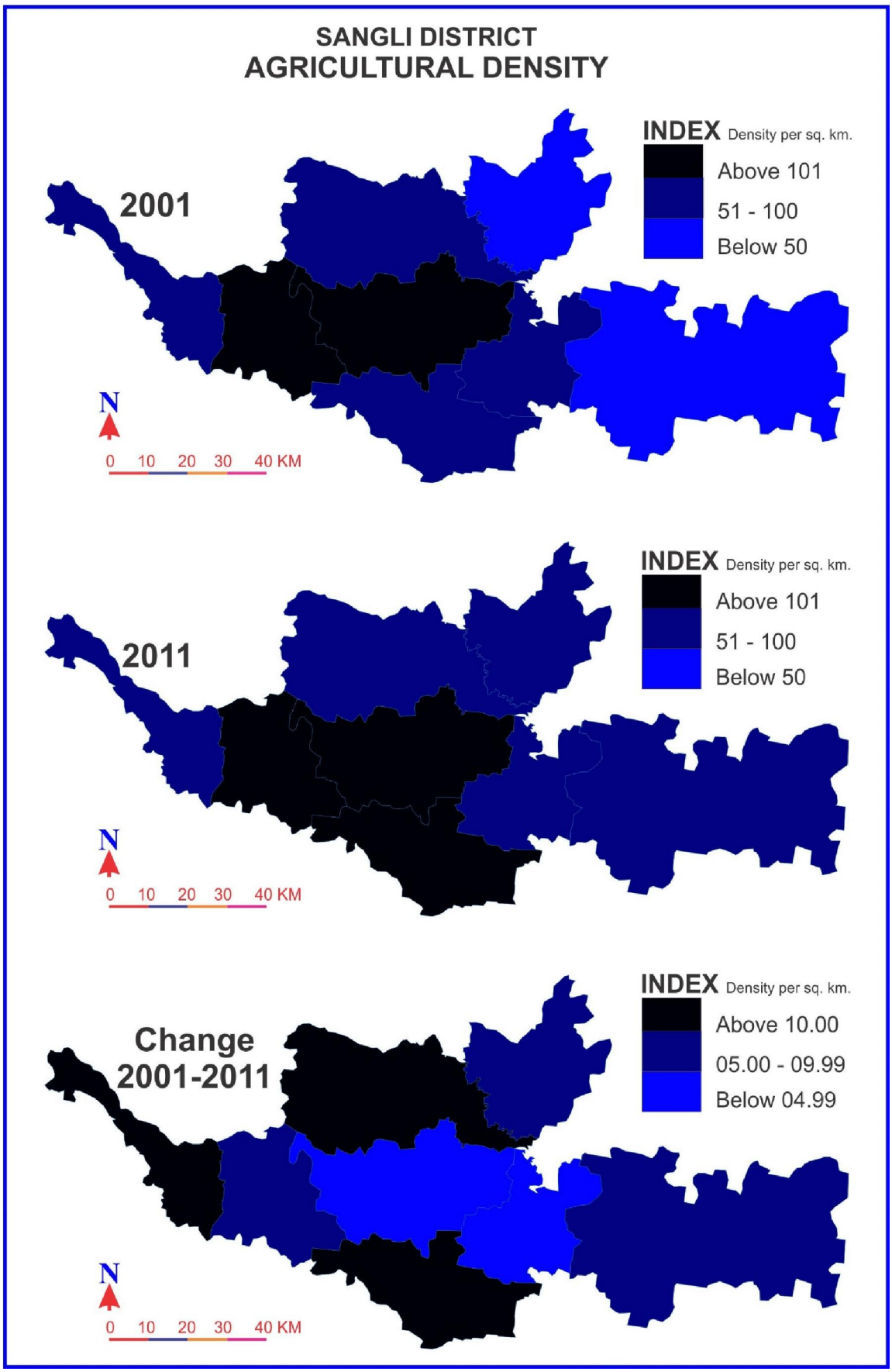
SANGLI DISTRICT
AGRICULTURAL DENSITY
2001
INDEX Density per sq. km.
Above 101
51 - 100
Below 50
N
0 10 20 30 40 KM
2011
INDEX Density per sq. km.
Above 101
51 - 100
Below 50
N
0 10 20 30 40 KM
Change
2001-2011
INDEX Density per sq. km.
Above 10.00
05.00 - 09.99
Below 04.99
N
0 10 20 30 40 KM

Fig. 3.5

belonged to this category. Irrigation and moisture deficiency causes low area under cultivation. The people are unable to cultivate the land due to its poor quality, undulating topography in Jat, Kavathe Mahankal and Shirala tahsil. And the decadal fluctuation of agricultural density in these tahsils decreases.

3.4.5 NUTRITIONAL DENSITY OF POPULATION (2001-2011)

Nutritional density calculated by total rural population divided by total cropped area excludes fallow land but includes area sown more than once.

Table No. 3.6
SANGLI DISTRICT NUTRITIONAL DENSITY

Tahsil	2001			2011			Change
	Area	Pop	Density	Area	Pop	Density	2001-2011
Miraj	918.33	293546	**319.7**	918.33	325954	**354.9**	35.2901
Tasgaon	1025.73	396304	**386.4**	1025.73	378365	**368.9**	-17.489
Khanapur	1159.84	216427	**186.6**	1159.84	264944	**228.4**	41.8308
Atpadi	808.99	125263	**154.8**	808.99	138435	**171.1**	16.282
Jat	2125.93	283950	**133.6**	2125.93	328324	**154.4**	20.8727
K.M'kal	690.8	144596	**209.3**	690.8	152327	**220.5**	11.1914
Walwa	756.04	335844	**444.2**	756.04	351506	**464.9**	20.7158
Shirala	543.47	154347	**284**	543.47	162911	**299.8**	15.758
District Total	8029.13	1950277	**242.9**	8029.13	2102766	**261.9**	18.992

*Source – Census of India, Sangli district 2001 and CD for 2011.

1) **Region of Very High Nutritional Density: (Above 401 persons per Sq.km)**

From the table, it is seen that during 2001 to 2011, Walawa tahsil included in very high nutritional density category. The tahsil very developed its agriculture by developing irrigation facilities and inputs of fertilizers and

seeds. The people adopted doubled cropping pattern. They used higher technology to increase production. The decadal fluctuation recorded 20.71.

2) **Region of High Nutritional Density: (301-400 persons per Sq.km)**

The table shows that, during 2001 to 2011 Miraj and Tasgaon tahsil had recorded high nutritional density, because of increased technological innovations, fertilizers, irrigation facilities etc. and awareness created among the farmers through various agri based programmes on various T.V. channels e.g. Amchi Mati Amchi Manasa but the nutritional density fluctuation recorded in Miraj tahsil is 35.29 and Tasgaon tahsil is -17.48.

3) **Region of Moderate Nutritional Density: (201-300 persons per Sq.km)**

In 2001 to 2011, Shirala and Kavathe-Mahakal tahsils included in this category. During 2011, Khanapur tahsil have recorded moderate population density due to the availability of irrigation facilities to same extent. And the decadal fluctuation of nutritional density recorded in Shirala, Kavathe-Mahakal, Khanapur is 15.75, 11.19 and 41.83 respectively.

4) **Region of Low Nutritional Density: (Below 200 persons per Sq.km)**

Table shows during 2001 to 2011, Jat and Atpadi tahsils contain Low Nutritional Density. This is due to drought and scarcity of ground water which resulted in seasonal land utility and low productivity. This leads to population out migration. And the decadal fluctuation recorded 20.87 and 16.28 respectively Jat and Atpadi tahsils in 2001-2011.

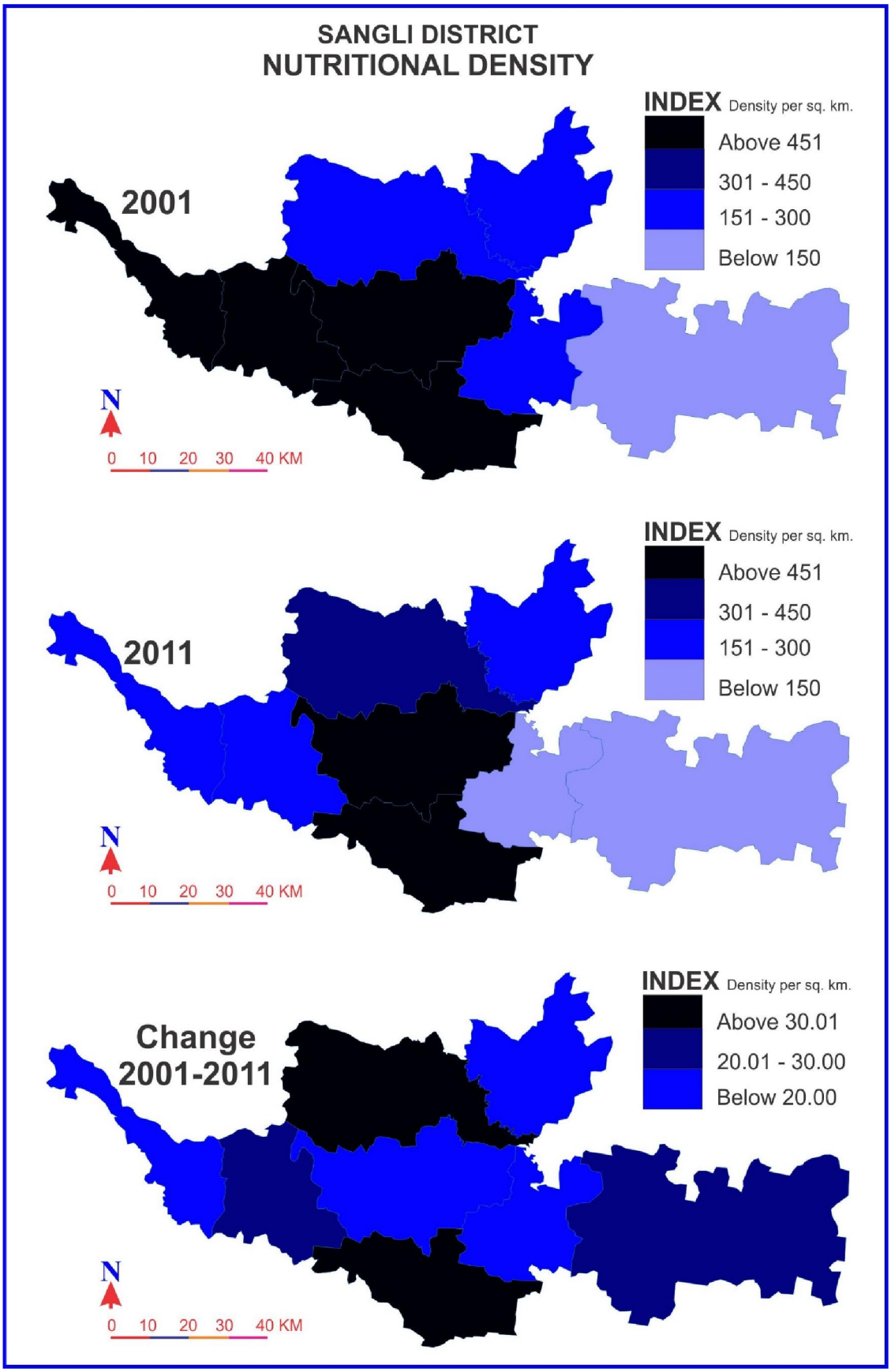
SANGLI DISTRICT
NUTRITIONAL DENSITY
INDEX Density per sq. km.
Above 451
301 - 450
151 - 300
Below 150
2001
N
0 10 20 30 40 KM
INDEX Density per sq. km.
Above 451
301 - 450
151 - 300
Below 150
2011
N
0 10 20 30 40 KM
INDEX Density per sq. km.
Above 30.01
20.01 - 30.00
Below 20.00
Change
2001-2011
N
0 10 20 30 40 KM

Fig. 3.6

3.4.6 PHYSIOLOGICAL DENSITY OF POPULATION (2001-2011)

Physiological density is computed by dividing total population by total cultivated area / Net sown area. The physiological density portrays some of the different trends as compared to arithmetic density for indicating the rural economic condition of region (Singh and Uma Devi)

Table No. 3.7
SANGLI DISTRICT PHYSIOLOGICAL DENSITY

Tahsil	2001			2011			Change
	Area	Pop	Density	Area	Pop	Density	2001-2011
Miraj	727.37	756048	**1039**	727.37	458581	**630.5**	-408.96
Tasgaon	797.86	429761	**538.6**	797.86	416310	**521.8**	-16.859
Khanapur	873.42	258231	**295.7**	873.42	313233	**358.6**	62.9731
Atpadi	612.74	125263	**204.4**	612.74	138455	**226**	21.5295
Jat	1881.8	283950	**150.9**	1881.8	328324	**174.5**	23.5806
K.M'kal	514.22	144596	**281.2**	514.22	152327	**296.2**	15.0344
Walwa	579.02	427377	**738.1**	579.02	456002	**787.5**	49.437
Shirala	390.64	158298	**405.2**	390.64	162911	**417**	11.8088
District Total	6377.07	2583524	**405.1**	6377.07	2E+06	**380.4**	-24.679

*Source – Census of India, Sangli district 2001 and CD for 2011.

1) Region of Very High Physiological Density: (Above 601 persons per Sq.km)

Table shows that, only Miraj and Walawa tahsils included in this category. It is due to irrigation development and use of chemical fertilizers, soluble fertilizers, hybrid seeds, new technology of cultivation resulting increasing carrying capacity of land. But the decadal fluctuation of physiological density decreases -408.9.

2) **Region of High Physiological Density: (451-600 persons per Sq.km)**

During 2001 to 2011, Tasgaon teshil recorded high physiological density. Because of fertile soil and developed irrigation and commercial agriculture practices such as cold storage in these tahsil. But the decadal fluctuation of physiological increases 11.8 in Shirala tahsil.

3) **Region of Moderate Density: (301-450 persons per Sq.km)**

Table depicts that, during 2001to 2011, Shirala tahsil belonged to this category. This region have moderate physiological density as the soil has fertile patches over the region. But the decadal fluctuation of physiological decreases -16.8 in Tasgaon tahsil

4) **Region of Low Physiological Density: (Below 300 persons per Sq.km)**

Table indicates that, during 2001 to 2011, Jat, Kavathe-Mahakal, Khanapur and Atpadi tahsils belonged to this category. The soil condition, type and soil productivity are the factors affecting the pattern of physiological density. In Jat, Kavathe Mahankal, Khanapur tahsil the soil is of poor quality and of low productivity but in Atpadi tahsil the soil is of good quality and productivity but because of scarcity of water yield is low. Hence, these tahsils fall in this category. But the decadal fluctuation of physiological density increased in these tahsils.

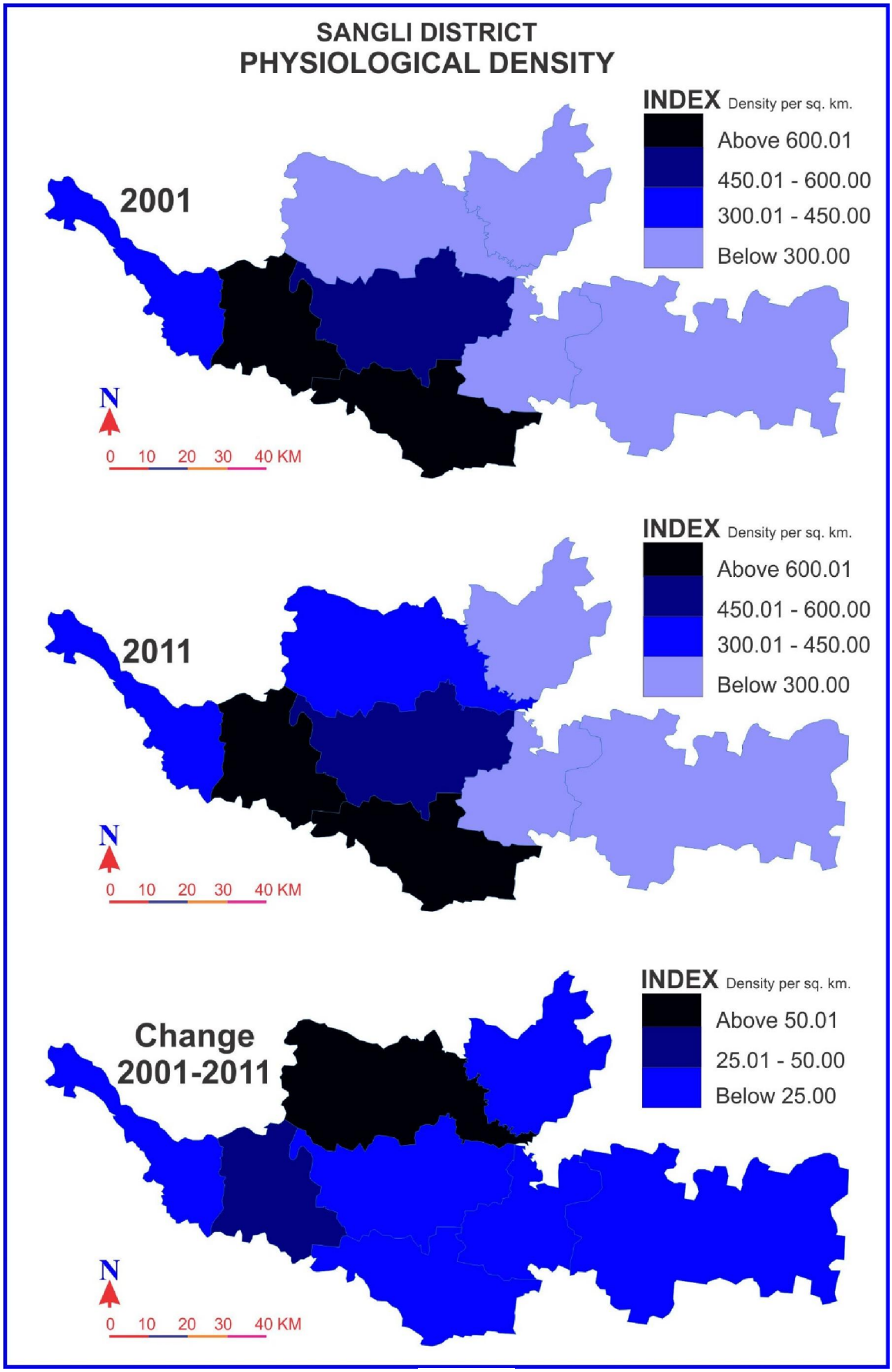
SANGLI DISTRICT
PHYSIOLOGICAL DENSITY
2001
INDEX Density per sq. km.
Above 600.01
450.01 - 600.00
300.01 - 450.00
Below 300.00
N
0 10 20 30 40 KM
2011
INDEX Density per sq. km.
Above 600.01
450.01 - 600.00
300.01 - 450.00
Below 300.00
N
0 10 20 30 40 KM
Change
2001-2011
INDEX Density per sq. km.
Above 50.01
25.01 - 50.00
Below 25.00
N
0 10 20 30 40 KM

Fig. 3.7

3.5 SUMMARY

Population Geography is more concerned with spatial variations in the distribution of population in terms of all such influences that provide the spatial pattern and temporal dimensions. Population distribution over a region is intimately related to its physical, economic and social environment. The geographer's task is to explain the diversity of this distribution in terms of all those influences in population distribution that has been ever changing and its cause and effect which vary with time and space.

The present study has aimed to explain the distribution patterns of population in Sangli district of Maharashtra state. This has been analysed with the help of some physical and economic factors. Population is unevenly distributed throughout the region. In some parts, a dense concentration is found while in others it is found very sparse. This variation is mainly associated not only with the physical characteristics but also with the economic set up of the different parts of the study area.

Three distinct physiographical divisions of the study area influenced the uneven distributional patterns of population, The Central River Basin and The Eastern plateau zone of drought prone conditions. The economics of irrigation and diffusion of agricultural innovations have brought significant change in the economic structure of the area. The impact of these changes on economic condition are well reflected not only in the distributional pattern but also the structure of population of the area.

The general population density of Sangli district is 214, 258 and 301persons per sq. km. in 1981, 1991 and 2001, respectively, which is higher in 1981 and 1991 and lower in 2001 than the state average (204, 257 & 315). There are spatial variations in distribution and density patterns of population within the study area. The central plain zone comprising eastern Shirala, Walwa, Palus and Miraj tahsils have high concentration of population due to black fertile soil, improved irrigation facilities, modern agricultural practices and industrial advancements. Whereas, undulating hilly topography, heavy rainfall and poor economic activities with sparse and tiny villages, cause low population concentration in the extreme western hilly area of Shirala tahsil. While the tahsils of eastern undulating plateau zone of Jat, Kavathe Mahankal, Atpadi and Khanpur have noted moderate to low population concentration. This drought prone zone of the district is lacking in irrigation, communication, trade, industries, with uncertain rainfall conditions.

One fourth people of the study area live in 8 urban centres. Urban population density is much lower in the study area than the state average as noted 1586 and 1996 persons per sq. km (in the study area) in 1991 and 2001 respectively, whereas, state average recorded 4904 and 6586 persons respectively. Sangli-Miraj-Kupwad the most populated and the largest urban centre in the study area having a 'C' class Municipal Corporation, as against Manadur in Shirala tahsil is the smallest census town with only 3,922 population. The density of Urun Islampur urban centre is moderate, while Ashta, Vita and Tasgaon urban centres depict low population densities.

Three fourth population of the study area resides in 721 inhabited villages. Half of the villages show low to very low densities of population as against one third villages depict high to very high population densities. It is observed that rural population density is higher in the study area than that the state i.e. 207 persons per sq. km in 1991 and 236 in 2001, whereas 161 and 185 in the state respectively. Agrarian nature of study area reveals high population densities. It is found that the villages in the central part of the study area comprise of higher densities of population.

Agricultural and physiological densities vary from tahsil to tahsil in the study area and fluctuate during the study period. Agricultural density is noted higher but physiological density is noted lower in the study area than the state average. It is found that tahsils of central plain zone of the study area comprise of higher densities in all the categories, whereas, tahsils in the extreme east and extreme west noted lower densities. It has been, therefore, obvious that soil quality, soil pattern, irrigation and technological inputs, cropping intensity are some of the determining factors for higher densities. This leads to higher agricultural index in the study area. The spatial variability in the process of economic development, scarcity of water, lack of industrialization, transport and communication are some of the problems in the study area. This requires implementation of proper planning programmes.

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CHAPTER - 4
GROWTH OF POPULATION

4.0 INTRODUCTION

The growth rate of population is an important demographic characteristic which not only helps understanding the population change that a society has undergone, but also helps in predicting the future demographic characteristics of an area. Therefore, it is useful to study the pattern of population growth, and analyse this pattern to identify the major factors that determine growth rate of population in the particular region.

The concept regarding growth of population is often used to denote the change in the number of inhabitants of a territory during a specific period of time, irrespective of the fact whether the change is positive or negative. This changed growth can be measured both in terms of absolute numbers and in terms of percentage (Chandna and Sidhu, 1980). Any change in population number is called growth. If this change is in the negative direction, i.e. if it decreases, the growth is negative and when the change is in positive direction, i.e. if the population increases, the growth is positive. This rightly indicates that a growth does not necessarily always indicates an increase.

Population growth refers to the growth of human population in a particular area during a specific period of time.The study of population growth has assumed greater significance in population studies. Demographic dynamics in an area of population growth in particular period of that region has gained

importance. The growth of population is a factor associated with man's occupation, cultural background, historical events and political ideology (Singh and Chaturvedi, 1983). Population growth is the function of three determinants-fertility, mortality and mobility. The difference between human fertility and mortality is called natural increase of the population.

The trend of population growth is a base of the change in overall geographic personality of any area. The analysis of population growth may be seen in two ways: i) The net growth of population over a year ii) It may analyse as individual changes as they occur in birth, death and migration (Ray, 1979). The spatial patterns of population growth in the region are manifestation of the spatial dimension of socio-economic dynamics of its various parts (Chandna, 1986).

The trend of population growth can be known from a set of observed data on population. The growth of population in any area is an index of its economic development, social awakening and many other characters (Chandna and Sidhu, 1980).

The population growth of a region depends on two vital forces which constantly work. One of these forces is natural increase i.e. births minus deaths and the other is migration which includes the in-migration and out-migration (Ramesh Chandran, 1965). Despite their broad implications such analysis yields not only an understanding of the contemporary demographic situation in the study region but also provides clues about trends with this regard in the

years to come (Gosal, 1982). The growth rate assumes spatial significance when viewed from temporal perspective.

Thus, the concept of net change or increase in population is caused by the interaction of four factors such as birth, death, in-migration and out-migration. Death and out-migration decreases the population growth whereas birth and in- migration increases the population growth. So the population growth or its decline is controlled by a relative strength of mortality, fertility and migration.

The population growth is the most fundamental demographic process with which all other demographic attributes are directly or indirectly associated. Therefore, geographical study of population growth of a region is of vital importance for understanding its dynamics as well as planning at the local and regional levels.

4.1 GROWTH RATE OF POPULATION (1981-2011)

The spatial patterns of population growth in the study region are the manifestation of spatial dimensions of socio-economic conditions.

In the present analysis an attempt has been made to study the population growth rate in the Sangli District at tehsil level during 1981-2011 to examine how geographical factors influenced the growth of population. Based on the changes in the growth rate, the entire period has been grouped into three decades. Table 4.1 reveals the spatio-temporal analysis of population growth rate in the study region during last 30 years (1981-2011). It shows that growth rate fluctuates over decades and differs from tehsil to tehsil. The tehsils has been grouped into low, moderate, high and very high growth rate categories for analysis.

Table 4.1

Sangli District : Total Population Growth Rate 1981-2011

Tahsil	Year						
	Population				Growth Rate (%)		
	1981	1991	2001	2011	1981-91	1991-01	2001-11
Miraj	506320	634639	756048	854581	25.34	19.13	13.03
Tasgaon	300597	310318	429761	416310	3.23	38.49	-3.13
Khanapur	217958	221999	258231	313233	1.85	16.32	21.30
Atpadi	84016	111517	125263	148455	32.73	12.33	18.51
Jat	193096	240647	283950	328324	24.63	17.99	15.63
K.M'kal	97274	117901	144596	152327	21.21	22.64	5.35
Walwa	301302	293380	427377	456002	-2.63	45.67	6.70
Shirala	130649	147773	158298	162911	13.11	7.12	2.91
District Total	**1831212**	**2078174**	**2583524**	**2832143**	**13.49**	**24.32**	**9.62**

Source: Compiled by the researcher from:

1. Census of India, District Census Handbook of Sangli, district, 1981-91.
2. Census of India2001 & 2011 Final Population Totals, Maharashtra, Series 28.

1. Region of Very High Growth Rate (Above 30.01 per cent):

It is evident from table 4.1 that very high growth rate of population in the study region is confined to Atpadi tehsil (32.73%) during 1981-1991 and Walwa tehsil (45.67%), Tasgaon tehsil (38.49 %) during 1991-2001. These tehsils are agriculturally developed and have sound source of irrigation from the rivers of Krishna and Warana. They are also highly urbanized, and industrialized well developed transport network. They have affected trade and commercial activities. The improvement in medical facilities awareness among the people about health, establishment of primary Health centers by Govt. of Maharashtra have also caused low death rate. Walwa tehsil noted increasing growth rate of population may be due to reducing rate of infant mortality of female.

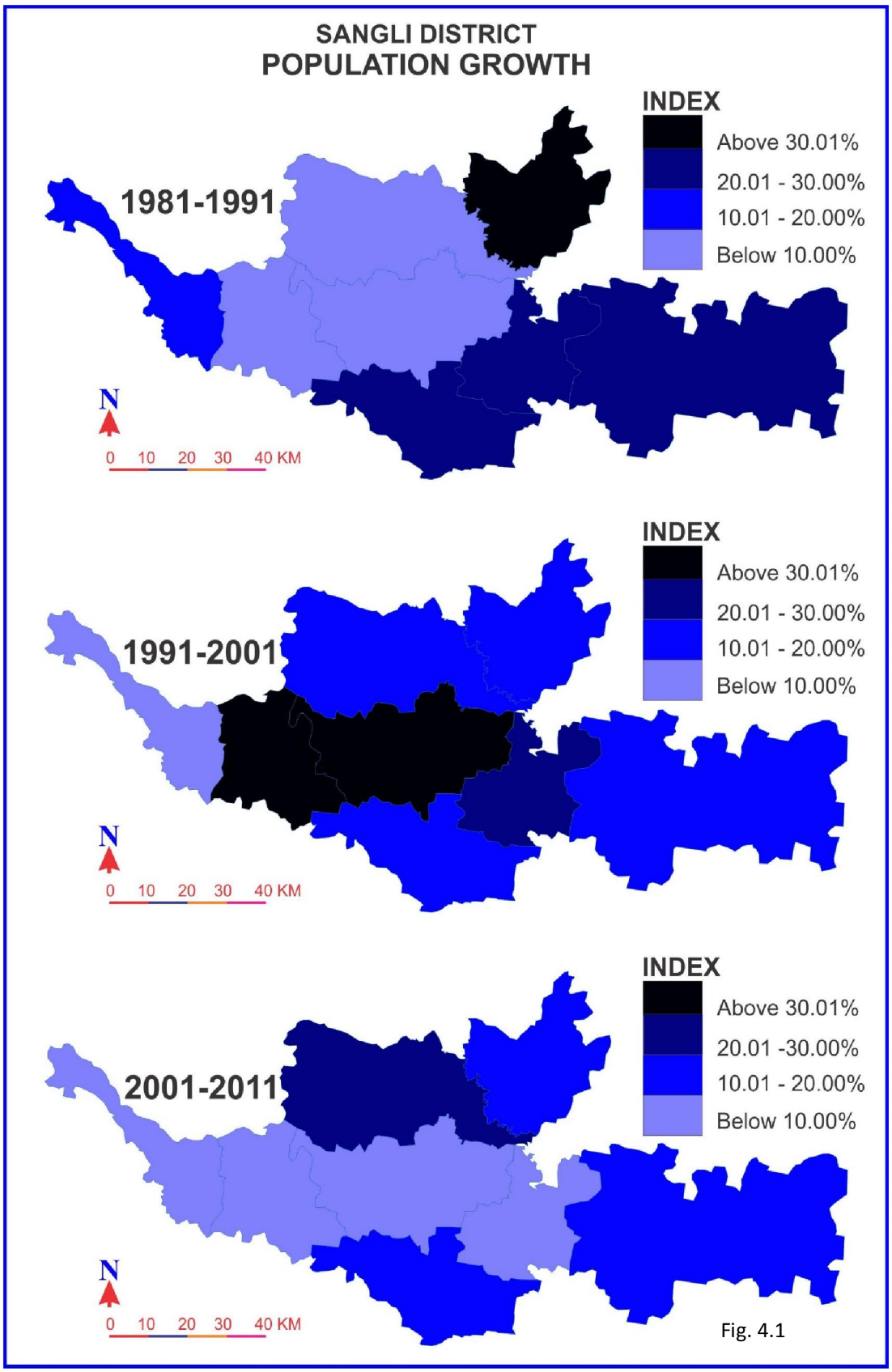
SANGLI DISTRICT
POPULATION GROWTH
INDEX
Above 30.01%
20.01 - 30.00%
10.01 - 20.00%
Below 10.00%
1981-1991
N
0 10 20 30 40 KM
INDEX
Above 30.01%
20.01 - 30.00%
10.01 - 20.00%
Below 10.00%
1991-2001
N
0 10 20 30 40 KM
INDEX
Above 30.01%
20.01 -30.00%
10.01 - 20.00%
Below 10.00%
2001-2011
N
0 10 20 30 40 KM

Fig. 4.1

2. **Region of High Growth Rate (20.01-30 per cent):**

It has been observed, that the tehsils like Kavathe-Mahakal (22.64 %) during 1991 to 2001 and Miraj (25.34 %), Jat (24.63 %) have recorded high population growth rate during 1981-91 due to higher agriculture development. Heavy emphasis was laid on agricultural development and investment. The positive role of the State Government and role of co-operative sectors, development of transportation and communication, improved medical facilities controlling diseases educational facilities have resulted high growth rate. During 2001-2011, Khanapur tehsil (21.30 %) fell into this category due to the decline of death rate and the population in migration. During 1981-2001, Kavathe Mahankal tehsil has changed its category, due to technological improvement in grapevine cultivation and agro-based industrial development.

2. Region of Moderate Growth Rate (10.01-20 per cent):

The moderate growth rate category covered Miraj, Atpadi and Jat tehsils during 1991 to 2011, Khanapur tehsil (16.32 %) and Shirala tehsil (13.11 %) during 1981-1991. The tehsils on the highland zone are characterized by the existence of undulating terrain associated thick forest and lack of cultivation, poor industrialization, transportation, lack of communication, lack of infrastructure facilities, small tiny and scattered villages and absence of towns. These adverse conditions have affected the growth rate of the region. During 1981-91 tehsil like Khanapur belonged to this category due to the check of population out-migration. The out-migration of population in search of employment opportunities and decline in birth rate.

The declining birth rate is also due to sound medical facilities in rural areas, and effective implementation of family planning programs checked the birth rate all over region. The newly formed Kavathe-Mahakal tehsil has also acquired the same category. The consistency in the efforts made to implement family planning programmes in the state in general and study region in particular has led to cut down overall birth rate.

3. Region of Low Growth Rate (Below 10 per cent):

Table No. 4.1 depicts that the tehsil of Tasgaon during 1981-91(3.23 %) and 2001-2011 (-3.13 %), Khanapur (1.85 %) during 1981-91, Kavathe-Mahakal (5.35 %) during 2001-11, Walwa (-2.63 %) during 1981-91 and (6.70 %) 2001-11 and Shirala have shown low growth rate (7.12 %, 2.91 %) during 1991 to 2011. Khanapur and Miraj tehsils have low growth rate due to process of inter tehsil migration.

4.2 GROWTH RATE OF RURAL POPULATION (1981-2011)

Table No. 4.2 and Fig 4.2 indicates that rural population growth rate has started showing declining trend from 1981. As compared to general and urban population growth rate, rural population growth rate is low due to migration of population from rural area. The rural population growth fluctuates over decades and differs from tehsil to tehsil. Table 4.2 reflects the declined changes of rural growth rate and respective category of individual tehsils during the study period.

Table No. 4.2

Sangli District : Growth Rate of Rural Population 1981-2011

Tahsil	Year						
	Population				Growth Rate (%)		
	1981	1991	2001	2011	1981-91	1991-01	2001-11
Miraj	237332	270888	293546	325954	14.14	8.36	11.04
Tasgaon	253926	310318	396304	378365	22.21	27.71	-4.53
Khanapur	193877	221999	216427	313233	14.51	-2.51	44.73
Atpadi	84016	111557	125263	138455	32.78	12.29	10.53
Jat	193096	240647	283950	328324	24.63	17.99	15.63
K.M'kal	97274	117901	144596	152327	21.21	22.64	5.35
Walwa	246953	293380	335844	456002	18.80	14.47	35.78
Shirala	130649	140351	154376	162911	7.43	9.99	5.53
District Total	**1437123**	**1707041**	**1950306**	**2255571**	**18.78**	**14.25**	**15.65**

***Source:** *Compiled from:*

1. District Census Handbook of Sangli, districts, 1981-91.

2. Census of India2001, Final Population Totals, Maharashtra, Series 28

1. **Region of Very High Growth Rate of Rural Population (Above 30.01 per cent):**

Table No. 4.2 represents that tehsils like Khanapur (44.73%) during 2001-11, Atpadi (32.78%) during 1981-91 and Walwa (35.78%) during 2001-11 are characterized by very high growth rate. These tehsils have been agriculturally developed and have witnessed success in agro-based industries. This resulted demand for agricultural labours. Apart from this, advanced and modern medical facilities, developed transportation network, availability of industrial employment opportunities have resulted into high growth rate of population. The migration of agricultural labours and decline of death rate have resulted in high growth rate of population which could be attributed to the establishment of Sugar Factories, development of irrigation facilities and consequent employment opportunities to the people.

2. **Region of High Growth Rate of Rural Population (20.01-30 per cent):**

Fig. 4.2 indicates the fact that the high growth rate of rural population, during 1981 to 2001, was observed in Tasgaon and Kavathe-Mahakal tehsils. During 1991-2001, Jat tehsil (24.63 %) recorded this trend. The means of irrigation such as lift Irrigation and construction of dams on the rivers of Krishna, Yerala, Warana and Agrani attracted migration of agricultural labours from other region. Tasgaon tehsil has experienced the same position during 1981-91, due to grapevine cultivation and marketing process in Tasgaon tehsil. Establishment of textile industries in tehsils have further attracted population resulting into an upward trend in growth rate.

3. **Region of Moderate Growth Rate of Rural Population (10.01-20 per cent):**

The moderate growth rate of rural population observed in, Miraj tehsil (14.14 %) during 1981-91and (11.04 %) during 2001-11, Khanapur tehsil (14.51 %) during 1981-91, Atpadi and Jat tehsils during 1991 to 2011, and Walwa tehsil during 1981 to 2001. These tehsils have also resulted into migration for seeking employment elsewhere. The tehsils located in the central parts of Krishna river valley like Miraj tehsil has recorded substantial irrigation facilities and agricultural activity. However, the availability of jobs or employment opportunities from the nearest urban areas have caused rural-urban migration affecting the growth rate.

Khanapur tehsil has shown upward movement in this category because agricultural development and more specially the establishment of agro-based industries are important components to decrease the migration. High birth rate also promotes the growth rate. The effective implementation of family planning programmes have resulted into considerable decline in birth rate. The above facts and processes of urbanization have affected the rural population growth.

4. Region of Low Growth Rate of Rural Population (Below 10 per cent)

Fig. 4.2 shows that Tasgaon tehsil experienced category of low growth rate during 2001-11 (-4.53%), Khanapur during 1991-2001 (-2.51 %), Kavathe-Mahakal during 2001-11 (5.53 %) and Shirala tehsil recorded low growth rate during 1981 to 2011. There is minimum development in agriculture, poor stage of manufacturing industries have created problems in employment leading to migration. Therefore from 1981, it is generally observed that the growth rate has been declining sharply in rural areas. During 1981-91, Shirala tehsil has reflected sharp decline in the growth rate. Whereas during the period of 1991-2001, Shirala, Miraj tehsils have acquired similar position. This is due to improved health care and family welfare facilities thereby controlling the growth of population.

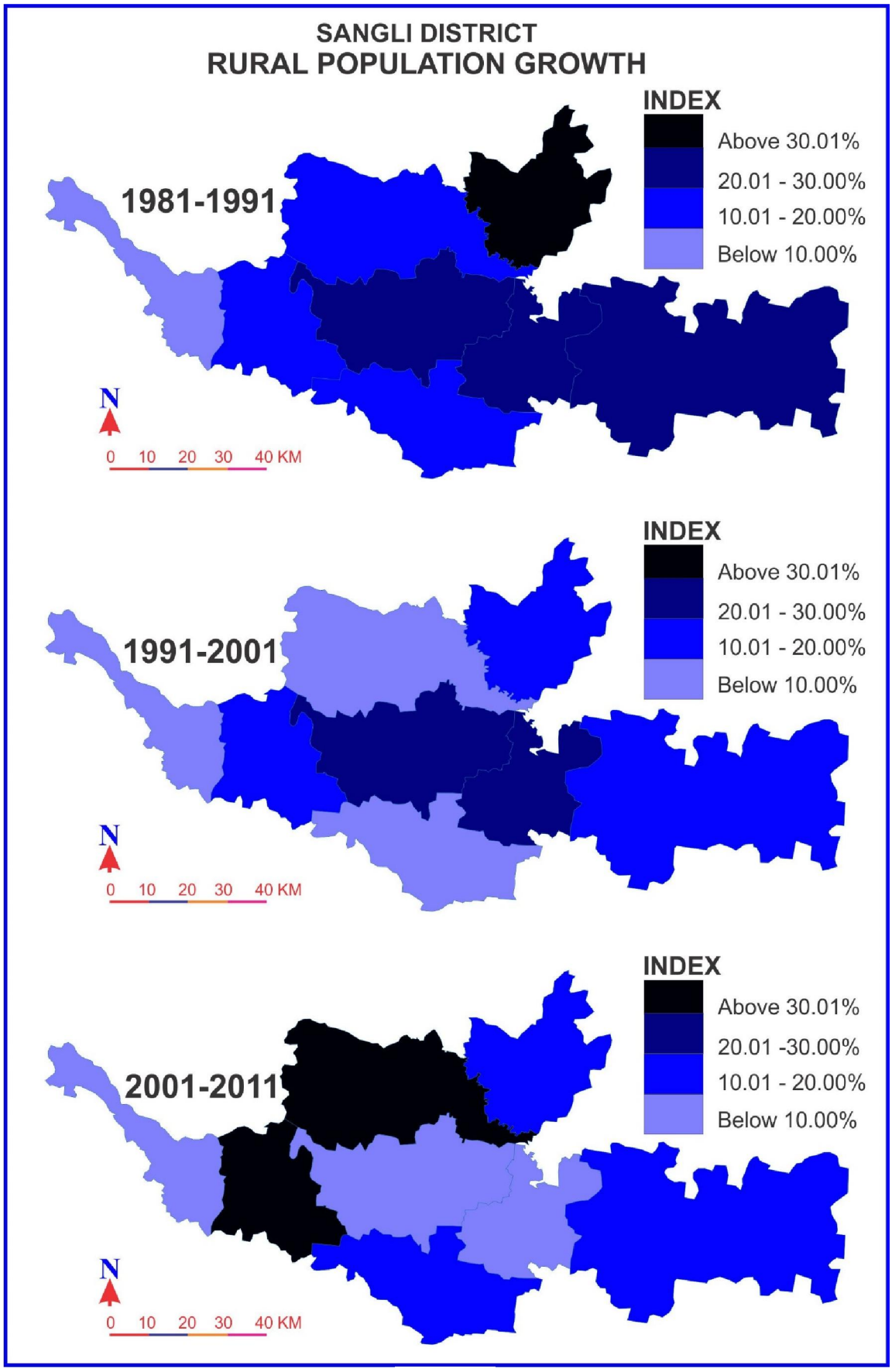
SANGLI DISTRICT
RURAL POPULATION GROWTH
1981-1991
INDEX
Above 30.01%
20.01 - 30.00%
10.01 - 20.00%
Below 10.00%
N
0 10 20 30 40 KM
1991-2001
INDEX
Above 30.01%
20.01 - 30.00%
10.01 - 20.00%
Below 10.00%
N
0 10 20 30 40 KM
2001-2011
INDEX
Above 30.01%
20.01 -30.00%
10.01 - 20.00%
Below 10.00%
N
0 10 20 30 40 KM

Fig. 4.2

4.3 GROWTH RATE OF URBAN POPULATION (1981-2011)

The spatial pattern of urban population growth is more interesting for the geographers, researchers as well as planners. There existed phenomenal changes in urban population growth in the study region. The table no. 4.3 records population growth rate of urban area in the study region. It is observed that urban population growth rate differs from tehsil to tehsil and varies over the decades during 1981-2011. They are grouped into Very High, High, Moderate and Low categories.

Table 4.3

Sangli District : Growth Rate of Urban Population 1981-2011

Tahsil	Year						
	Population				Growth Rate (%)		
	1981	1991	2001	2011	1981-91	1991-01	2001-11
Miraj	268988	363751	462502	854581	35.23	27.15	84.77
Tasgaon	46671	29392	33457	37945	-37.02	13.83	13.41
Khanapur	24081	32018	41804	48289	32.96	30.56	15.51
Atpadi	-	-	-	-	-	-	-
Jat	-	-	-	-	-	-	-
K.M'kal	-	-	-	-	-	-	-
Walwa	54349	69864	91533	104496	28.55	31.02	14.16
Shirala	-	7422	3922	-	-	-47.16	-100.00
District Total	**394089**	**502447**	**633218**	**1045311**	**27.50**	**26.03**	**65.08**

***Source:** *Compiled from:*

1. District Census Handbook of Sangli, districts, 1981-91.

2. Census of India2001, Final Population Totals, Maharashtra, Series 28

1. Region of Very High Growth Rate of Urban Population (Above 30.01 per cent)

It is revealed from fig no. 4.3 that, Miraj tehsil fall under high urban population growth rate category during 1981-91 and 2001-11 (above 30 %). Khanapur tehsil (32.96 %) during 1981-91 and (30.56 %) during 1991-2001,

and Walwa tehsil (31.02 %) during 1991-01. These tehsils are part of central plain zone of the study and are developed in commercial agricultural activities. It is known as the sugarcane production belt. It is industrial developed area. These tehsils are the most urbanized in the study region mainly due to Sangli, Miraj, Vita and Islampur industrial centers (handloom and power loom). Miraj, Jaysingpur and Kurundwad are trade and commercial centers. The availability of employment opportunities, good accessibility are the facts responsible for in migration of population. Miraj city provided medical facilities and infrastructural facilities through road and railway network influencing population in-migration as well as high birth rate causing high growth rate.

2. Region of High Growth Rate of Urban Population (20.01-30 per cent):

Fig. no. 4.3 represents high urban population growth rate during the period 1991-01, Miraj tehsil (27.15 %) and Walwa tehsil (28.55 %) during 1981-91. These tehsils are distributed all over the region and there suburban areas lacked in secondary and tertiary occupation and employment opportunities. Slow migration and low birth rate influenced the growth rate of population. The impact of severe drought during the period of 1971-81 affected out-migration of population in the study area. Walwa tehsil has experienced growth in urban population due to rural-urban migration and increased birth rate. While the development of agriculture in rural area of Miraj tahsil have checked out-migration resulting in decline status of growth rate.

3. Region of moderate Growth Rate of Urban Population (10.01-20.0 per cent):

It has been seen from table 4.4 that during 1991-01, Tasgaon tehsil has noted moderate growth rate of urban population (13.83 % & 13.41 %) and Walwa tehsil (14.16 %) during 2001-11. This is due to less urbanization of this area. The status of Walwa and Tasgaon tehsils improved from low growth rate category to this category due to increased urban birth rate.

4. Region of Low growth Rate of Urban Population (Below 10 per cent):

Table no. 4.3 observed that. Atpadi, Jat and Kavathe-Mhakal tehsils not anymore urban centers during 1981 to 2011. Tasgaon tehsil recorded low growth rate (-37.02 %) during 1981-91 and Shirala tehsil during 1991 to 2011 came under this category. After 1981, growth rate of Tasgaon (-37.02%) tehsil sharply declined. It was due to urban-rural migration and declassification of Kirloskarwadi census town in Tasgaon tehsil. Rural industrial development and irrigation development have taken place in Shirala tehsil to better improvement in economic activities. This has checked rural urban migration.

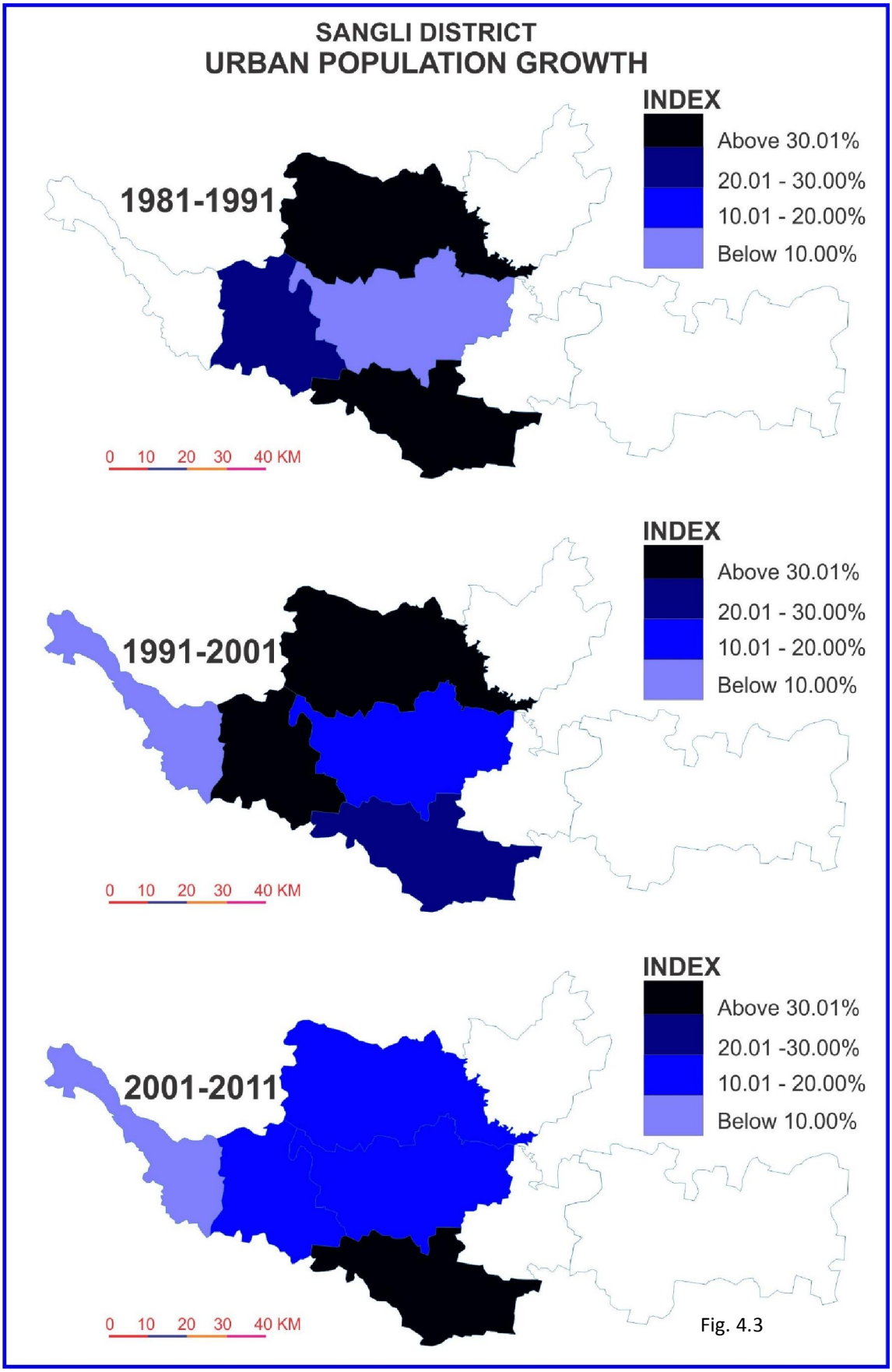
SANGLI DISTRICT
URBAN POPULATION GROWTH
1981-1991
INDEX
Above 30.01%
20.01 - 30.00%
10.01 - 20.00%
Below 10.00%
0 10 20 30 40 KM
1991-2001
INDEX
Above 30.01%
20.01 - 30.00%
10.01 - 20.00%
Below 10.00%
0 10 20 30 40 KM
2001-2011
INDEX
Above 30.01%
20.01 -30.00%
10.01 - 20.00%
Below 10.00%
0 10 20 30 40 KM

Fig. 4.3

4.4 GROWTH RATE OF MALE POPULATION (1981-2011)

Spatio-temporal analysis of male population growth rate in Sangli district during 1981-2011 has been given in table no. 4.4 Fig. no. 4.4 it indicates that male population growth rates fluctuates from tehsil to tehsil and over decades in the Sangli district. It is also observed that male population growth rate in the study region has been indicating declining trend due to continuous implementation of family planning programmee. Following are the four categories (Very High, High, Moderate and Low) which have been discussed.

Table 4.4

Sangli District : Growth Rate of Male Population 1981-2011

Tahsil	Year						
	Population				Growth Rate (%)		
	1981	1991	2001	2011	1981-91	1991-01	2001-11
Miraj	263501	328950	389149	434613	24.84	18.30	11.68
Tasgaon	153647	158524	220373	213445	3.17	39.02	-3.14
Khanapur	106534	108727	129113	156391	2.06	18.75	21.13
Atpadi	41976	57158	63067	69410	36.17	10.34	10.06
Jat	98416	124445	145778	168256	26.45	17.14	15.42
K.M'kal	48977	59808	73710	77615	22.11	23.24	5.30
Walwa	154900	150944	220542	235160	-2.55	46.11	6.63
Shirala	63236	72178	78356	80838	14.14	8.56	3.17
District Total	**931187**	**1060734**	**1320088**	**1435728**	**13.91**	**24.45**	**8.76**

Source: Compiled from:

1. District Census Handbook of Sangli, districts, 1981-91.
2. Census of India2001, Final Population Totals, Maharashtra, Series 28

1. Region of Very High Growth Rate of Male Population (Above 30.01 per cent):

As presented in table no. 4.4, very high growth rate of male population was observed in Tasgaon tehsil (39.02 %) during 1991-01, Atpadi tehsil (36.17

%) during 1981-91 and Walwa tehsil (46.11 %) during 1991-01. These tehsils are well urbanized. Irrigated farming creates a demand for farm workers, providing high degree availability of male employment. This has resulted in male selective in-migration and their families live in rural area.

2. **Region of High Growth Rate of Male Population (20.01-30 per cent):**

It is evident from fig. no. 4.4 that, there was a high growth rate of male population in Miraj tehsil (24.84 %) during 1981-91, Khanapur tehsil (21.13 %) during 2001-11, Jat tehsil (26.45 %) during 1981-91 and Kavathe-Mahakal tehsil during 1981-01. There is an intensive sugarcane cultivation and agro-based and manufacturing industries. Centers like Islampur, Kirloskarwadi and Tasgaon are hence attracting males as farm worker and industrial workers. During 1981-91, tehsils like Miraj and Shirala recorded increase in population growth rate due to the process of urbanization. The regional disparities in development exist wherever there is male selective out migration in the state.

3. **Region of Moderate Growth Rate of Male Population (10.01-20 per cent):**

The moderate category of the male growth rate recorded Miraj, Jat and Atpadi tehsils during 1991 to 2011, Khanapur tehsil (18.75 %) during 1991-01 and Shirala tehsil (14.14 %) during 1981-91. These tehsils are in the western

part of the study region with adverse topographical and climatic condition. The drought prone climatic conditions of tehsils have resulted in poor soil and low agriculture development. There is a lack of urbanization, transport and infrastructural facilities. Further, there is male selective out migration from these tehsils for seeking job and employment. These tehsils of the study region witnessed decline in male population growth rate due to severe drought conditions as it caused male selective out migration from these tehsils. Khanapur tehsils witnessed increase in male population.

1. **Region of Low Growth Rate of Male Population (Below 10 per cent):**

The table no. 4.4 indicates the low male growth rate in Tasgaon and Khanapur tehsils (3.17 % & 2.06 %) during 1981-91 and (-3.14 %) during 2001-11, Kavathe-Mahakal tehsil (5.30 %) during 2001-11, Walwa tehsil (-2.55 % & 6.63 %) during 1981-91 & 2001-11 respectively and Shirala tehsil during 1991to 2011. Khanapur tehsil was affected by formation of new tehsils viz. Jat and Atpadi. Male workers migrates to Mumbai for job and employment.

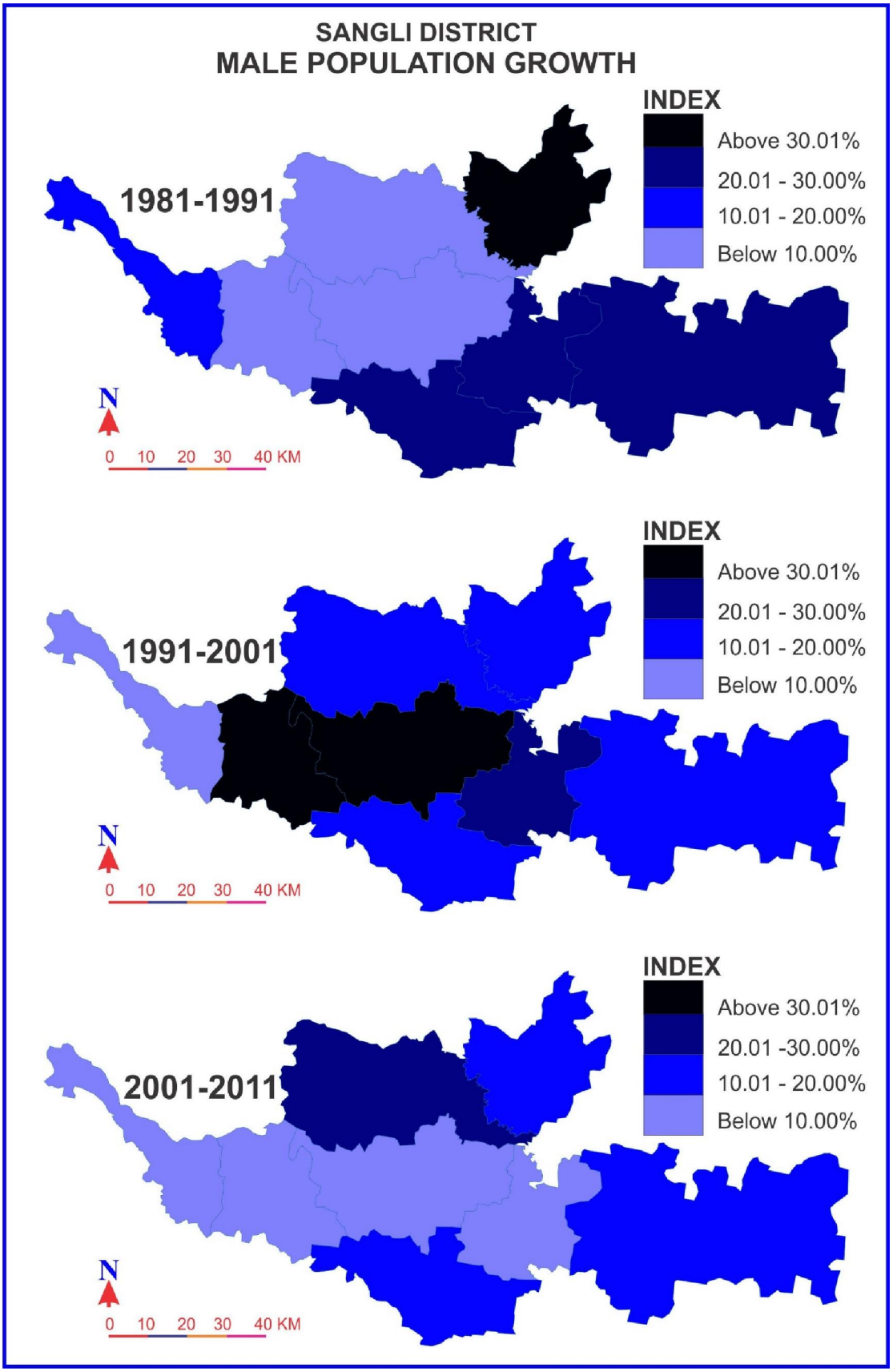
SANGLI DISTRICT
MALE POPULATION GROWTH
1981-1991
INDEX
Above 30.01%
20.01 - 30.00%
10.01 - 20.00%
Below 10.00%
N
0 10 20 30 40 KM
1991-2001
INDEX
Above 30.01%
20.01 - 30.00%
10.01 - 20.00%
Below 10.00%
N
0 10 20 30 40 KM
2001-2011
INDEX
Above 30.01%
20.01 -30.00%
10.01 - 20.00%
Below 10.00%
N
0 10 20 30 40 KM

Fig. 4.4

4.5 GROWTH RATE OF FEMALE POPULATION (1981-2011)

Spatio-temporal analysis of female population growth rate has been shown in table 4.5. It is observed that, the female growth rate fluctuates from decade to decade and changes from tehsil to tehsil. It was very low as compared to male population within the study period.

Table 4.5

Sangli District : Growth Rate of Female Population 1981-2011

Tahsil	Year						
	Population				Growth Rate (%)		
	1981	1991	2001	2011	1981-91	1991-01	2001-11
Miraj	242819	305689	366899	419968	25.89	20.02	14.46
Tasgaon	146950	151794	209388	202865	3.30	37.94	-3.12
Khanapur	111424	113272	129118	156842	1.66	13.99	21.47
Atpadi	42040	54399	62196	69045	29.40	14.33	11.01
Jat	94680	116202	138172	160068	22.73	18.91	15.85
K.M'kal	48297	58093	70886	74712	20.28	22.02	5.40
Walwa	146402	142436	206835	220842	-2.71	45.21	6.77
Shirala	67413	75595	39942	82073	12.14	-47.16	105.48
District Total	**900025**	**1017480**	**1223436**	**1386415**	**13.05**	**20.24**	**13.32**

Source: Compiled from:

1. District Census Handbook of Sangli, districts, 1981-91.
2. Census of India2001, Final Population Totals, Maharashtra, Series 28

1. Region of Very High Growth Rate of Female Population (Above 30.01 per cent):

It is seen from Table no. 4.5 that, during 1991-01, very high female population growth rate was noted in Tasgaon tehsil (37.94 %) and Walwa tehsil (45.21 %) and Shirala tehsil (105.48 %) during 2001-11. These tehsils are urbanized having more employment in industries. The development of agriculture and cottage industries and high status of women in the society have affected female growth rate. In these tehsils high literacy level of females and availability of education facilities for women and technological improvement in medical facilities led to low birth rate and low mortality rate. There was high

proportion of females due to availability of job opportunities in Handloom and power loom for women.

2. Region of High Growth Rate of Female Population (20.01-30 per cent):

The study revealed that, there was high female growth rate during 1981-91 in Miraj and Kavathe-Mahakal tehsils and Khanapur tehsil (21.74 %) during 2001-11. These tehsils are located in the central part of the study region within the banks of Krishna and Yerala Rivers having fertile soil region and irrigation facilities. The production of cash crop such as sugarcane is more. The high degree medical facilities check the female mortality rates which has caused high female population growth rate. The proportion of male selective out migration increased the female numbers. Decline female birth rate causes decline in female growth rate. During 1981-91, demand for women workforce in grapevine cultivation in Kavathe-Mahankal tehsil and Tasgaon tehsil in 1991caused employment of female workers in this kind of work.

3. Region of Moderate Growth Rate of Female Population (10.01-20 per cent):

Fig. no. 4.5 depicts that during 1991 to 11, Atpadi and Jat tehsils are covered under moderate female growth rate category and Miraj tehsil (14.46 %) during 2001-11, Khanapur tehsil (13.99 %) during 1991-01 and Shirala tehsil (12.14 %) during 1981-91. Tehsils having undulating topography and drought prone zone revealed lack of opportunities which resulted in economic backwardness. The female out- migration and lack of medical facilities caused high death rate of female. It resulted into low proportion of female growth rate in comparison to other tehsils.

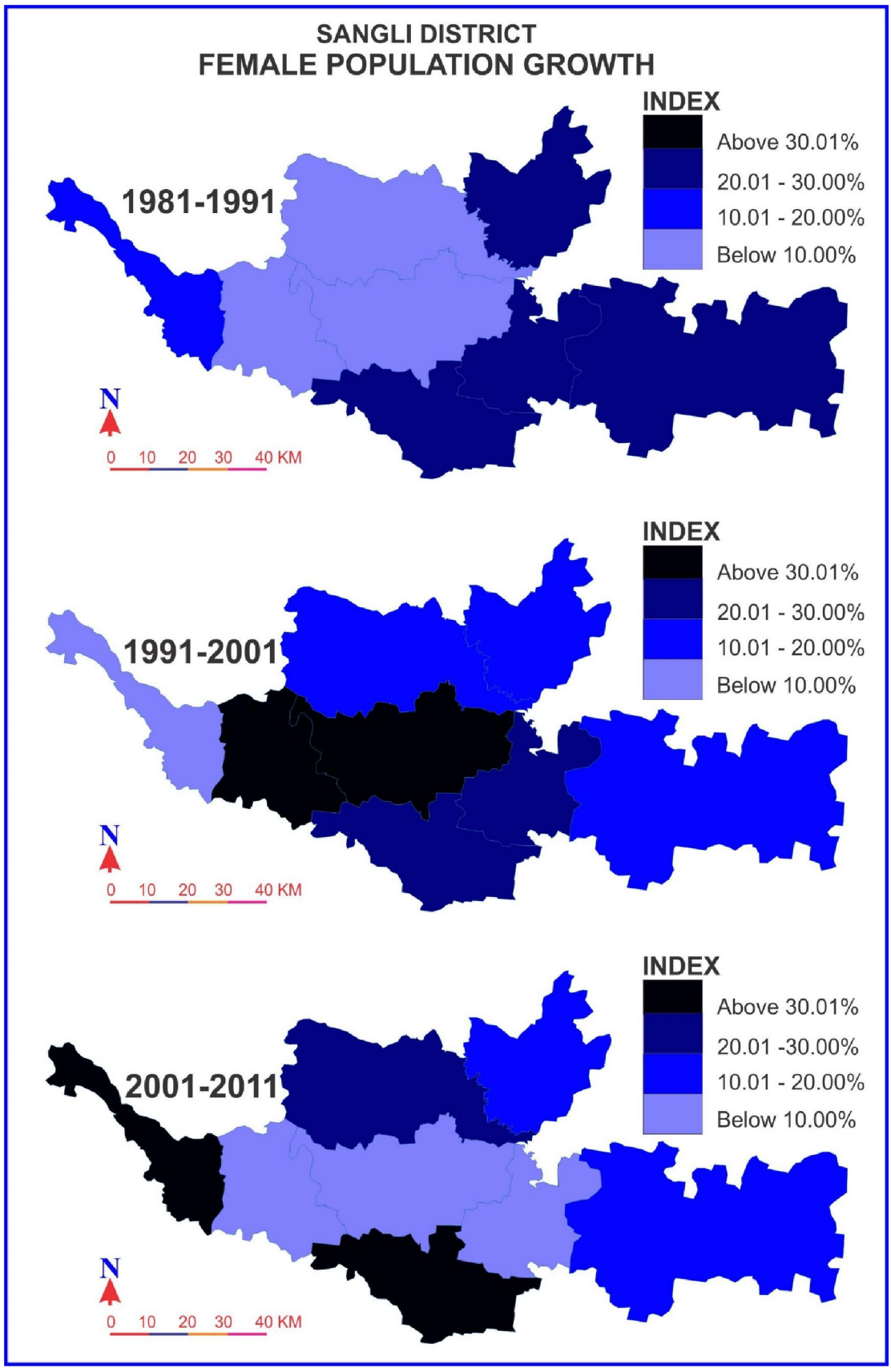
SANGLI DISTRICT
FEMALE POPULATION GROWTH
1981-1991
INDEX
Above 30.01%
20.01 - 30.00%
10.01 - 20.00%
Below 10.00%
N
0 10 20 30 40 KM
1991-2001
INDEX
Above 30.01%
20.01 - 30.00%
10.01 - 20.00%
Below 10.00%
N
0 10 20 30 40 KM
2001-2011
INDEX
Above 30.01%
20.01 -30.00%
10.01 - 20.00%
Below 10.00%
N
0 10 20 30 40 KM

Fig. 4.5

4. **Region of Low Growth Rate of Female Population (Below 10 per cent):**

Fig. no. 4.5 shows that, Tasgaon tehsil (3.30 % & -3.12 &) during 1981-91 & 2001-11, Khanapur tehsil (1.66 %) during 1981-91, Kavathe-Mahakal tehsil (5.40 %) during 2001-11. Walwa tehsil (-2.71 % & 6.77 %) during 1981-91 & 2001-11 and Shirala tehsil during 1981 to 01. It is due to the impact of newly formed tehsils like Kavathe-Mahankal, Jat and Atpadi in Sangli district during 1964 which has caused inter-tehsil population.

4.6 SUMMARY

It has been observed that growth rate differs from tehsil to tehsil. It fluctuates over decades. During last forty years the population of the region grew in absolute numbers but the growth rate exhibited declining trend up to 2001. The growth rate of the study region is analyzed in three periods 1981-91, 1991-01 and 2001-2011. It is found that in the study area growth rate is low as compared to state average. There were various factors affecting the growth rate during the 30 years span. After the independence, the implementation of five year plans, medical facilities to control diseases and epidemics, implementation of family planning programme to control birth rate, development of agriculture, irrigation, human resources and economic activities have all played significant role in changing the growth rate of the Sangli district due to agrarian nature of the area under study. The high rural population led to out- migration because of lack of economic activities. Another factor is check in the birth rate by

improved medical facilities and implementation of family planning programme. The impact of natural calamities like drought further checks the growth rate. Enhancement in irrigation facilities developed agricultural practices and development of agro-based industries has generated employment opportunities in the study region.

The tehsil wise population growth during 1981-2011 was grouped into four different population growth regions in the study region i.e. very high, high, medium and low population growth regions. Generally the high population growth was registered in the tehsils of the central part of the study region. This consists of fertile part of Krishna, Yerala, and Varana Rivers. This part of the study showed high degree of urbanization with industrial development. The commercial agricultural practice and concentration of huge medical facilities caused medium growth of population in north-eastern and southern tehsils. It is due to good agricultural activities and growth of agro-based and cottage industries. Low population growth was noted in tehsils of western part of study region. This is mainly due to undulating terrain, lower rainfall, less development of industries, lack of transport and communication. The said situation resulted in population migration for employment in other regions.

Rural and urban population growth rate is low as compared to state average. The rural growth rate of population has declined due to out-migration of people from rural area to urban center and outside the region for seeking job and employment opportunities. The urban population growth rate increased from 1981. This was due to high degree of urbanization, classification of

number of new towns and industrial growth. The commercial agriculture practice, agro-based industrial growth provided all types of facilities in rural area. It checked the migration from rural area. On the other hand, high cost of living in the urban area caused the workers to live alone leaving their families in rural area.

It is found that, male-female population growth rate also fluctuated in time and space. During 1981-91, male growth rate is higher than the female growth rate. It is due to enhancement in irrigation facilities in the study region which improved economic opportunities in agriculture. The growth of agro-based industries checks the male selective out migration. After 1981, female growth rate has declined sharply. The female birth rate was also controlled by technological improvement in medical facilities such as sex identification.

However, it may be noted that fertility, mortality and migration are the three major demographic factors which affect patterns and temporal changes of population growth. Fertility and mortality check the growth rate and migration changes pattern of population growth. In the study region, temporal changes of population growth depended upon birth rate, death rate and changing economic character. Migration played an important role on regional disparities. The above discussed factors and physiography, climate, soil and drainage are physical factors which have affected the growth of population directly or indirectly. The economic activity, industrial development, transportation, communication, social factors, social changes, taboos, ethics and regional

imbalances are numerous other factors which are related to the population growth.

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CHAPTER-5
SEX RATIO

5.0 INTRODUCTION:

Sex ratio is a significant demographic character of population. It can reflect all characteristics like social, economic and migration. Imbalance in the sex ratio result in lower fertility and slower growth. Important deviation from a balanced sex ratio originates from various social and demographic factors.

Sex ratio means proportion of females to per thousand male population. It is most reliable element of population. It is an important aspect of population composition that set future rates of fertility, mortality and migration.

The study of sex ratio is very important to population geographer. It reflects socio-economic conditions prevailing in an area, it is very useful tool for regional analysis. (Franklin).

The sex ratio is a function of three factors i.e. sex ratio at birth, Change in mortality between both sexes at different stages of life and sex selective migration. (Clarke).

An analysis of sex ratio is important for paper understanding of various demographic characteristics of any region.

The demographic attributors of population is one of the most important fundamental and directly related to the reproductive potential of mankind.

Many socio-economic relationships are intimately related to the balance of disparity between the number of males and females (Trewartha). The different nature of the sex ratio in spatio-temporal dimension takes place.

5.1 TRENDS IN SEX RATIO (1981-2011)

The sex ratio of Sangli District was 967 per thousand male during 1981, it declined up to 959 per thousand male in 1991. It was declining trend in sex ratio but in the next census it raised by 13 per thousand males i.e. 959 females increased up to 972 per thousand males in 2001 but again it declined up to 966 per thousand male, it means -6 change per thousand males.

The urban population of Sangli District was 919 females per thousand males, it was increased by 13 in 2001 and 32 in 2011 per thousand males. There was negative trend in rural population of Sangli District. The rural sex ratio of Sangli District was decreased by 8 in 1991 and increased by 13 in 2001 and again it reduced by 16 in 2011.

5.2 SANGLI DISTRICT TEHSIL WISE SEX RATIO (1981-2011):

The spatial pattern of the sex ratio during 1981 to 2011 has been decreased in this section. There is regional disparities in sex ratio within the study area with regard to economic activities. The process of urbanization, migration patterns and natural hazards like drought, famine affects, sex disparity and differences in region.

The study of spatio-temporal analysis of sex ratio at tehsil level may be grouped into high, moderate and low categories of sex ratio.

1. Region of high Sex Ratio (above 1000):

The tehsils like Khanapur, Atpadi and Shirala concord in the category of high sex ratio i.e. above 1000 females per thousand males. Khanapur has it sex ratio 1046(1981), 1042(1991), 1000(2001) and 1003(2011) respectively. Atpadi tehsil shows high sex ratio during 1981 i.e.1002 but unfortunately it declined in 1991, again increased in 2001 and again declined in 2011 due to drought and famines during 2002 to 2005. The Shirala tehsil also shows the declining trend in this category i.e. 1066(1981), 1047(1991), 1020(2001) and 1015(2011), means it shows negative fluctuation in the category of high sex ratio. The impact of general check-up females birth has to decrease in females numbers.

Table No. 5.1

Sangli District: Total Sex Ratio 1981-2011

Tehsil	Decade				Change		
	1981	1991	2001	2011	1981-91	1991-01	2001-11
Miraj	922	929	943	966	7	14	23
Tasgaon	956	958	950	950	2	-8	0
Khanapur	1046	1042	1000	1003	-4	-42	3
Atpadi	1002	952	986	995	-50	34	-31
Jat	962	934	948	951	-28	14	3
K. M'Kal	986	971	962	963	-15	-9	1
Walwa	945	944	1031	939	-1	87	-92
Shirala	1066	1047	1020	1015	-19	-27	-5
District total	967	959	972	966	-4	9	-6

***Source:** 1. District Census Handbook of Sangli, districts, 1981-91

2. Census of India2001& 2011 Final Population Totals, Maharashtra, Series 28.

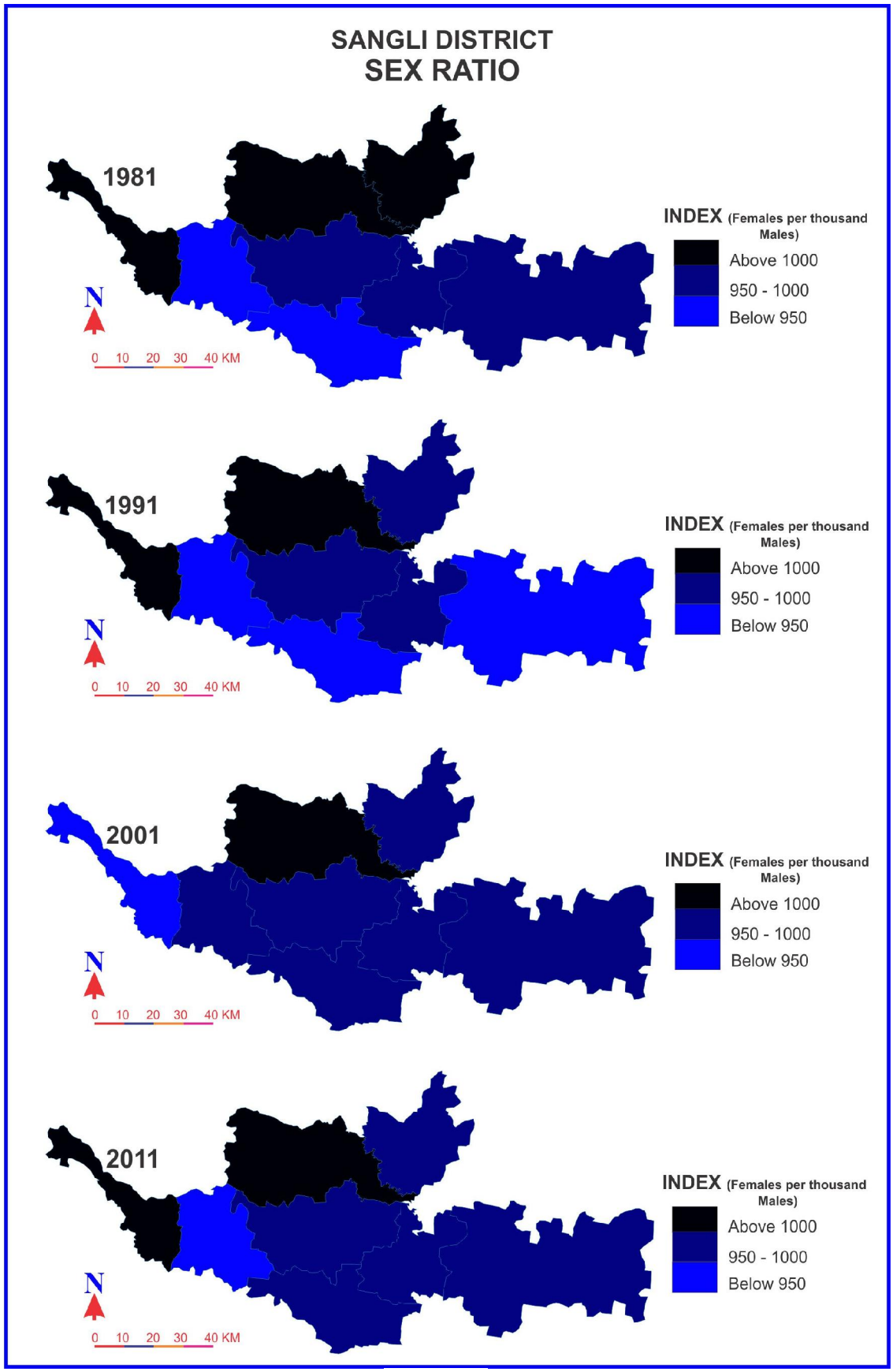
SANGLI DISTRICT
SEX RATIO
1981
1991
2001
2011
N
0 10 20 30 40 KM
INDEX (Females per thousand Males)
Above 1000
950 - 1000
Below 950

Fig. 5.1

2. Region of Moderate Sex Ratio (950 to 1000):

During 1981 Tasgaon, Jat, Kavate-Mahakal were in this category of moderate sex ratio. During 1991 Atpadi tehsil added in this category with 952 females per thousand males. In 1991 only three tehsils were under the category of moderate sex ratio i.e. Tasgaon (958), Atpadi (952), and Kavate-Mahakal (971), and in 2001 same tehsils remain in same category. In the year 2011 more tehsils added in the category of moderate sex ratio in study area i.e. Jat tehsil with 951 sex ratio.

Sex ratio depends on economic activities governed by rainfall condition and topography.

3. Region of Low Sex Ratio (below 950):

Low sex ratio found in Miraj (922), Walwa (945) during 1981. In the year 1991 Miraj, Atpadi, Walwa and Jat Tehsils were in this category. But Walawa and Atpadi tehsils got changed in 2001 while Miraj and Jat tehsils remained under the same category.

Generally low sex ratio found in this regions because better development in agriculture in migration males, better improvement in commercial activities and vicinity of urban centres. There is big industrial units and urbanization in this tehsils causes low sex ratio, because the urban centres of Sangli District do not provide much employment opportunities for women.

Naturally, only male workers are attracted, resulting in a male dominated adult migration and low sex ratio.

5.3 Rural-Urban Change in Sex Ratio:

It is important to describe the rural- urban sex ratio with its spatio-temporal perspectives during 1981 to 2011.

The rural and urban sex ratio varies from tehsil to tehsil and changes over decades. The differentials in rural-urban sex ratio is mainly the product of selective migration and inequalities in regional development in the study area. The sex ratio in rural population are generally higher than that of urban population, naturally these are higher than the averages for the general population. The sex ratio in highly urbanized centre is generally low. In rural areas the females can manage the traditional occupation. It can be deducted that occupational mobility also shows sex selectivity. These factors in combination with others led to excessive deficiency of females in urban centres. A detailed study has been made in following explanation.

5.3.1 SANGLI DISTRICT RURAL SEX RATIO (1981-2011)

Sex ratio of the rural population is considerably higher than that of the urban population. Especially in these tehsils where the migration of female to the urban centres is relatively less. There is high number of female in rural area due to out migration of male. The rural sex ratio is grouped into three categories as follows.

1. Region of High Sex Ratio (above 1000)

Table No. 5.2 indicates the tehsil wise rural sex ratio pattern and their change observed during 1981 to 2011. The high rural sex ratio was found in Khanapur, Atpadi and Shirala in 1981. During 1991 it is found in Khanapur and Shirala with 1042 and 1053 sex ratio respectively. In the year 2001, Khanapur (1013) and Shirala (1019) under high sex ratio. The reduction in high sex ratio during 2011 in Khanapur (1003) and Shirala (1015) tehsil of Sangli District, due to increasing intensity of out migration of females.

The level of agriculture development took place providing opportunities from agro based and small scale industries outside the tehsil. There was also serve drought condition (1972), all over the study area, resulting male out-migration. The greater provision of medical facilities provided to the villages, have declined of female mortality.

The high proportion of unemployment in rural area lead to a decline rural sex ratio in study area. The sex ratio remain same during 1991 to 2011. There was no any remarkable fluctuation in the number of tehsil under the high sex ratio category. There were considerable changes in sex ratio of Atpadi tehsil after, 1991 i.e. 952(1991), 986 (2001) and 995(2011).

2. Region of Moderate Sex Ratio (950 to 1000)

During 1981 Tasgaon, Jat and Kavate-Mahakal tehsils show moderate sex ratio i.e. 963, 962 and 986 respectively and in 1991, 958 sex ratio in Tasgaon, 952 in Atpadi and Kavate-Mahakal had 971 sex ratio. In 2001 same number of

tehsils were in this same category with 952, 986 and 962 sex ratio per thousand males.

Table No. 5.2

Sangli District : Rural Sex Ratio 1981-2011

Tehsil	Decade				Change		
	1981	1991	2001	2011	1981-91	1991-01	2001-11
Miraj	929	928	939	943	-1	11	4
Tasgaon	963	958	952	950	-5	-6	-2
Khanapur	1062	1042	1013	1003	-20	-29	-10
Atpadi	1002	952	986	995	-50	-4	9
Jat	962	934	948	951	-28	14	3
K. M'Kal	986	971	962	963	-15	-9	1
Walwa	946	944	938	936	-2	-6	-2
Shirala	1066	1053	1019	1015	-13	-34	-4
District total	980	966	962	963	-14	-4	1

***Source:** 1. District Census Handbook of Sangli, districts, 1981-91.

2. Census of India2001& 2011 Final Population Totals, Maharashtra, Series 28.

There was slight change means increase in number of tehsil under this category i.e. Jat tehsil with 951 sex ratio

The enhancement in irrigation facilities had led to development in agriculture activities which made transformation of traditional agriculture into technologically well developed system. The growth of agro based industries check the selective out migration.

3. Region of Low Sex ratio (below 950):

In the year 1981 Miraj and Walwa tehsil were under this category in the study area. This region comes under River basin like Krishna and Warana characterised by fertile soil with high levels of agricultural and industrial development. Irrigation facilities are available in large number. The

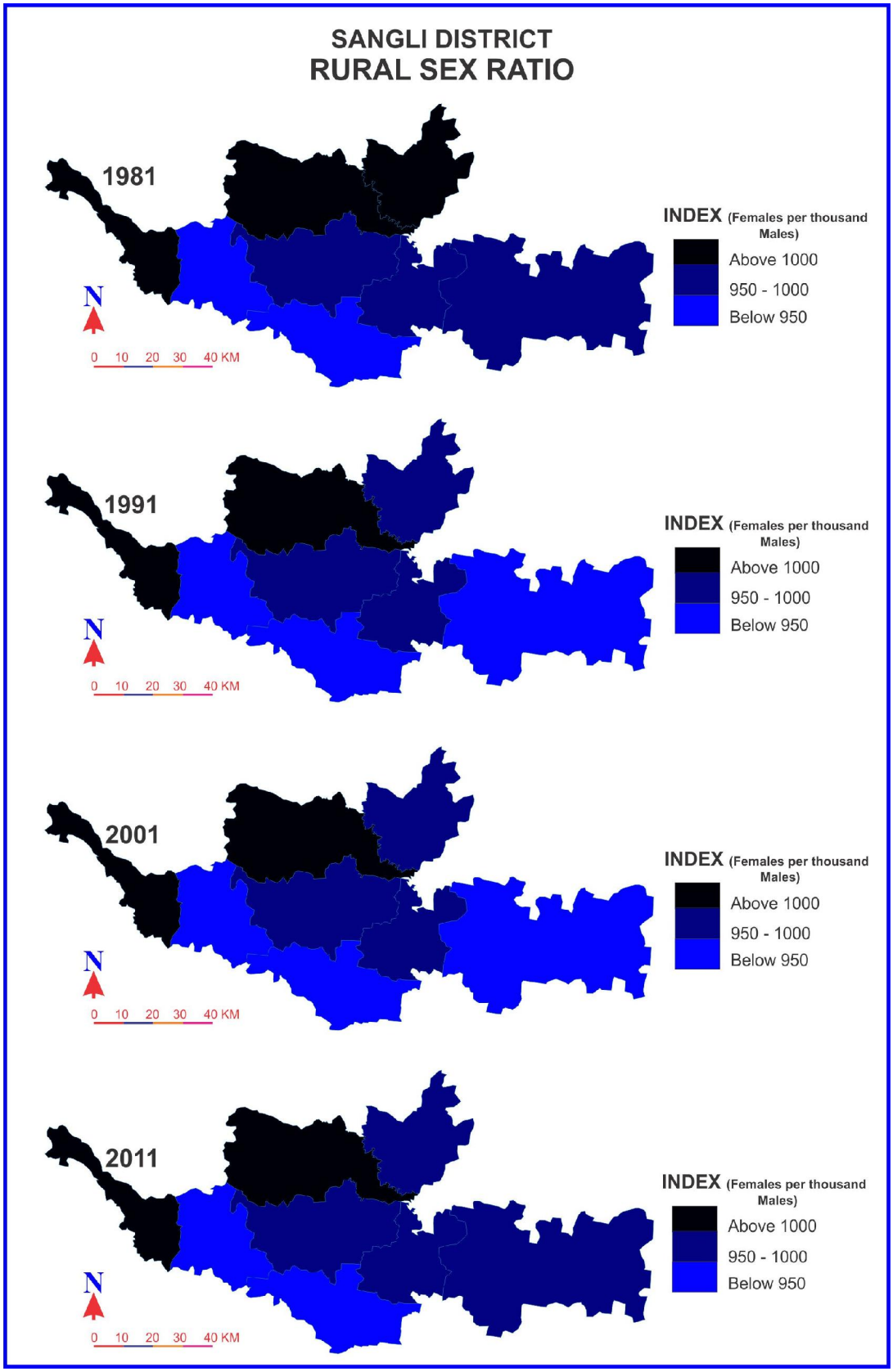
SANGLI DISTRICT
RURAL SEX RATIO
1981
1991
2001
2011
N
0 10 20 30 40 KM
INDEX (Females per thousand Males)
Above 1000
950 - 1000
Below 950

Fig. 5.2

development of irrigation plays very vital role in agricultural development. The present development has resulted in the use of fertilizers modern technology etc. Which transformed traditional subsistence nature of agriculture into commercial agriculture. It specialized for sugarcane, grapes and vegetables.

The substantial base of cooperative movement has promoted the establishment of sugar factories textile industry and dairy industry. The labour intensive irrigates farming and availability of jobs and opportunities has checked the male selective migration. In 2001 there was no change in this category but in the year 2011 the number of tehsils were reduced in Jat tehsil.

5.3.2 SANGLI DISTRICT URBAN SEX RATIO (1981-2011)

Urban sex ratio and there change in during 1981 to 2011 are observed through table no. 5.3. Generally urban sex ratio observed below 1000 females per thousand males. Only in 2011 it was above 1000 in particular tehsil during study span.

The urban population characterized by acute paucity females. Though the sex ratio is the product of sex selective in migration from rural area. Table 6.3 shows that the sex ratio vary from tehsil to tehsil and change over decades. The sex ratio in an inverse proportion with the degree of urbanization. The sex ratio varies within the towns also with the size of the community (Desai).

The low urbanized tehsils have the high sex ratio and high urbanized tehsil have lowest sex ratio. The correlation between the sex ratio and urbanization of this region is very low because of process and level of

urbanization in river basin. Urban sex ratio can be categorized into three categories.

1. **Region of high sex ratio (Above 1000)**

Table 6.3 exhibits spatial patterns of urban sex ratio and their changes within study region during 1981 to 2011.

It shows that during 1981 Atpadi, Jat, Kavate-Mahankal and Shirala tehsils were not under the category of urban high sex ratio. Urban sex ratio was fluctuating between 900 to 950 females per thousand males. There was no any remarkable change in urban status of study area. But in the year 2001 two tehsils i.e. Shirala and Walwa and in 2011 only one tehsil i.e. Miraj it was under the same category of above 1000 females per thousand males.

According to 2011 only Miraj tehsil sex ratio was 1004 and in other tehsil it was 1000 due to out-migration, lack of development in industries and commercial activities to the nearby developed areas.

2. **Region of Moderate Sex Ratio (950 to 1000)**

Table 6.3 revels that during 1981, 1991 and 2001 there was no any tehsil under this category only in 2011 Tasgaon and Khanapur with 956 and 950 sex ratio per thousand males respectively. Almost all the tehsils are rural in character. There is high pressure of population on land in relation to resources. For educational purpose, population migrate from these area to nearest urban area. They migrate with their families resulting into a change in male and female ratio. Approximately equal to these urban centres.

The improved sex ratio of Tasgaon and Khanapur were positive signs for social point of view. Such rise could be attributed to the development in having condition, increasing employment opportunities for women. It causes an increase of female in migration in urban areas from these tehsils.

Apart from this, the change in social outlook an increased educational facilities for women, extension in the age of marriage and decrease of female mortality, particularly at the time of child birth in urban area are major causes of such sex ratio. During 2001-2011 there was increase in number of female population in urban area.

Table No. 5.3

Sangli District : Urban Sex Ratio 1981-2011

Tehsil	Decade				Change		
	1981	1991	2001	2011	1981-91	1991-01	2001-11
Miraj	915	930	945	1004	15	15	59
Tasgaon	922	933	924	950	11	-9	26
Khanapur	923	945	935	956	22	-10	21
Atpadi	-	-	-	-	-	-	-
Jat	-	-	-	-	-	-	-
K. M'Kal	-	-	-	-	-	-	-
Walwa	940	934	1047	949	6	113	-98
Shirala	-	943	1067	-	943	124	-1067
District total	919	932	957	989	13	25	32

Source: 1. District Census Handbook of Sangli, districts, 1981-91.
2. Census of India2001& 2011 Final Population Totals, Maharashtra, Series 28.

3. Region of Low Sex Ratio (below 950):

Table No. 6.3 shows that the tehsil of Miraj, Tasgaon, Khanapur and Walwa with low sex ratio. Miraj shows low sex ratio than that of district sex ratio i.e. 919 during 1981. There were four tehsils under this category.

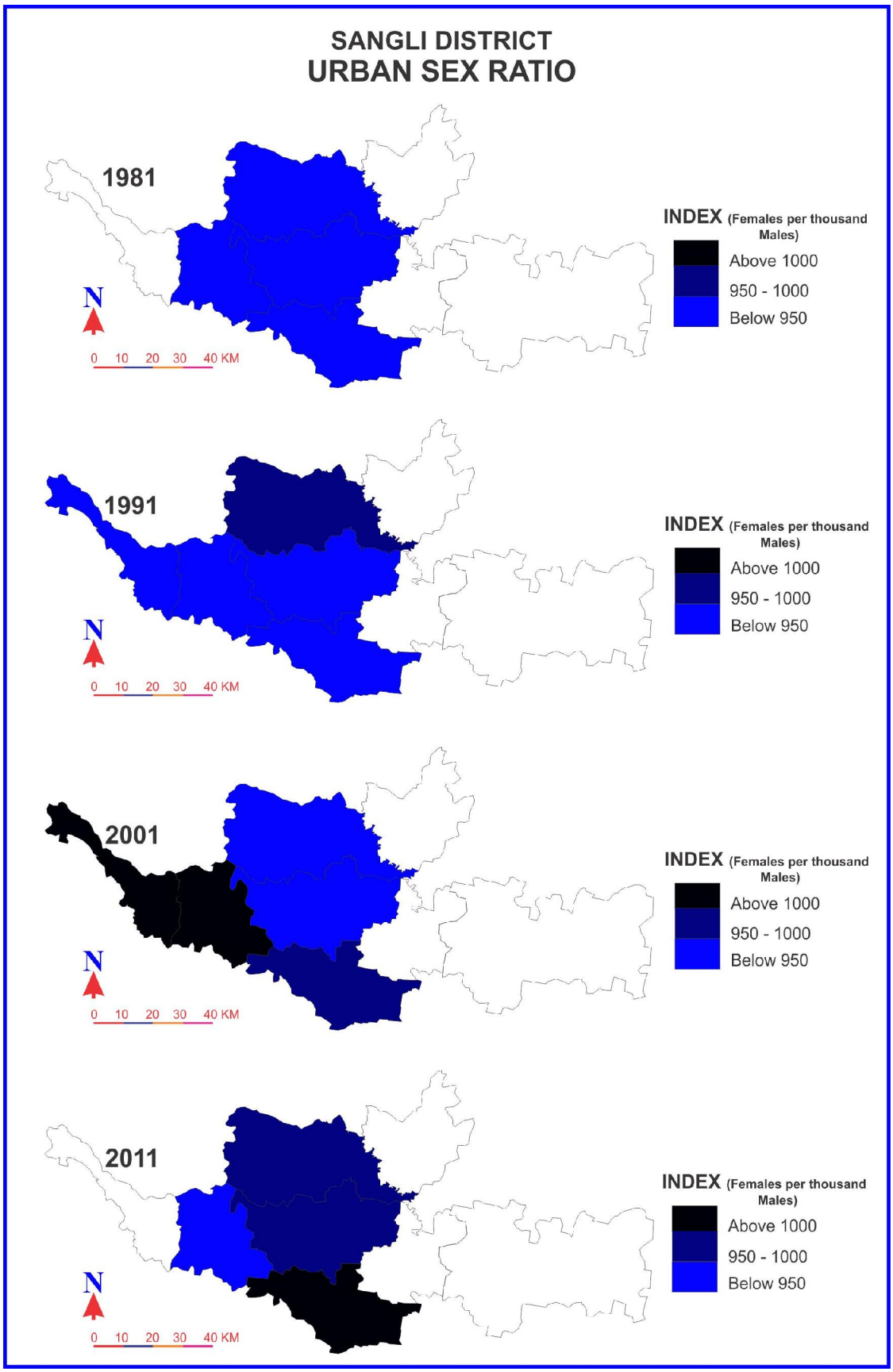
SANGLI DISTRICT
URBAN SEX RATIO
1981
1991
2001
2011
N
0 10 20 30 40 KM
INDEX (Females per thousand Males)
Above 1000
950 - 1000
Below 950

Fig. 5.3

There was slight change in number of tehsils, it was increased in by 1 tehsil during 1991 i.e. Shirala tehsil with 943 sex ratio per thousand males. The sex ratio of Walwa and Shirala was increased and it extend in the category of region of high sex ratio and only three tehsils i.e. Miraj, Tasgaon and Khanapur remained under same category in 2001. During 2011 only two tehsils were there under the same category i.e. Tasgaon and Walawa.

An increasing pressure of population on the limited land agricultural resources in the courtside compels the rural males to move to the urban area in search of job. The high cost of living in urban areas having problem are the factors for less females in urban areas. This resulted into low sex ratio.

Even in 2011 only four tehsils were considered as urban area and remaining tehsil were treated as rural area. The sustained growth of agro based, small scale industries and cottage industries in rural area has improved employment opportunities. It can check male selective migration.

Owing to male selective migration the sex ratio has been disturbed. Thus the area affected by out migration have become deposited and regarding male population whereas areas of in migration having inadequate number of women.

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CHAPTER- 6
MAGNITUDE OF LITERACY

6.0 INTRODUCTION

Literacy is that qualitative attribute of population which is a fairly reliable index of the socio-economic development of an area. Lack of Literacy as a brake on the social- development, economic progress and political maturity of a society and can be an impediment in the development process.

Earlier to the beginning of skills of reading and writing, society could be classified as being in the pre-literate cultural stage. The change from pre-literate to literate society is said to have begun somewhere during the fourth millennium B.C. through a gradual transition from pictography to the use of an alphabet (Golden Hilda). After the advent of the dual skills of reading and writing the relevance of literacy to the cultural advancement enhanced significantly. It is in this context that in Population Geography literacy is considered as a fairly reliable index of socio-cultural and economic advancement (Chandna and Sidhu). While for an archaeologist or anthropologist, the term literacy may refer to cultural fact pertaining to the development of society's compatibility to make use of writing for various purposes.

6.1 CONCEPT OF LITERACY

The concept of literacy that varies from country to country, generally refers to the minimum level of literacy skills. This minimum level of skills

varies from ability to communicate orally, to make a check of variety of difficult arithmetical computations. However, the length of schooling has often been considered as a basis of distinguishing between literate and illiterate. Trewartha[3] considers the basis of length of schooling not a valid measurement of educational accomplishments. He also disapproves of the ability to read and write one's name in the language of his country as the criterion for defining a literate. The Population Commission of United Nations considers the ability to both read and write a simple message with understanding in any language a sufficient basis for classifying a person as literate. The Indian Census has adopted this definition.

According to 2001 census a person aged seven years and above who can both read and write with understanding in any language has taken as literate. It is not necessary for a person to have received any formal education or passed any minimum educational standard for being treated as literate. People who were blind and could read in Braille are treated literates. A person, who can neither read nor write or can only read but cannot write in any language, is treated as illiterate. All children of age six years or less, even if going to school and have picked up reading and writing, are treated as illiterate. As a matter of convenience, literacy is defined as the ability to read and write one's name in one's own mother tongue. A literate person is one who is able both to read and write. A person who is able only to read but not to write may be called semi-literate. A person who can neither read nor write is called illiterate.

6.2 IMPORTANCE OF LITERACY

Literacy is essential for eradicating poverty and mental isolation, for cultivating peaceful and friendly international relations and for promoting the free play of demographic processes (Chandna). Illiteracy, on the other hand, takes away man from his dignity, perpetuates ignorance, poverty and mental isolation, deters peaceful and friendly international relations and free demographic process and hampers social advancement, economic growth and political maturity. Above all, literacy influences other such attributes of population as marriage, fertility, mortality, mobility, occupations, etc. A certain level of literacy is, therefore, a basic requirement for people to get out of ignorance and backwardness (Gosal and Chandna).

Human resources constitute the basis for wealth of nations. The principal institutional mechanism for developing human skills and knowledge is the formal educational system. There is a clear negative relationship between literacy or educational level of women and their fertility. It also influences the age of female at marriage. Not only has this but also influences the status of mother and infant mortality. Researches have established that average age of marriage for currently married women was the highest for women having graduation, while it was the lowest for illiterate and semi-literate women. These researches also show that there is a direct relationship between educational attainment of women and fertility on the one hand and Family Planning practices on the other. Even infant mortality rate was lower in the case of literate women. Davis observed that if the rate of literacy transition was

low, the economic development showed down, while the economic development was rapid if the literacy transition was fast.

No wonder, the trends in literacy are considered as an index of pace at which the socio-economic transformation of a society is taking place. The analysis of literacy patterns and trends therein is of immense significance not only for a demographer but also for a population geographer. Thus, literacy is essential for economic development, social advancement and demographic growth of a country. Being extraordinarily, one has to shout loudly that, "India's destiny is shaped in her classrooms" (Bhasin).

6.3 ELEMENTS OF LITERACY

The literacy rates in any area were determined largely by a variety of historical, social and economic factors. Often, it is not easy to prepare an exhaustive list of all such factors determining literacy due to complexity of the socio-economic set up. However, among the factors that may be called as important determinants of literacy he could include: (i) cost of education, (ii) political background, (iii) type of economy, (iv) standard of living, (v) degree of urbanization, (vi) stage of technological advancement, (vii) degree of development of means of transportation and communication, (viii) religious background, (ix) medium of instruction, (x) status of woman in the society, (xi) prejudices against the females mobility and education, (xii) availability of educational institutions, (xiii) general value system and ,(xiv) public policies (Chandna). According to Ghosh, literacy is influenced by as many as 15 different factors. He determines that there is a very high correlation between

parental income and literacy rate. The higher the parental income, the higher the literacy of children, other things remaining the same.

6.4 SANGLI DISTRICT TAHSIL WISE TRENDS IN LITERACY RATE (1981-2011)

The National Adult Education Programme, the first countrywide launched in 1978, viewed literacy as a means to bring about fundamental change in socio-economic development. In order to remove the regional inequalities dealing with literacy, the National Literacy Mission was launched on May 5, 1988 by the former Prime Minister, Late Rajiv Gandhi, aiming at improving functional literacy and values of national concern for more than 80 million illiterate people (Majumdar). Even though, not much progress has been achieved in the field of literacy, despite the Directive Principles enshrined in the 'Indian Constitution', that there should be free and compulsory education for all children below the age of fourteen.

The spatial patterns of development and literacy rate are correlated and that is the salient characteristic of study area. Since education is not an autonomous system, it is a sub-system of total socio-economic and political system. The study of spatial pattern of literacy is attempted to examine the factors affected the literacy rate. Social and economic conditions, educational facilities, industrial growth and development, availability of employment opportunities, degree of urbanization, means of transport and communication, etc. are the major factors directly influencing the rate of literacy. The factors

like topography, climate and soil too have the indirect effect on the literacy rate.

6.5 SANGLI DISTRICT: TOTAL LITERACY RATE (1981-2011)

1. Region of Very High Literacy Rate (Above 60.01 Per cent):

Table No. 6.1 indicates that the very high literacy rate was found in Miraj, Tasgaon, Khanapur, Kavate-Mahakal, Walwa and Shirala tahsils, it was 71.95 percent, 68.39 percent, 65.92 percent, 62.48 percent, 69.35 percent and 63.83 percent respectively during 2001 decade. According to 2011 census Sangli District except Tasgaon tahsil remaining all tahsils found very high literacy rate. Better educational facilities lead to very high literacy rate.

2. Region of High Literacy Rate (45.01-60 Per cent):

During 1981, Miraj, Tasgaon, Khanapur and Walwa tahsils observed high literacy rate, it was 55.82 percent, 49.79 percent, 45.86 percent and 50.96 percent respectively. In 1991, Miraj, Tasgaon, Khanapur, Kavate-Mahakal, Walawa and Shirala observed high literacy rate, it was 54.74 percent, 56.25 percent, 52.27 percent, 47.46 percent, 54.29 percent and 47.84 percent respectively. And 2011 decade observed that high literacy rate in Jat and Atpadi tahsils, and it was 56.65 percent and 53.19 percent.

Table No. 6.1

Sangali District : Total Literacy Rate-1981-2011(in %)

Tahsil	Decades			
	1981	1991	2001	2011
Miraj	55.82	54.74	71.95	76.66
Tasgaon	49.79	56.25	68.39	30.65
Khanapur	45.86	52.27	65.92	73.04
Atpadi	35.31	42.25	56.65	64.21
Jat	27.91	34.53	53.19	61.17
K. M'Kal	42.03	47.46	62.48	69.67
Walwa	50.96	54.29	69.35	76.56
Shirala	36.86	47.84	63.83	70.66
District total	46.87	50.01	66.50	66.32

Source: 1. District Census Handbook of Sangli, districts, 1981-91.
2. Census of India2001& 2011 Final Population Totals, Maharashtra, Series 28.

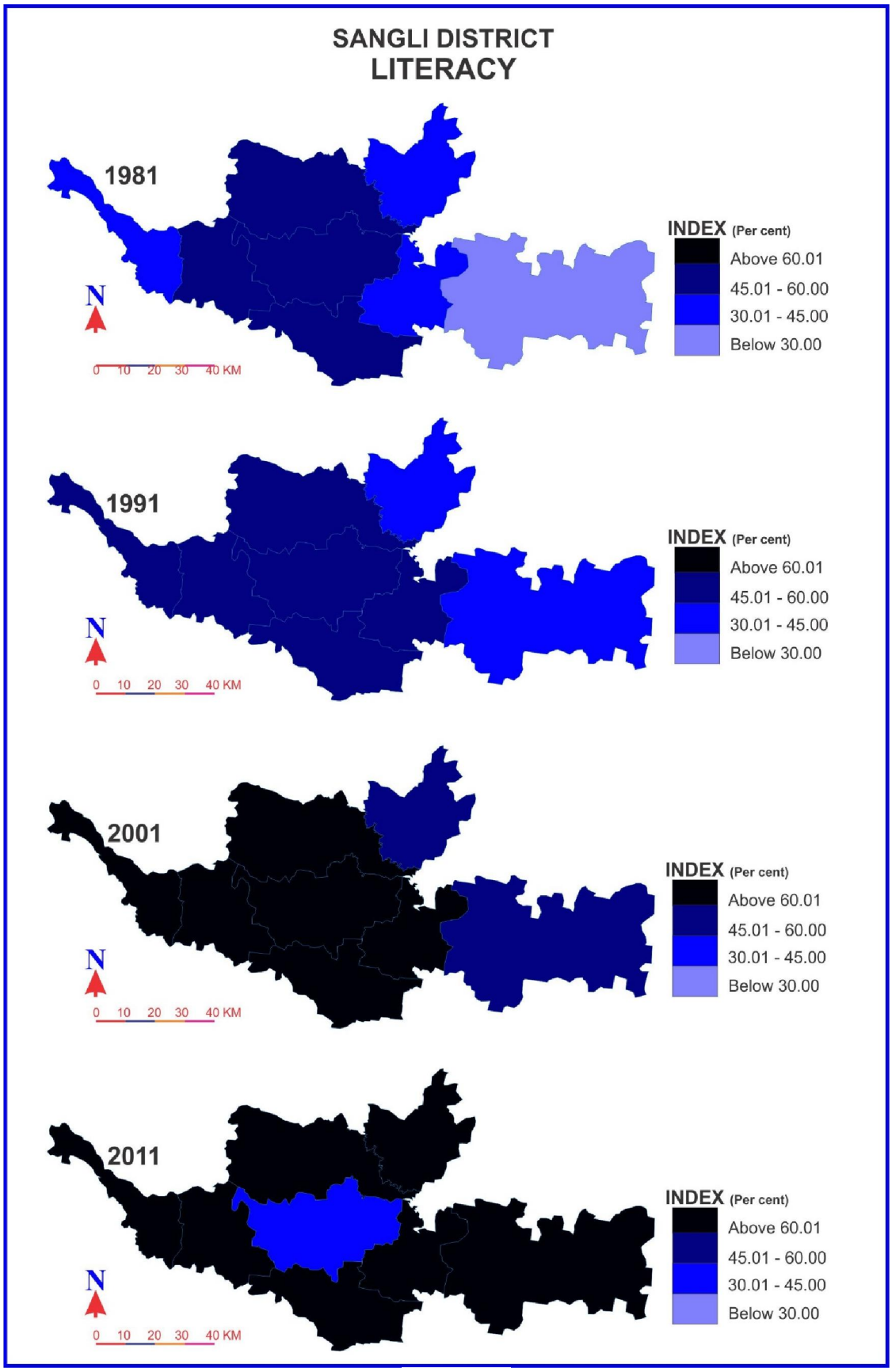
SANGLI DISTRICT
LITERACY
1981
1991
2001
2011
N
0 10 20 30 40 KM
INDEX (Per cent)
Above 60.01
45.01 - 60.00
30.01 - 45.00
Below 30.00

Fig. 6.1

3. Region of Moderate Literacy Rate (30.01-45 per cent)

It was observed that, moderate literacy rate in Atpadi, Kavate-Mahakal and Shirala tahsils during 1981, 35.31 percent, 42.03 percent and 36.86 percent respectively. In 1991 decade Atpadi and Jat tahsil found moderate literacy rate, it was 42.25 percent and 34.53 percent respectively. And 2011 decade Tasgaon tahsil observed moderate literacy rate, it was 30.65 percent.

4. Region of Low Literacy Rate (Below 30 Per cent)

Low literacy rate only observed in Jat tahsil during 1981 decade and it was 27.91 percent.

6.6 SANGLI DISTRICT: RURAL LITERACY RATE 1981-2011

1. Region of Very High Literacy Rate (Above 60.01 Per cent)

Very high literacy rate was found in Miraj, Tasgaon, Khanapur, Kavate-Mahakal, Walwa and Shirala tahsils, it was 71.95 percent, 68.39 percent, 65.92 percent, 62.48 percent, 69.35 percent and 63.83 percent respectively during 2001 decades. According to 2011 decade Miraj tahsil 76.66 percent, Tasgaon tahsil census 75.47 percent, Khanapur tahsil 72.20 percent, Atpadi tahsil 64.21 percent, Jat tahsil 61.17 percent, Kavate-Mahakal tahsil 69.49 percent, Walwa tahsil 76.25 percent and Shirala tahsil 70.66 percent found very high literacy rate.

2. Region of High Literacy Rate (45.01-60 Per cent)

During 1981, Miraj, Tasgaon and Walwa tahsils observed high literacy rate, it was 49.33 percent, 47.90 percent and 49.73 percent respectively. In 1991, Miraj, Tasgaon, Khanapur, Kavate-Mahakal, Walawa and Shirala

observed high literacy rate, it was 53.74 percent, 56.25 percent, 52.27 percent, 47.46 percent, 54.29 percent and 49.04 percent respectively. And 2011 decade observed that high literacy rate in Jat and Atpadi tahsils, and it was 56.65 percent and 53.19 percent respectively.

Table 6.2

Sangli District : Rural Literacy Rate-1981-2011(in %)

Tahsil	Decades			
	1981	1991	2001	2011
Miraj	49.33	53.74	67.87	73.40
Tasgaon	47.90	56.25	68.02	75.47
Khanapur	42.66	52.27	64.73	72.20
Atpadi	35.31	42.25	56.65	64.21
Jat	27.91	34.53	53.19	61.17
K. M'Kal	42.03	47.46	62.48	69.49
Walwa	49.73	54.29	68.65	76.25
Shirala	36.86	49.04	63.94	70.66
District total	42.92	49.82	64.12	71.09

Source: 1. District Census Handbook of Sangli, districts, 1981-91.
2. Census of India2001& 2011 Final Population Totals, Maharashtra, Series 28.

3. Region of Moderate Literacy Rate (30.01-45 per cent)

It was observed that, moderate literacy rate in Atpadi, Kavate-Mahakal and Shirala tahsils during 1981, 35.31 percent, 42.03 percent and 36.86 percent respectively. In 1991 decade Atpadi and Jat tahsil found moderate literacy rate, it was 42.25 percent and 34.53 percent respectively.

4. Region of Low Literacy Rate (Below 30 Per cent)

Low literacy rate only observed in Jat tahsil during 1981 decade and it was 27.91 percent.

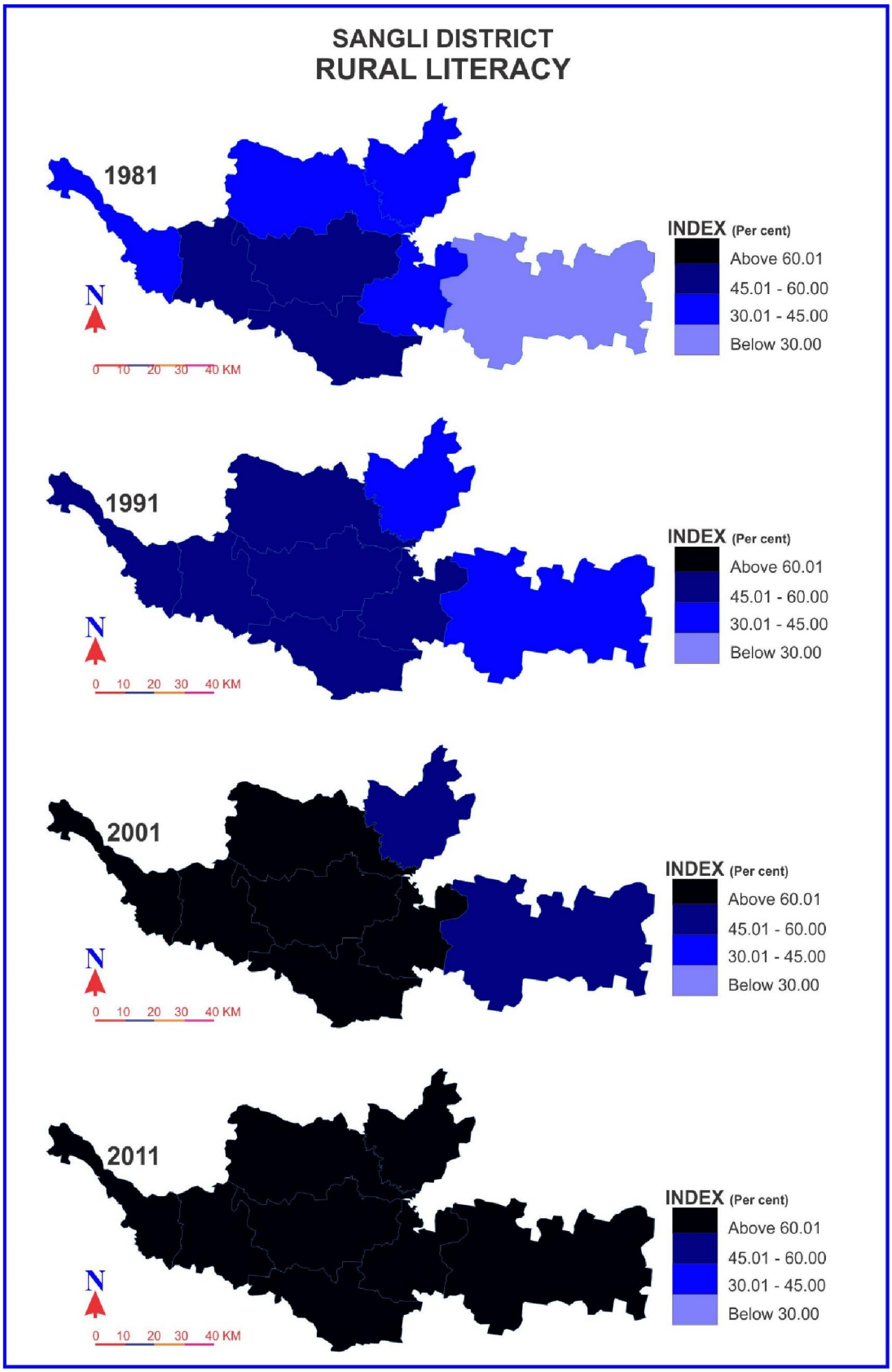
SANGLI DISTRICT
RURAL LITERACY
1981
1991
2001
2011
N
0 10 20 30 40 KM
INDEX (Per cent)
Above 60.01
45.01 - 60.00
30.01 - 45.00
Below 30.00

Fig. 6.2

6.7 SANGLI DISTRICT: URBAN LITERACY RATE 1981-2011

1. Region of Very High Literacy Rate (Above 60.01 Per cent)

Table No. 6.3 observed that Sangli District tahsil wise urban literacy rate during 1981 to 2011. In 1981 decade Miraj and Tasgaon tahsils showed that very high literacy rate, it was 61.54 percent and 60.05 percent respectively. Miraj, Tasgaon, Khanapur and Walawa tahsils indicates very high literacy rate during 2001 and 2011 decades. It was 74.55 percent, 72.85 percent, 72.07 percent and 71.81 percent in 2001 and 76.78 percent, 78.81 percent, 77.66 percent and 77.59 percent in 2011 respectively.

2. Region of High Literacy Rate (45.01-60 Per cent)

High literacy rate found in Khanapur and Walawa tahsil during 1981 decade, it was 59.22 percent and 56.52 percent. Shirala tahsil observed 52.26 percent literacy rate in 1991 and 59.64 percent literacy rate indicated in Shirala tahsil in 2001.

Table 6.3

Sangali District : Urban Literacy Rate-1981-2011(in %)

Tahsil	Decades			
	1981	1991	2001	2011
Miraj	61.54	63.17	74.55	76.78
Tasgaon	60.05	64.22	72.85	78.81
Khanapur	59.22	63.54	72.07	77.66
Atpadi	-	-	-	-
Jat	-	-	-	-
K. M'Kal	-	-	-	-
Walwa	56.52	63.50	71.81	77.59
Shirala	-	52.26	59.64	-
District total	60.53	63.10	73.80	77.07

***Source:** 1. District Census Handbook of Sangli, districts, 1981-91.

2. Census of India2001& 2011 Final Population Totals, Maharashtra, Series 28.

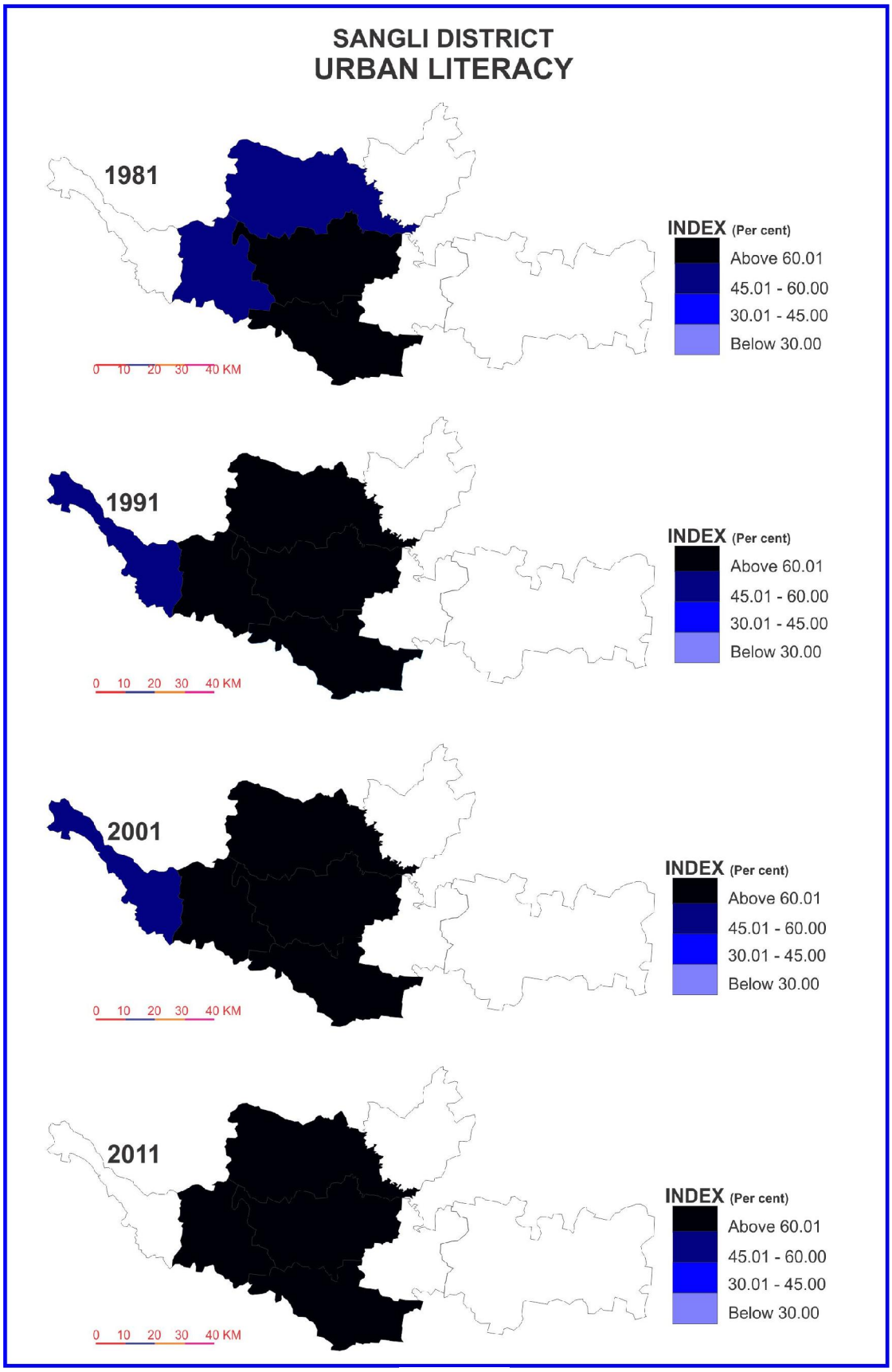
SANGLI DISTRICT
URBAN LITERACY
1981
INDEX (Per cent)
Above 60.01
45.01 - 60.00
30.01 - 45.00
Below 30.00
0 10 20 30 40 KM
1991
INDEX (Per cent)
Above 60.01
45.01 - 60.00
30.01 - 45.00
Below 30.00
0 10 20 30 40 KM
2001
INDEX (Per cent)
Above 60.01
45.01 - 60.00
30.01 - 45.00
Below 30.00
0 10 20 30 40 KM
2011
INDEX (Per cent)
Above 60.01
45.01 - 60.00
30.01 - 45.00
Below 30.00
0 10 20 30 40 KM

Fig. 6.3

3. Region of Moderate Literacy Rate (30.01-45 per cent)

No tahsil observed in moderate literacy rate in Sangli District during 1981 to 2011.

4. Region of Low Literacy Rate (Below 30 Per cent)

No tahsil observed in low literacy rate in Sangli District during 1981 to 2011.

6.8 SANGALI DISTRICT MALE LITERACY RATE 1981-2011

1. Region of Very High Literacy Rate (Above 60.01 Per cent)

Table No. 6.4 indicates very high literacy rate in Miraj, Tasgaon and Walawa tahsil, it was 66.59 percent, 62.94 percent and 64.72 percent respectively during 1981 decade. In 1991 decade observed that, Miraj tahsil 64.51 percent, Tasgaon tahsil 67.07 percent, Khanapur tahsil 62.97 percent, Walawa tahsil 64.69 percent and Shirala tahsil 60.59 percent literacy rate. And 2001 and 2011 census all tahsils in Sangli District indicate very high male literacy rate. It is due to increased educational facilities and increased per capita incomes, increased social awareness regarding importance of education.

2. Region of High Literacy Rate (45.01-60 Per cent)

It shows that, high literacy rate in Khanapur, Atpadi, Kavate-Mahakal and Shirala tahsil during 1981, it was 59.33 percent, 49.75 percent, 55.64 percent and 52.82 percent respectively. According to 1991, Atpadi tahsil 53.44 percent, Jat tahsil 46.77 percent and Kavate-Mahakal tahsil 57.92 percent observed high literacy rate.

3. Region of Moderate Literacy Rate (30.01-45 per cent)

The moderate literacy rate observed in Jat tahsil and it was 39.37 percent during 1981 decade.

Table 6.4

Sangali District : Male Literacy Rate-1981-2011(in %)

Tahsil	Decades			
	1981	1991	2001	2011
Miraj	66.59	64.51	78.39	79.80
Tasgaon	62.94	67.07	75.87	80.48
Khanapur	59.33	62.97	74.38	79.49
Atpadi	49.75	53.44	66.38	72.15
Jat	39.37	46.77	62.44	67.83
K. M'Kal	55.64	57.92	70.91	76.16
Walwa	64.72	64.69	76.20	81.39
Shirala	52.82	60.59	74.04	79.08
District total	59.70	60.94	74.20	78.12

Source: 1. District Census Handbook of Sangli, districts, 1981-91.
2. Census of India2001& 2011 Final Population Totals, Maharashtra, Series 28.

4. Region of Low Literacy Rate (Below 30 Per cent):

No tahsil observed in low literacy rate in Sangli District during 1981 to 2011.

6.9 SANGLI DISTRICT FEMALE LITERACY RATE 1981-2011:

1. Region of Very High Literacy Rate (Above 60.01 Per cent):

It indicates that, 2001 decade Miraj tahsil and Tasgaon tahsil female literacy rate was very high and it was 65.13 percent and 60.53 percent respectively. According to 2011 decade Miraj, Khanapur, Kavate-Mahakal, Walawa and Shirla tahsil observed very high female literacy rate, it was 71.04 percent, 66.61 percent, 62.93 percent, 71.41 percent and 62.37 percent respectively.

2. Region of High Literacy Rate (45.01-60 Per cent):

High literacy rate found Khanapur, Atpadi, Kavate-Mahakal, Walawa and Shirala tahsil during 2001 decade, it was 57.46 percent, 46.79 percent, 53.72 percent, 48.05 percent and 53.90 percent respectively. The 2011 decade indicated

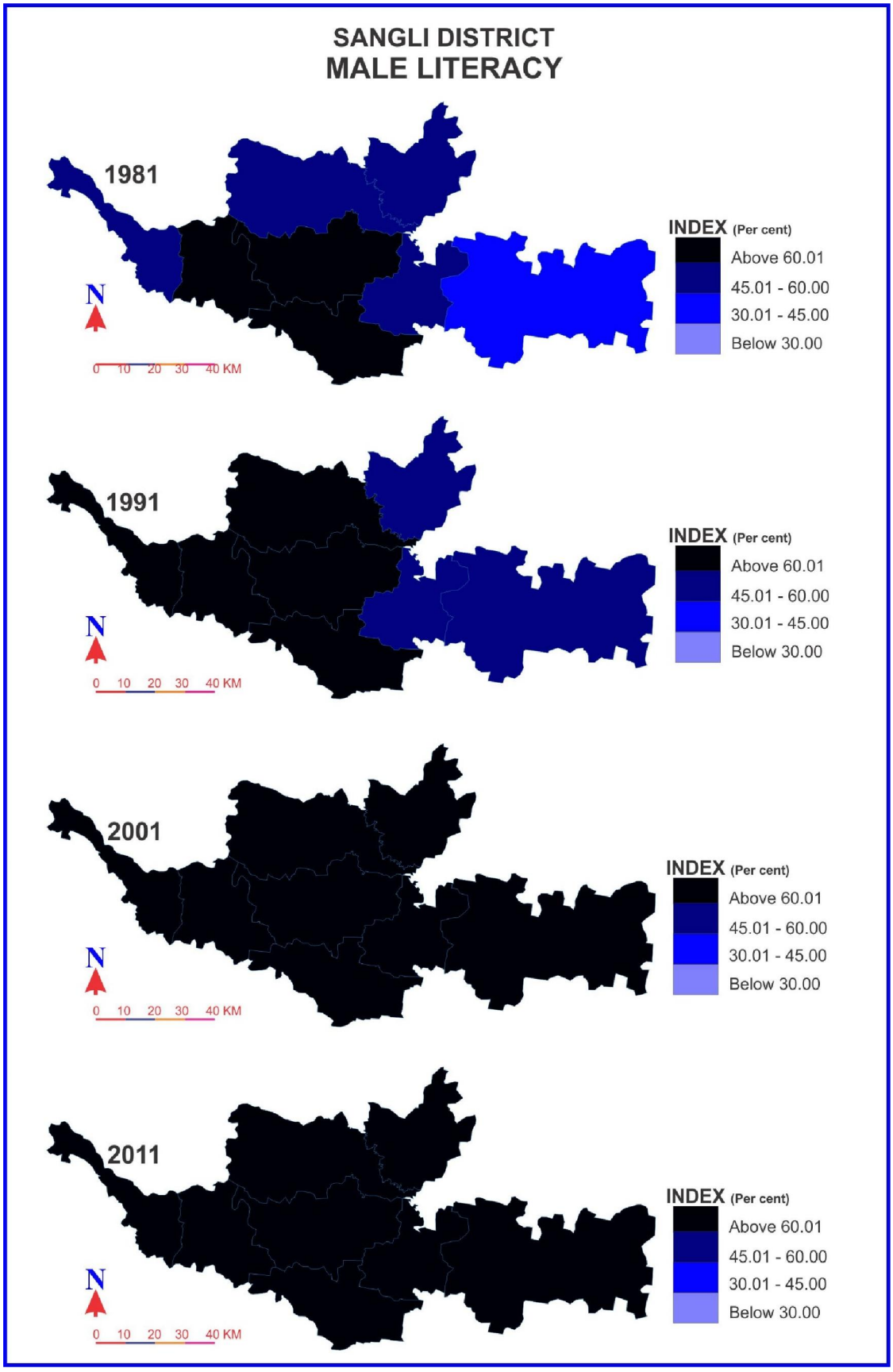
SANGLI DISTRICT
MALE LITERACY
1981
INDEX (Per cent)
Above 60.01
45.01 - 60.00
30.01 - 45.00
Below 30.00
N
0 10 20 30 40 KM
1991
INDEX (Per cent)
Above 60.01
45.01 - 60.00
30.01 - 45.00
Below 30.00
N
0 10 20 30 40 KM
2001
INDEX (Per cent)
Above 60.01
45.01 - 60.00
30.01 - 45.00
Below 30.00
N
0 10 20 30 40 KM
2011
INDEX (Per cent)
Above 60.01
45.01 - 60.00
30.01 - 45.00
Below 30.00
N
0 10 20 30 40 KM

Fig. 6.4

Tasgaon, Atpadi and Jat tahsil high literacy rate, it was 50.78 percent, 56.23 percent and 54.17 percent respectively.

Table No. 6.5

Sangali District : Female Literacy Rate-1981-2011(%)

Tahsil	Decades			
	1981	1991	2001	2011
Miraj	44.12	44.15	65.13	71.04
Tasgaon	36.03	44.94	60.53	50.78
Khanapur	32.99	41.99	57.46	66.61
Atpadi	20.89	30.48	46.79	56.23
Jat	16.01	22.64	43.43	54.17
K. M'Kal	28.23	36.69	53.72	62.93
Walwa	36.40	43.27	48.05	71.41
Shirala	21.88	35.68	53.90	62.37
District total	33.60	38.87	55.79	63.28

Source: 1. District Census Handbook of Sangli, districts, 1981-91.

2. Census of India2001& 2011 Final Population Totals, Maharashtra, Series 28.

3. Region of Moderate Literacy Rate (30.01-45 per cent):

Moderate literacy rate observed in Miraj, Tasgaon, Khanapur and Walawa tahsil during 1981, it was 44.12 percent, 36.03 percent and 32.99 percent respectively. 44.15 percent, 44.94 percent, 41.99 percent, 30.48 percent, 36.69 percent, 43.27 percent and 35.68 percent literacy rate observed in Miraj, Tasgaon, Khanapur, Atpadi, Kavate-Mahakal, Walawa and Shirala tahsil respectively during 1991. In 2001 decade moderate literacy rate observed in Jat tahsil 43.43 percent.

4. Region of Low Literacy Rate (Below 30 Per cent):

Low literacy rate found in Atpadi, Jat, Kavate-Mahakal and Shirala tahsil during 1981 and it was 20.89 percent, 16.01 percent, 28.23 percent and 21.88

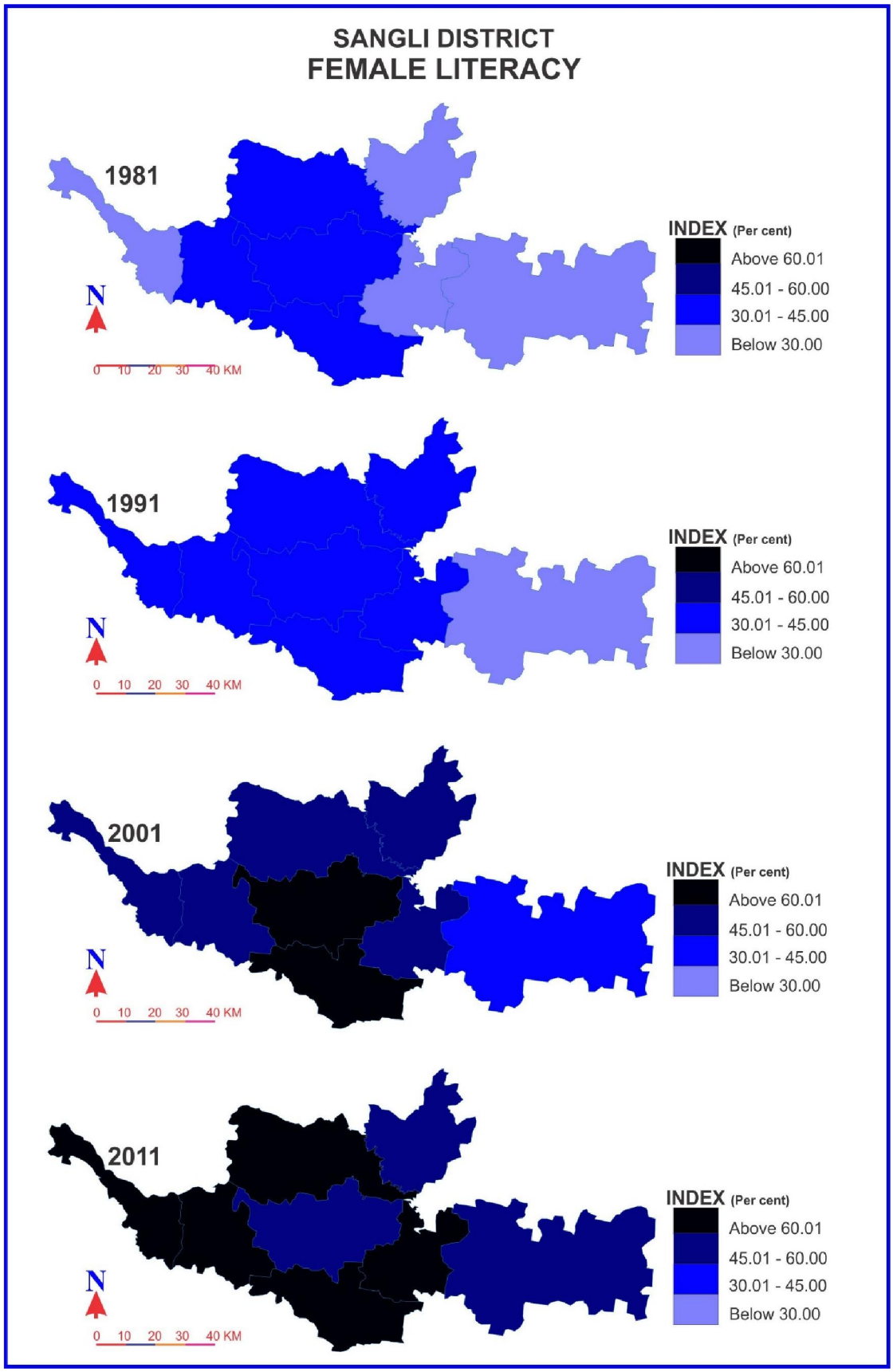
SANGLI DISTRICT
FEMALE LITERACY
1981
1991
2001
2011
N
0 10 20 30 40 KM
INDEX (Per cent)
Above 60.01
45.01 - 60.00
30.01 - 45.00
Below 30.00

Fig. 6.5

percent respectively. Jat tahsil observed in 1991 low literacy rate and it was 20.94 percent.

6.10 SUMMARY:

The above analysis revels that, the study area, exhibit slightly low percentages of literacy than the state literacy percentages during 1981, 1991, 2001 and 2011 respectively. The growth in literacy rate is also slightly lower than the state average. The places of high literacy have been characterized by high degree of industrialization and urbanization in the study area. Striking disparities in the rate and pattern of the literacy are found in the study area, affected by sex, residence and occupation. The differences in the percentages of literates and gender gaps in agricultural areas and non-agricultural areas are also significant.

Tahsils in Central Plain River Zone are highly urbanized, technologically advanced and industrially developed, have very high literacy rate. The tahsil in Western Hilly Zone reports the moderate literacy rate. While the tahsils in Eastern Drought Prone Zone have moderate to low literacy rates, indicates that there is great influence of geographical factors on literacy.

Industrially developed and technologically advanced urban centers in Central Plain Zone exhibits very high literacy rates as compared to other urban centers in the study area. Overall urban literacy rate in the study area is low as compared to the state. Economic backwardness in the study area causes migration of population from study area for jobs and employment opportunities elsewhere.

Literacy pattern and rate of literacy in the villages of study area exhibit the positive correlation between the size of population and literacy rate. Large sized villages have more literacy rate than that of small sized villages. The villages located in the Central Plain Zone, the economically developed area, have relatively high literacy rates as compared to Western Hilly Zone and Eastern Plateau Zone. This is due to the unfavorable topography, lack of transportation and communication, limited facilities of education. As many villages in the study area are identified as the most illiterate villages, where there is need to pay attention to improve literacy rate for better human resource development.

The empirical evidences of the present study indicates that there are spatial inequalities not only in the literacy rates of male and female population but also in urban and rural masses. Keeping in view the complexities of socio-cultural and economic and the spatial variations in the study area; it should strive for universalization of at least elementary education at the earliest possible.

It is hearty to record that the literacy gap in the study area is not much high. Transport and communication facilities, technological and economic advancement, change in occupational structure, government efforts to provide educational opportunities in each and every part and segment of society are the prime reasons for improvement in literacy rate. It requires identification of Jat and Atpadi tahsils, which needed immediate policy initiatives in the field of education.

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CHAPTER - 7
OCCUPATIONAL STRUCTURE

7.0 INTRODUCTION

The study of occupational structure occupies an important position in the field of population geography. The social and economic development of any region depends on the number of persons who are economically active and the quality and regularity of their work. The proportion of economically active population in various occupations indicates economic profile of various groups of society.

The occupational structure of a society is the product of a number of intimately related factors. The nature and variety of physical resources base of course, lays down the basic foundation in the form of good land for agriculture, indented coast for fishing, thick vegetation cover for forestry, rich geological strata for mining, etc. (Chandana).

7.1 CLASSIFICATION OF OCCUPATION

The study of occupational structure provides background knowledge for formulating future development plans. The occupation means doing a certain type of work. The term 'work' is used in special sense in the census. Work may be defined as a participation in economically productive activity. The participation is physical or mental in nature (Census of India 1991).

However, a person doing any type of economically productive activity is a worker. Thus work involved not only actual work but also effective supervision and direction of work.

According to Census of India 1981 the working population grouped into three major groups. 1) Main worker 2) Marginal worker 3) Non worker. Whereas main workers are those who had worked for the major part of the year (at least 6 months or 183 days). The marginal workers are those who worked for some time during the year, but not for the major part. The non-workers are those who do not worked at all during the year. Non workers include students, dependents, retired persons, persons engaged in household duties and beggars.

There is a large variety of occupations. Therefore Census authorities have classified main workers into following categories during 1981.

i) Cultivation.

ii) Agricultural labours.

iii) Household industry (Manufacturing, processing, service and Repairs).

iv) Other workers.

At the time of 1991 Census, there has been change in classification of workers. The main workers classified into nine industrial categories.

i) Cultivators.

ii) Agricultural labours.

iii) Livestock and forestry, fishing, hunting, plantation and allied activities.

iv) Mining and quarrying.

v) Manufacturing, processing and repairs. (a) Household industry, b) Other than household industry).

vi) Construction

vii) Trade and commerce.

viii) Transport, storage and communication.

ix) Other services.

During Census 2001& 2011, there has been again change in classification of workers. The main workers classified into four categories.

i) Cultivators.

ii) Agricultural labours.

iii) Household industries.

iv) Other services.

It has become very difficult to make analysis of occupational characteristics of Scheduled Caste within study region, due to there is large variety of occupational categories classified by Census authorities in Census 1981, 1991, 2001 and 2011.

For the purpose of simplification, these industrial categories can be reduced to the following three major categories for proper analysis. (Ghosh)

1) Primary activities. (Agriculture, forestry, hunting, fishing, mining, quarrying etc.)
2) Secondary activities. (Manufacturing, construction, power generation etc.)

3) Tertiary activities. (Commerce, storage, transport, miscellaneous services etc.)

Similarly, the study region grouped into primary, secondary and tertiary activities individually for the Census years (1981-2011). The present investigation for proper comparison the study region grouped into total, rural urban, male and female workers in primary, secondary and tertiary sector of economy.

7.2 SANGLI DISTRICT OCCUPATIONAL STRUCTURE (1981-2011):

The study of occupational structure and its analysis has been dealt individually for 1981, 1991, 2001 and 2011 census years. Because census authorities made considerable changes in the classification of workers.

The dominance of occupational activities in the study area, occupational activities has been grouped in five main activities, such as primary, secondary, tertiary marginal workers and non-workers. The percentages of population engaged in these activities for 1981, 1991, 2001 and 2011 period have been grouped in five categories for the analysis in Sangli district. They are as follows:

- Total workers of the tehsils.
- Rural workers of the tehsils.
- Urban workers of the tehsils.
- Male workers of the tehsils.
- Female workers of the tehsils.

1) SANGLI DISTRICT TOTAL WORKERS OCCUPATIONAL STRUCTURE 1981-2011

i) Census 1981

The study region working population engaged in primary, secondary, tertiary, marginal workers and non-workers was 15.22 percent, 0.92 percent, 14.97 percent, 1.77 percent and 67.13 percent respectively during 1981 census in Miraj tehsil. In this census year Miraj tehsil to district percentage was 17.87 percent, 28.06 percent, 45.69 percent, 10.18 percent and 22.15 percent respectively. Table no.7.1 shows that tertiary workers participation was 45.69 percent in the district.

Tasgaon tehsil percentage of working population was primary workers 25.70 percent, secondary workers 0.69 percent, tertiary 7.67 percent, marginal workers 5.15 percent and non-workers 60.79 percent. District percentage was 18.59 percent, 13.05 percent, 14.43 percent, 18.27 percent and 12.35 percent respectively.

Table no. 7.1(I) reveals that, Khanapur tehsil working population engaged in primary, secondary, tertiary, marginal workers and non-workers was 31.31 percent, 0.70 percent, 7.67 percent, 5.77 percent and 56.13 percent respectively. And the district percentage was 16.04 percent, 9.31 percent, 8.10 percent, 14.52percent and 8.08 percent respectively.

Atpadi tehsil percentage in district observed that, 25.32 percent, 1.27 percent, 5.57 percent, 6.64 percent and 61.20 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And

district percentage was 4.99 percent, 6.53 percent, 2.85 percent, 6.43 percent and 3.39 percent respectively.

Table no. 7.1(I) observed that, working population engaged in primary, secondary, tertiary, marginal workers and non-workers was 30.16 percent, 0.96 percent, 5.63 percent, 5.69 percent and 57.55 percent respectively during 1981 census in Jat tehsil. District percentage was 13.67 percent, 11.34 percent, 6.63 percent, 12.67 percent and 7.33 percent respectively.

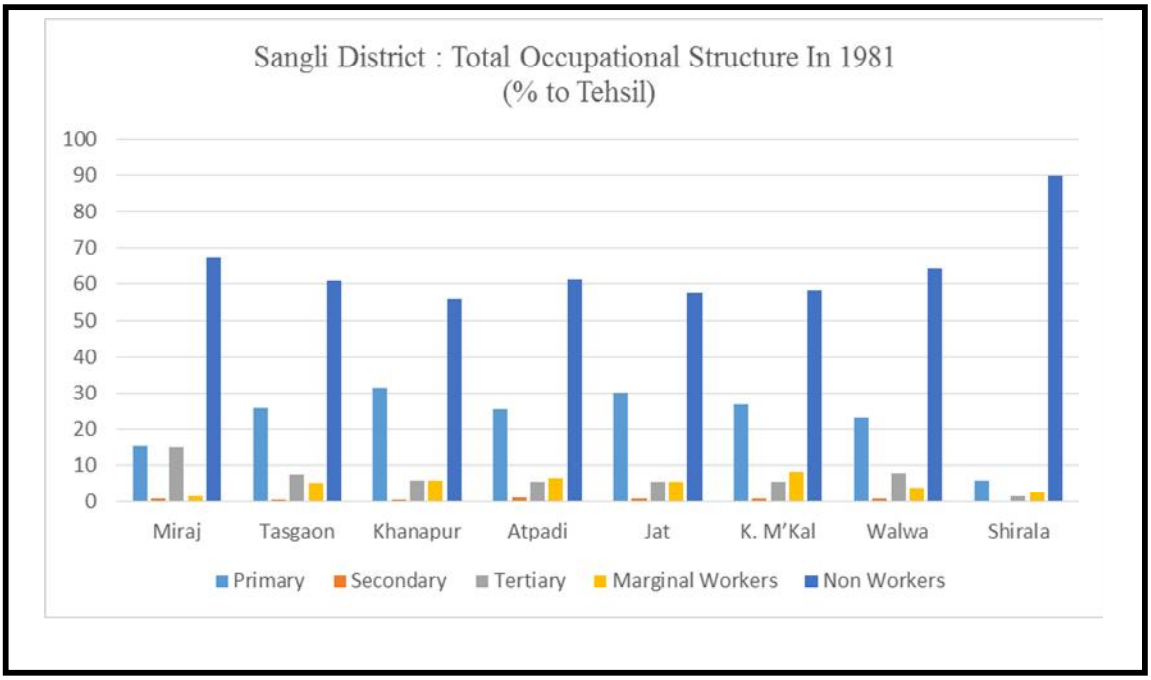
Table 7.1 (I)

Sangli District: Total workers Occupational Structure 1981

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	15.22	0.92	14.97	1.77	67.13	17.87	28.06	45.69	10.18	22.15
Tasgaon	25.70	0.69	7.67	5.15	60.79	18.59	13.05	14.43	18.27	12.35
Khanapur	31.31	0.70	6.08	5.77	56.13	16.04	9.31	8.10	14.52	8.08
Atpadi	25.32	1.27	5.57	6.64	61.20	4.99	6.53	2.85	6.43	3.39
Jat	30.16	0.96	5.63	5.69	57.55	13.67	11.34	6.63	12.67	7.33
K. M'Kal	26.97	0.87	5.53	8.19	58.44	6.16	5.20	3.28	9.18	3.75
Walwa	23.05	1.06	7.83	3.95	64.11	15.57	18.72	13.76	13.10	12.17
Shirala	5.81	0.25	1.66	2.61	89.68	7.10	7.80	5.26	15.66	30.79
District total	19.28	0.74	7.42	3.93	68.63	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District-1981.

K. M'Kal tehsil percentage of working population engaged in primary, secondary, tertiary, marginal workers and non-workers was 26.97 percent, 0.87 percent, 5.53 percent, 8.19 percent and 58.44 percent respectively during 1981 census in Kvate-mahakal tehsil. In this census year tehsil district percentage was 6.16 percent, 5.20 percent, 3.28 percent, 9.18 percent and 3.75 percent respectively.


Sangli District : Total Occupational Structure In 1981
(% to Tehsil)
100
90
80
70
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

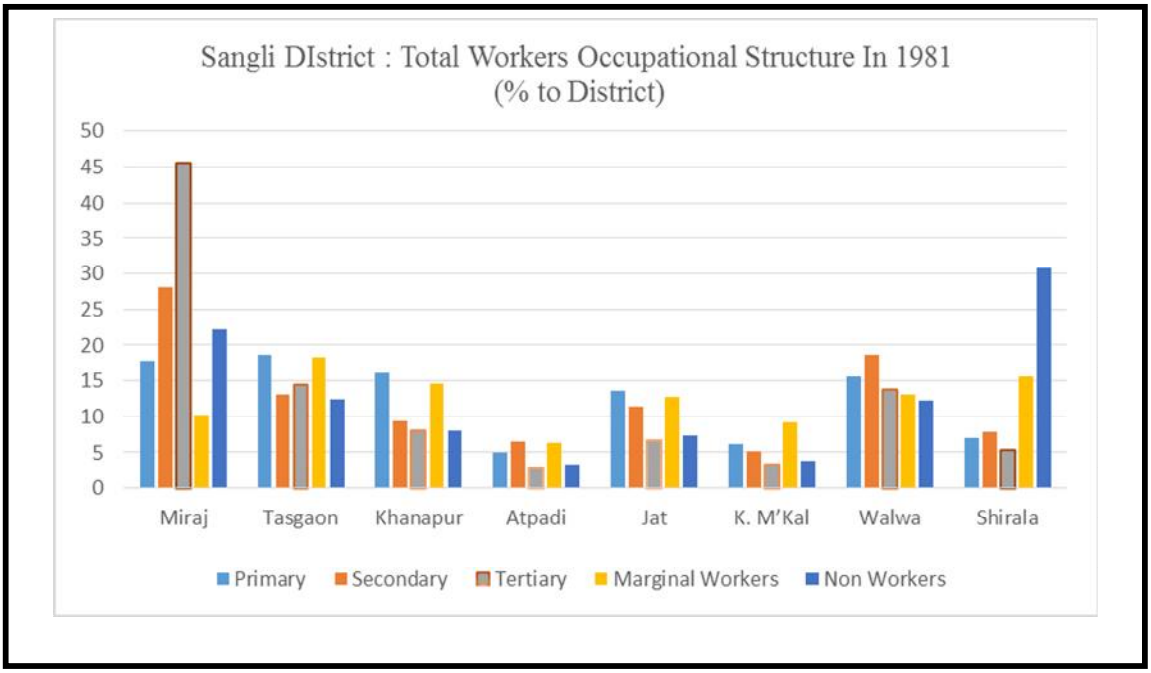

Sangli DIstrict : Total Workers Occupational Structure In 1981
(% to District)
50
45
40
35
30
25
20
15
10
5
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.1 (I)

Percentage of working population of Walwa Tehsil was primary workers 23.05 percent, secondary 1.06 percent, tertiary 7.83 percent, marginal workers 3.95 percent and non-workers 64.11 percent. And district percentage was 15.57 percent, 18.72 percent, 13.76 percent, 13.10 percent and 12.17 percent respectively during 1981 census.

Shirala tehsil workers participation reveals that, 5.81 percent, 0.25 percent, 1.66 percent, 2.61 percent and 89.68 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And the district percentage of the tehsil was 7.10 percent, 7.80 percent, 5.26 percent, 15.66 percent and 30.79 percent respectively during 1981 census.

Table no. 7.1(I) observed that, in the primary sector Tasgaon tehsil working population was 18.59 percent in district. Miraj tehsil secondary sector working population was 28.06 percent, it was high in the district. In the district high tertiary working population in Miraj tehsil was 45.69 percent. Tasgaon tehsil Marginal working population was 18.27 percent in the district it was high in the district. Non-workers high population observed in Shirala tehsil it was 30.79 percent.

ii) Census 1991:

During 1991 census the total working population accounts for 25.43 percent in primary, 5.49 percent in secondary, 6.47 percent in tertiary activity, 5.11 percent in marginal workers and 57.50 percent in non-workers of Miraj tehsil. And its percentage of district was 14.15 percent in primary, 31.65

percent in secondary, 23.78 percent in tertiary, 10.79 percent in marginal workers and 19.68 percent in non-workers.

The Table no. 7.1(II) shows that total working population engaged 31.23 percent in primary activity, 3.06 percent in secondary activity, 4.78 percent in tertiary activity, 8.03 percent in marginal workers and 52.89 percent in non-workers during 1991 in Tasgaon tehsil. Its district percentage was 16.86 percent in primary activity, 17.13 percent in secondary activity, 17.04 percent in tertiary activity, 16.45 percent in marginal workers and 17.56 percent in non-workers.

According to census the total average working population was 34.7 percent, 2.43 percent, 4.17 percent, 8.91 percent and 49.72 percent in primary, secondary, tertiary, marginal workers and non-workers respectively in Khanapur tehsil. And its district percentage was 13.43 percent, 9.71 percent, 10.65 percent, 13.06 percent and 11.81 percent in primary, secondary, tertiary, marginal and non-workers respectively.

Table no. 7.1(II) shows that total working population engaged 29.85 percent in primary activity, 2.42 percent in secondary activity, 4.18 percent in tertiary, 9.98 percent in marginal workers and 53.56 percent in non-workers during 1991 census in Atpadi tehsil. District percentage was 5.79 percent in primary activity, 4.88 percent in secondary activity, 5.36 percent in tertiary, 7.35 percent in marginal workers and 6.39 percent in non-workers.

Table 7.1(II)

Sangli District : Total Workers Occupational Structure 1991

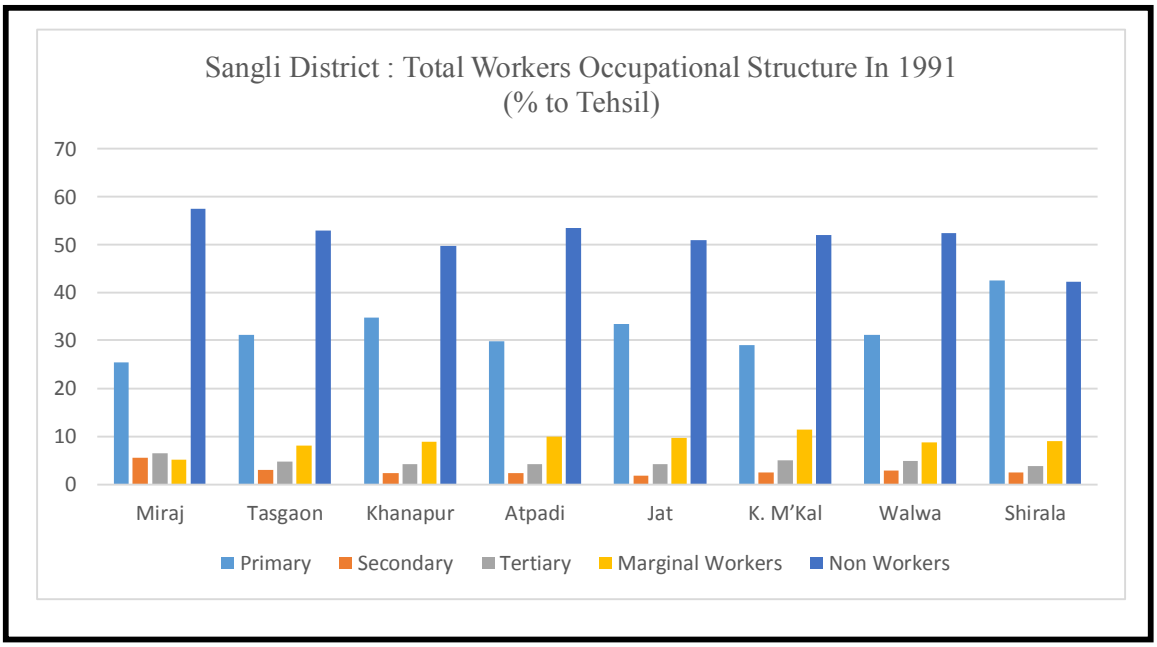
Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	25.43	5.49	6.47	5.11	57.50	14.15	31.65	23.78	10.79	19.68
Tasgaon	31.23	3.06	4.78	8.03	52.89	16.86	17.13	17.04	16.45	17.56
Khanapur	34.77	2.43	4.17	8.91	49.72	13.43	9.71	10.65	13.06	11.81
Atpadi	29.85	2.42	4.18	9.98	53.56	5.79	4.88	5.36	7.35	6.39
Jat	33.49	1.76	4.21	9.68	50.86	14.02	7.65	11.65	15.37	13.09
K. M'Kal	29.04	2.53	5.03	11.42	51.99	5.96	5.37	6.81	8.89	6.56
Walwa	31.18	2.87	4.88	8.72	52.34	15.91	15.18	16.46	16.90	16.43
Shirala	42.46	2.49	3.82	9.03	42.20	13.87	8.43	8.25	11.19	8.48
District total	31.871	3.08	4.83	8.40	51.83	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District- 1991.

Jat tehsil percentage of working population observed that, 33.49 percent, 1.76 percent, 4.21 percent, 9.68 percent and 50.86 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And the district percentage of the tehsil was 14.02 percent, 7.65 percent, 11.65 percent, 15.37 percent and 13.09 percent respectively.

The table 7.1(II) reveals that, Kavate-Mahakal tehsil total working population was 29.04 percent, 2.53 percent, 5.03 percent, 11.42 percent and 51.99 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district participation rate was 5.96 percent, 5.37 percent, 6.8 percent, 8.89 percent and 6.56 percent respectively.

Percentage of Walwa tehsil observed that, 31.18 percent in primary, 2.87 percent in secondary, 4.88 in tertiary, 8.72 in marginal workers and 52.37 percent in non-workers and its district percentage was 15.91 percent, 15.18


Sangli District : Total Workers Occupational Structure In 1991
(% to Tehsil)
70
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

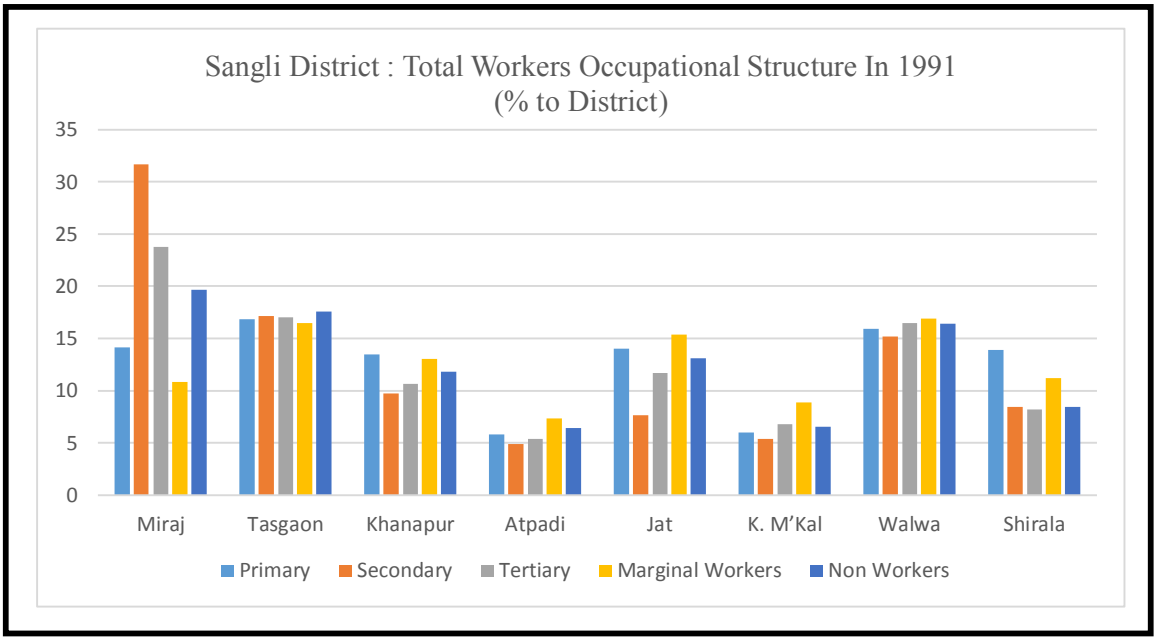

Sangli District : Total Workers Occupational Structure In 1991
(% to District)
35
30
25
20
15
10
5
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.1 (II)

percent, 16.46 percent, 16.90 percent and 16.43 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Shirala tehsil percentage of working population observed that, 42.46 percent, 2.49 percent, 3.82 percent, 9.03 percent and 42.20 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And the district percentage of the tehsil was 13.87 percent, 8.43 percent, 8.25 percent, 11.19 percent and 8.48 percent respectively.

District total working population observed that, in the primary sector Tasgaon tehsil working population was 16.86 percent in district. Miraj tehsil secondary sector working population was 31.65 percent, it was high in the district. In the district high tertiary working population in Miraj tehsil was 23.78 percent. Walwa Marginal working population was 16.90 percent in the district it was high in the district. Non-workers high population observed in Miraj tehsil it was 19.68 percent. In this census year Miraj tehsil observed that secondary, tertiary and non-working high population in the district.

iii) Census 2001:

Table no. 7.1(III) shows that tehsil wise occupational structure of total working population during 2001 census. It was found that population engaged in primary, secondary, tertiary, marginal workers and non-workers activities differed from tehsil to tehsils within study region.

During 2001 census the working population accounts for 11.68 percent in primary, 0.42 in secondary, 19.17 in tertiary activity, 5.78 percent in marginal workers and 62.95 percent in non-workers in Miraj tehsil. And its

percentage of district was 14.04 percent in primary, 14.23 in secondary, 49.97 in tertiary activity, 16.30 percent in marginal workers and 36.64 percent in non-workers.

Tasgaon tehsil percentage of working population observed that, 30.18 percent, 0.90 percent, 8.59 percent, 13.07 percent and 42.27 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And the district percentage of the tehsil was 20.77 percent, 17.58 percent, 12.29 percent, 21.08 percent and 14.88 percent respectively.

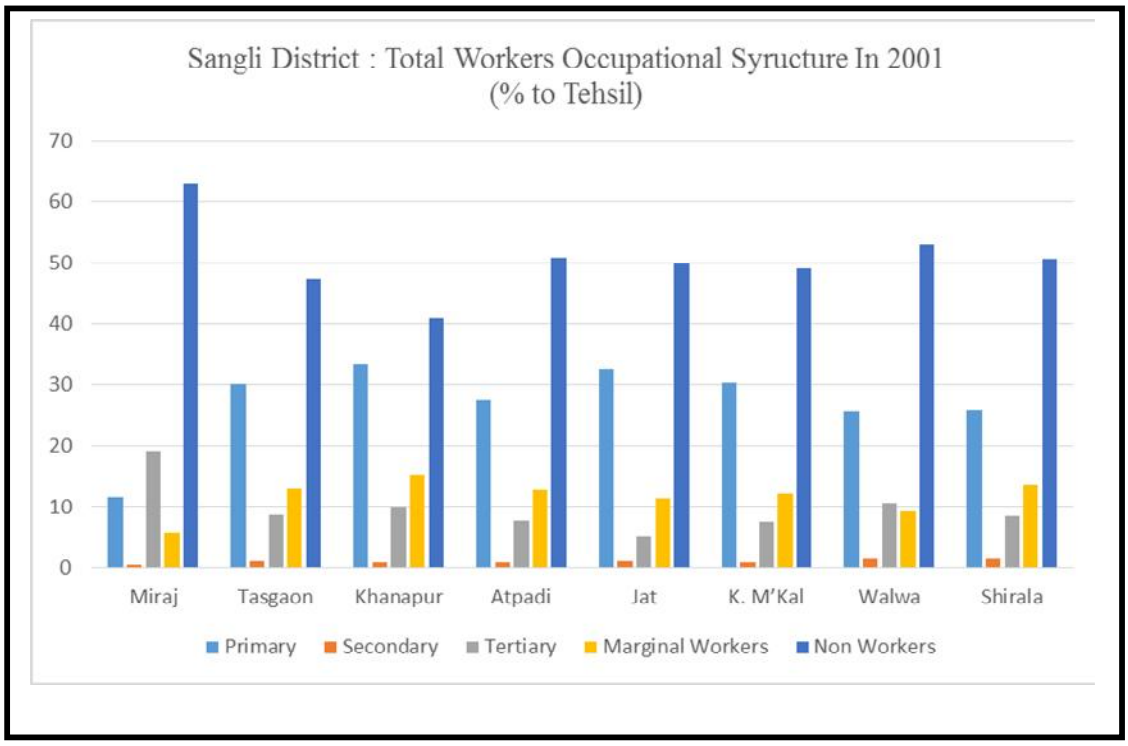
The table 7.1(III) reveals that, Khanapur tehsil total working population was 33.28 percent, 0.84 percent, 9.88 percent, 15.21 percent and 40.78 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district participation rate was 13.76 percent, 9.88 percent, 8.50 percent, 14.74 percent and 7.72 percent respectively during 2001 census.

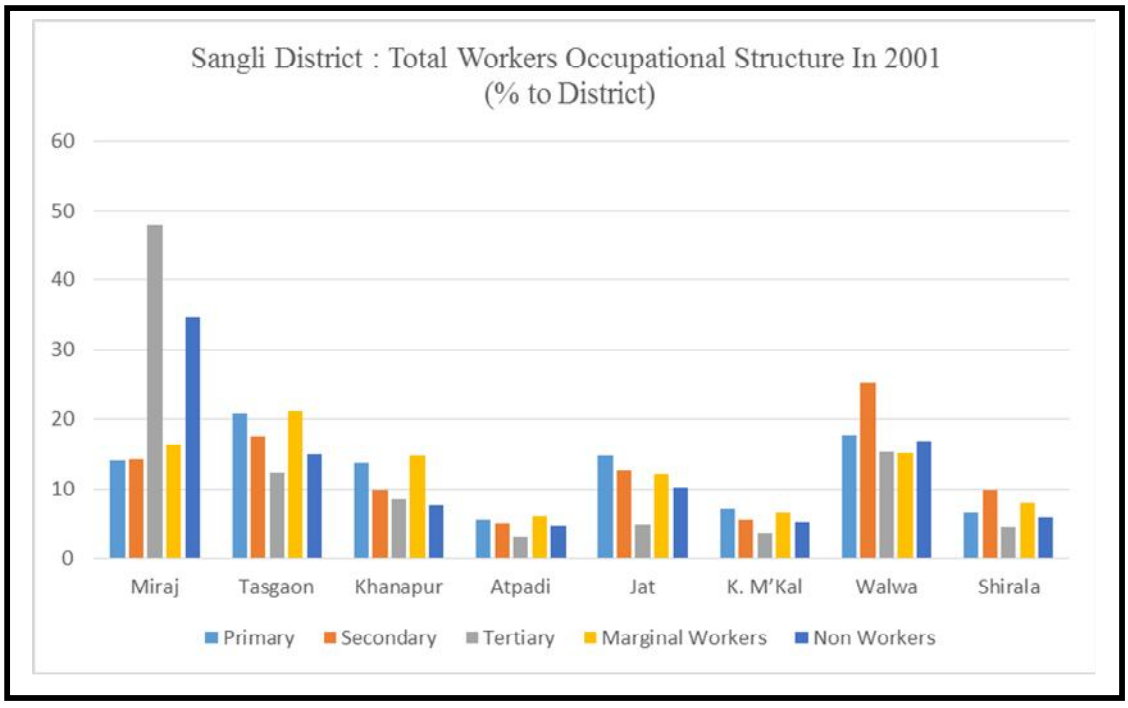
Table 7.1(III)

Sangli District Total Workers Occupational Structure 2001

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	11.68	0.42	19.17	5.78	62.95	14.04	14.23	47.97	16.30	34.64
Tasgaon	30.18	0.90	8.59	13.07	47.27	20.77	17.58	12.29	21.08	14.88
Khanapur	33.28	0.84	9.88	15.21	40.78	13.76	9.88	8.50	14.74	7.72
Atpadi	27.64	0.89	7.65	12.86	50.96	5.54	5.07	3.19	6.04	4.68
Jat	32.60	0.98	5.14	11.43	49.84	14.69	12.60	4.82	12.08	10.28
K. M'Kal	30.41	0.85	7.46	12.15	49.13	7.04	5.60	3.59	6.60	5.20
Walwa	25.59	1.29	10.62	9.36	53.14	17.59	25.25	15.18	15.09	16.72
Shirala	25.88	1.36	8.45	13.59	50.72	6.56	9.81	4.46	8.07	5.88
District total	24.23	0.85	11.65	10.33	52.94	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District- 2001.


Sangli District : Total Workers Occupational Syructure In 2001
(% to Tehsil)
70
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers


Sangli District : Total Workers Occupational Structure In 2001
(% to District)
60
50
40
30
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Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.1 (III)

Atpadi tehsil percentage of total working population was 27.64 percent in primary, 0.89 percent in secondary, 7.65 in tertiary, 12.86 percent in marginal workers and 50.96 percent in non-workers. District percentage was 5.54 percent, 5.07 percent, 3.19 percent, 6.04 percent and 4.68 percent in primary, Secondary, Tertiary, marginal workers and non-workers respectively.

The total working population of Jat tehsil was 32.60 percent in primary, 0.98 percent in secondary, 5.14 in tertiary, 11.43 percent in marginal workers and 49.84 percent in non-workers. And its District percentage was 14.69 percent, 12.60 percent, 4.82 percent, 12.08 percent and 10.28 percent in primary, Secondary, Tertiary, marginal workers and non-workers respectively.

Kavatemahakal tehsil observed that, 30.41 percent in primary, 0.85 percent in secondary, 7.46 in tertiary, 12.15 percent in marginal workers and 49.13 percent in non-workers. And the tehsil total working population percentage in the district was 7.04 percent in primary, 5.60 percent in secondary, 3.59 percent in tertiary, 6.60 percent in marginal workers and 5.20 percent in non-workers.

Walwa tehsil percentage of total working population observed 25.59 percent in primary, 1.29 percent in secondary, 10.62 in tertiary, 9.36 percent in marginal workers and 53.14 percent in non-workers. And the tehsil total working population percentage in the district was 17.59 percent in primary, 25.25 percent in secondary, 15.18 percent in tertiary, 15.09 percent in marginal workers and 16.72 percent in non-workers.

Percentage of Shirala tehsil observed that, 25.88 percent in primary, 1.36 percent in secondary, 8.45 in tertiary, 13.59 in marginal workers and 50.72 percent in non-workers and its district percentage was 6.56 percent, 9.81 percent, 4.46 percent, 8.07 percent and 5.88 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

District total working population table no. 7.1(III) observed that, in the primary sector Tasgaon tehsil working population was 20.77 percent in district. Walwa tehsil secondary sector working population was 25.25 percent, it was the high in the district. In the district high tertiary working population in Miraj tehsil was 42.97 percent. Tasgaon Marginal working population was 21.08 percent in the district it was high in the district. Non-workers high population observed in Miraj tehsil it was 34.64 percent. In this census year Miraj tehsil observed tertiary and non-working high population in the district. And Tasgaon tehsil high population percentage in primary and Marginal workers in the district.

iv) Census 2011:

Table No. 7.1(IV) indicates that total working population participation into the study region. It is observed that Miraj tehsil 11. Percent, 1.23 percent, 20.94 percent, 3.46 percent and 62.45 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 15.46 percent in primary, 33.80 percent in secondary, 51.82 percent in tertiary, 22.81 in marginal workers and 35.91 percent in non-workers.

Tasgaon tehsil total workers population was observed that, 28.23 percent, 1.14 percent, 9.64 percent, 5.16 percent and 55.82 percent in primary, secondary, tertiary, marginal workers and non-workers respectively in the tehsil during 2011 census. And its district percentage was 17.83 percent in primary sector, 15.27 percent in secondary sector, 11.63 percent in tertiary sector, 16.61 percent in marginal workers and 15.64 in non-workers.

According to table no. 7.1(IV) observed that, 33.72 percent in primary, 0.55 percent in secondary, 7.80 percent in tertiary, 6.73 percent in marginal workers and 51.20 percent in non-workers in Khanapur tehsil and its district percentage was 7.32 percent in primary, 2.53 percent in secondary, 3.23 percent in tertiary, 7.44 percent in marginal workers and 4.93 percent in non-workers during 2011census.

Atpadi tehsil observed that, 38.31 percent, 1.39 percent, 10.74 percent, 7.23 percent and 42.33 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 6.20 percent in primary sector, 4.78 percent in secondary sector, 3.32 percent in tertiary sector, 5.96 percent in marginal workers and 3.04 percent in non-workers.

Jat tehsil observed that, 33.90 percent, 1.01 percent, 6.94 percent, 5.72 percent and 52.43 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 16.88 percent in

primary sector, 10.70 percent in secondary sector, 6.60 percent in tertiary sector, 14.51 percent in marginal workers and 11.58 percent in non-workers.

Table 7.1(IV)

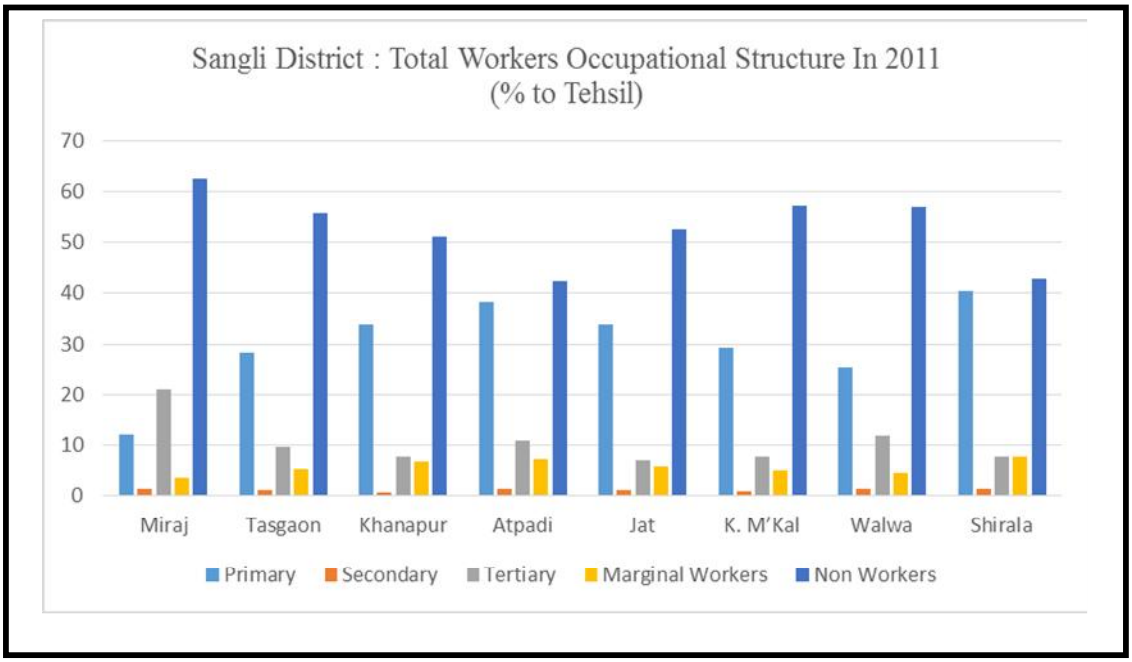
Sangli District Total Workers Occupational Structure 2011

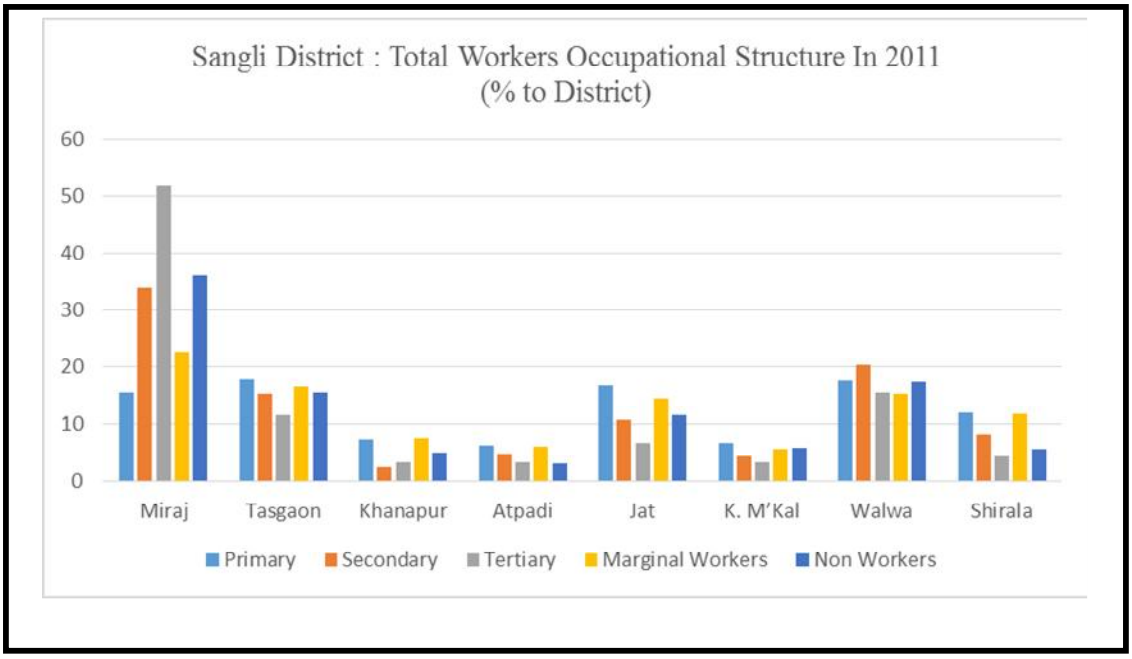
Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	11.93	1.23	20.94	3.46	62.45	15.46	33.80	51.82	22.81	35.91
Tasgaon	28.23	1.14	9.64	5.16	55.82	17.83	15.27	11.63	16.61	15.64
Khanapur	33.72	0.55	7.80	6.73	51.20	7.32	2.53	3.23	7.44	4.93
Atpadi	38.31	1.39	10.74	7.23	42.33	6.20	4.78	3.32	5.96	3.04
Jat	33.90	1.01	6.94	5.72	52.43	16.88	10.70	6.60	14.51	11.58
K. M'Kal	29.39	0.87	7.72	4.82	57.20	6.79	4.27	3.41	5.67	5.86
Walwa	25.52	1.39	11.82	4.35	56.91	17.65	20.42	15.62	15.33	17.46
Shirala	40.35	1.32	7.79	7.80	42.75	11.86	8.23	4.37	11.67	5.57
District total	24.86	1.17	13.02	4.88	56.06	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District-2011

Table no. 7.1(IV) observed that, 29.39 percent in primary, 0.87 percent in secondary, 7.72 percent in tertiary, 4.82 percent in marginal workers and 57.20 percent in non-workers in Kavate-Mahakal tehsil and its district percentage was 6.79 percent in primary, 4.27 percent in secondary, 3.41 percent in tertiary, 5.67 percent in marginal workers and 5.86 percent in non-workers.

Walwa tehsil total working population was observed that, 25.52 percent in primary, 1.39 percent in secondary, 11.82 percent in tertiary, 4.35 percent in marginal workers and 56.91 percent in non-workers and its district percentage


Sangli District : Total Workers Occupational Structure In 2011
(% to Tehsil)
70
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers


Sangli District : Total Workers Occupational Structure In 2011
(% to District)
60
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Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.1 (IV)

was 17.65 percent in primary, 20.42 percent in secondary, 15.62 percent in tertiary, 15.33 percent in marginal workers and 17.46 percent in non-workers.

And Shirala tehsil total working population was observed that, 40.35 percent in primary, 1.32 percent in secondary, 7.79 percent in tertiary, 7.80 percent in marginal workers and 42.75 percent in non-workers. And its district percentage was 11.86 percent in primary, 8.23 percent in secondary, 4.37 percent in tertiary, 11.67 percent in marginal workers and 5.57 percent in non-workers.

During 2011 census table no. 7.1(IV) observed that the district total occupational percentage of the tehsils. The high percentage in the primary sector was 17.83 percent in Tasgaon tehsil. Miraj tehsil highest percentage in secondary sector, tertiary sector, marginal workers and non-workers it was 33.80 percent, 51.82 percent, 22.81 percent and 35.91 percent respectively.

7.3 SANGLI DISTRICT RURAL OCCUPATIONAL STRUCTURE 1981-2011:

i) Census 1981:

Table no 7.2(I) shows that the rural occupational structure of Sangli district tehsil to tehsil during 1981 census. It was observed that Miraj tehsil population engaged 8.89 percent in primary sector, 0.22 percent in secondary sector, 2.54 percent in tertiary sector, 0.91 percent marginal workers and 87.44 percent t in non-workers. And its district percentage was 15.82 percent in

primary, 13.56 percent in secondary, 21.07 percent in tertiary, 7.99 percent in marginal workers and 47.74 percent in non-workers.

Tasgaon tehsil rural working population was engaged 28.58 percent in primary sector, 0.68 percent in secondary sector, 6.35 percent in tertiary sector, 5.93 percent marginal workers and 58.46 percent in non-workers. And its district percentage was 17.69 percent in primary, 14.60 percent in secondary, 18.31 percent in tertiary, 18.18 percent in marginal workers and 11.11 percent in non-workers during 1981.

Khanapur tehsil rural working population was observed that, 33.94 percent in primary, 0.60 percent in secondary, 4.40 percent in tertiary, 6.45 percent in marginal workers and 54.62 percent in non-workers. And its district percentage was 10.64 percent in primary, 9.74 percent in secondary, 9.68 percent in tertiary, 15.11 percent in marginal workers and 7.92 percent in non-workers.

It was observed that, 25.32 percent in primary, 1.27 percent in secondary, 5.57 percent in tertiary, 6.64 percent in marginal workers and 61.20 percent in non-workers in Atpadi tehsil and its district percentage was 5.19 percent in primary, 8.99 percent in secondary, 5.31 percent in tertiary, 6.74 percent in marginal workers and 3.85 percent in non-workers.

The rural working population of Jat tehsil was 30.16 percent in primary, 0.96 percent in secondary, 5.6 in tertiary, 5.69 percent in marginal workers and 57.55 percent in non-workers. And its District percentage was 14.20 percent,

15.61 percent, 12.35 percent, 13.28 percent and 8.31 percent in primary, Secondary, Tertiary, marginal workers and non-workers respectively

According to the table no. 7.2(I) observed Kavate-mahakal tehsil rural working population was 26.97 percent, 0.87 percent, 5.53 percent, 8.19 percent and 58.44 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 6.40 percent in primary, 7.16 percent in secondary, 6.11 percent in tertiary, 9.62 percent in marginal workers and 4.25 percent in non-workers.

Walwa tehsil rural working population was observed that, 28.73 percent in primary, 0.94 percent in secondary, 6.20 percent in tertiary, 4.24 percent in marginal workers and 59.89 percent in non-workers. And its district percentage was 17.29 percent in primary, 19.60 percent in secondary, 17.38 percent in tertiary, 12.65 percent in marginal workers and 11.07 percent in non-workers during 1981 census.

Table 7.2 (I)

Sangli District : Rural Occupational Structure 1981

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	8.89	0.22	2.54	0.91	87.44	15.82	13.56	21.07	7.99	47.74
Tasgaon	28.58	0.68	6.35	5.93	58.46	17.69	14.60	18.31	18.18	11.11
Khanapur	33.94	0.60	4.40	6.45	54.62	16.04	9.74	9.68	15.11	7.92
Atpadi	25.32	1.27	5.57	6.64	61.20	5.19	8.99	5.31	6.74	3.85
Jat	30.16	0.96	5.63	5.69	57.55	14.20	15.61	12.35	13.28	8.31
K. M'Kal	26.97	0.87	5.53	8.19	58.44	6.40	7.16	6.11	9.62	4.25
Walwa	28.73	0.94	6.20	4.24	59.89	17.29	19.60	17.38	12.65	11.07
Shirala	23.17	0.98	6.60	10.41	58.86	7.38	10.73	9.79	16.42	5.75
District total	21.26	0.62	4.56	4.29	69.27	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District -1981.

Table no. 7.2 (I) observed that, 23.17 percent, 0.98 percent, 6.60 percent, 10.41 percent and 58.86 percent in primary, secondary, tertiary, marginal workers and non-workers rural working population of Shirala tehsil respectively. And its district percentage was 7.38 percent in primary, 10.73 percent in secondary, 9.79 percent in tertiary, 16.42 percent in marginal workers and 5.75 percent in non-workers.

During 1981 census shows that, Sangli district rural working population in percentage. Tasgaon tehsil was highest in primary sector and marginal workers, it was 17.69 percent and 18.18 percent respectively. Secondary sector high rural working population in Walwa tehsil it was observed that 19.60 percent. Miraj tehsil high in tertiary sector and non-workers, it was 21.07 percent and 47.74 percent respectively.

ii) Census 1991:

According to table no. 7.2(II) observed that, Miraj tehsil rural working population was 28.38 percent in primary, 4.42 percent in secondary, 5.49 percent in tertiary, 5.74 percent in marginal workers and 55.98 percent in non-workers. Its district percentage was 14.51 percent in primary, 23.81 percent in secondary, 18.53 percent in tertiary, 10.33 percent in marginal workers and 16.90 percent in non-workers.

Tasgaon tehsil rural working population was observed 31.23, 3.03, 4.78, 8.03 and 52.89 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 18.30 percent in

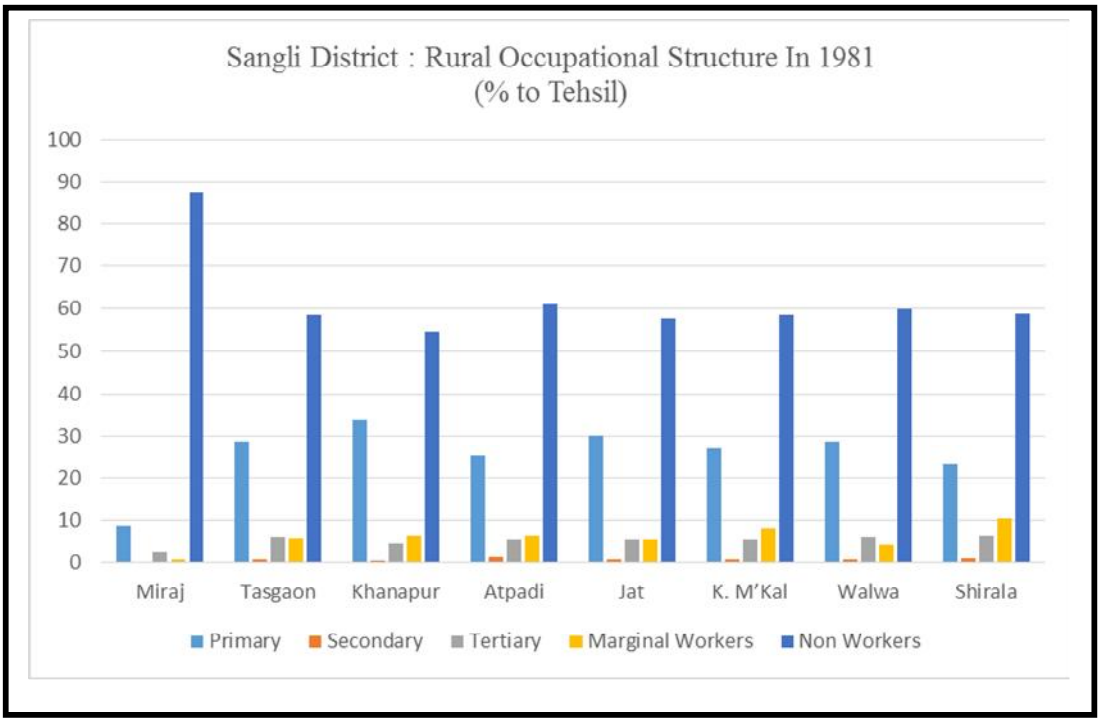
primary, 18.92 percent in secondary, 18.48 percent in tertiary, 16.56 percent in marginal workers and 18.29 percent in non-workers during 1991.

Khanapur tehsil rural working population was observed 34.77, 2.43, 4.17, 8.91 and 49.72 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 14.57 percent in primary, 10.73 percent in secondary, 11.55 percent in tertiary, 13.14 percent in marginal workers and 12.30 percent in non-workers.

Atpadi tehsil rural working population was observed, 29.85 percent in primary, 2.42 percent in secondary, 4.18 percent in tertiary, 9.98 percent in marginal workers and 53.56 percent in non-workers. And its district percentage was 6.29 percent in primary, 5.38 percent in secondary, 5.82 percent in tertiary, 7.40 percent in marginal workers and 6.66 percent in non-workers.

Rural working population 33.49 percent in primary, 1.76 percent in secondary, 4.21 percent in tertiary, 9.68 percent in marginal workers and 50.86 percent in non-workers was observed in Jat tehsil. And 15.22 percent in primary, 8.44 percent in secondary, 12.64 percent in tertiary, 15.48 percent in marginal workers and 13.64 percent in non-workers in district.

Table no. 7.2(II) shows that Kavate-mahakal rural working population was 29.04 percent in primary, 2.53 percent in secondary, 5.03 percent in tertiary, 11.42 percent in marginal workers and 51.99 percent in non-workers. And 6.46 percent in primary, 5.93 percent in secondary, 7.39 percent in tertiary, 8.95 percent in marginal workers and 6.83 percent in non-workers in district.


Sangli District : Rural Occupational Structure In 1981
(% to Tehsil)
100
90
80
70
60
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0
Miraj
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K. M'Kal
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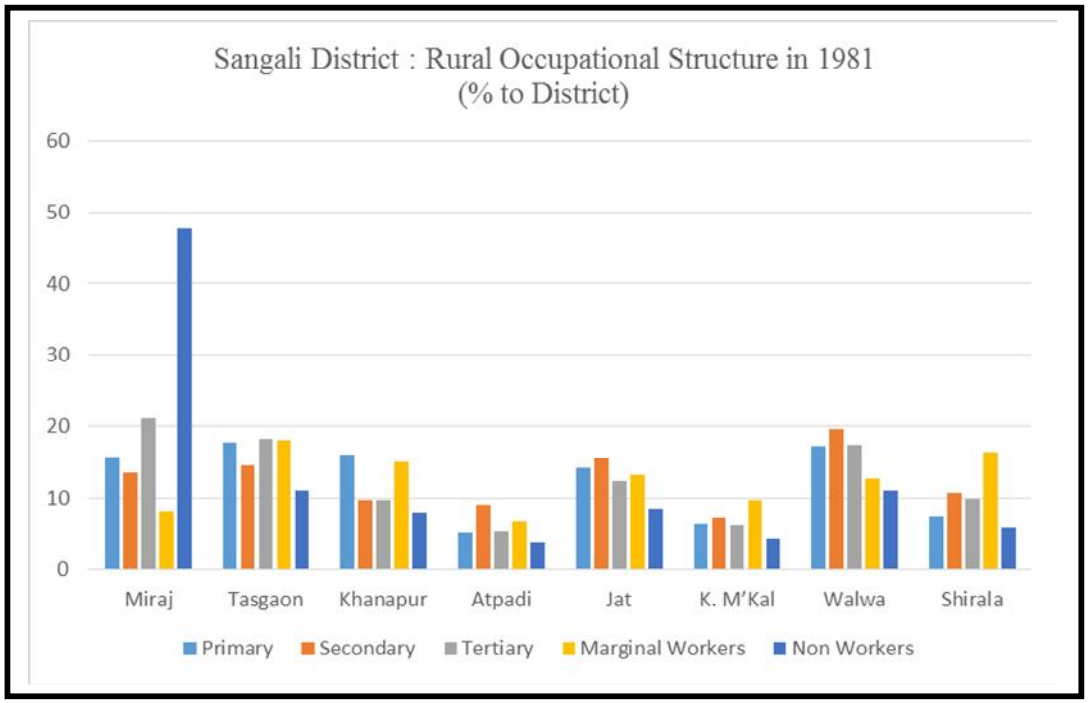
Non Workers


Sangali District : Rural Occupational Structure in 1981
(% to District)
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Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.2 (I)

Walwa tehsil observed 31.18 percent, 2.87 percent, 4.88 percent, 8.72 percent and 52.34 percent in primary, secondary. Tertiary, marginal workers and non-workers rural working population respectively and district percentage was 17.27, 16.76, 17.86, 17.01 and 17.11 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Table 7.2 (II)

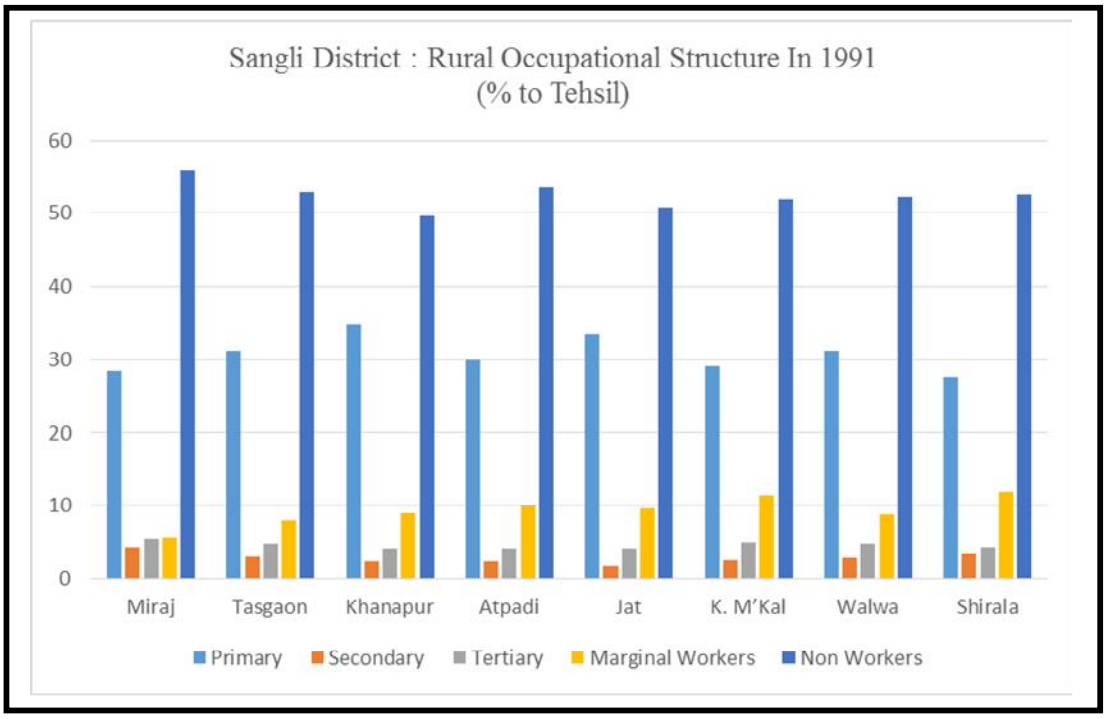
Sangli District : Rural Occupational Structure 1991

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	28.38	4.42	5.49	5.74	55.98	14.51	23.81	18.53	10.33	16.90
Tasgaon	31.23	3.06	4.78	8.03	52.89	18.30	18.92	18.48	16.56	18.29
Khanapur	34.77	2.43	4.17	8.91	49.72	14.57	10.73	11.55	13.14	12.30
Atpadi	29.85	2.42	4.18	9.98	53.56	6.29	5.38	5.82	7.40	6.66
Jat	33.49	1.76	4.21	9.68	50.86	15.22	8.44	12.64	15.48	13.64
K. M'Kal	29.04	2.53	5.03	11.42	51.99	6.46	5.93	7.39	8.95	6.83
Walwa	31.18	2.87	4.88	8.72	52.34	17.27	16.76	17.86	17.01	17.11
Shirala	27.64	3.56	4.39	11.86	52.54	7.37	10.02	7.73	11.14	8.27
District total	31.01	2.94	4.70	8.81	52.54	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District- 1991.

Shirala tehsil observed that, 27.64 percent, 3.56 percent, 4.39 percent, 11.86 percent and 52.54 percent in primary, secondary, tertiary, marginal workers and non-workers rural working population respectively. And its district percentage was 7.37 percent in primary, 10.02 percent in secondary, 7.73 percent in tertiary, 11.14 percent in marginal workers and 8.27 percent in non-workers.

Census year 1991 observed 31.01percent in primary, 2.94 percent in secondary, 4.70 percent in tertiary, 8.81 percent in marginal workers and 25.54


Sangli District : Rural Occupational Structure In 1991
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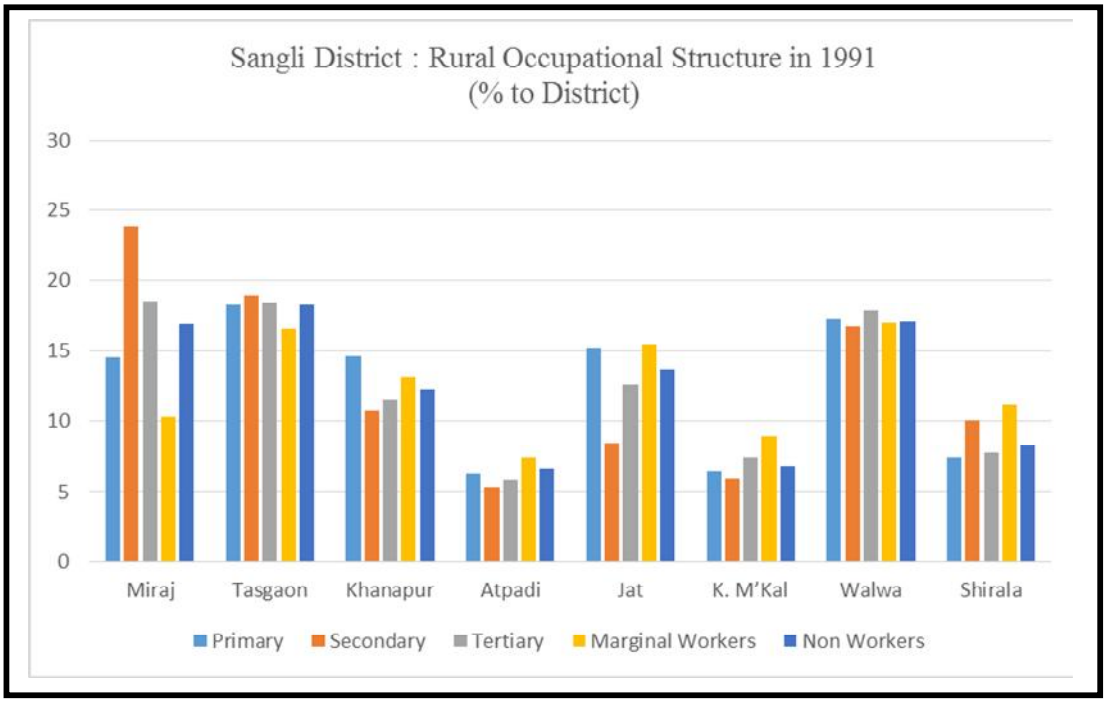
Sangli District : Rural Occupational Structure in 1991
(% to District)
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Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.2 (II)

percent in non-workers rural population of the Sangli district. And in the district Tasgaon tehsil primary sector, marginal workers and non-workers population was 18.30 percent, 16.56 percent and 18.29 percent respectively, it was high. In secondary sector and tertiary high population was observed 23.81 percent and 18.53 percent in Miraj tehsil.

iii) Census 2001:

Table no. 7.2(III) indicates that rural occupational structure of Sangli district tehsil to tehsil during 2001. Miraj tehsil rural working population was 26.23 percent in primary, 1.08 percent tin secondary, 8.70 percent tin tertiary, 9.73 in marginal workers and 54.27 percent in non-workers. And 13.00 percent in primary, 15.79 percent in secondary, 17.48 percent in tertiary, 11.76 in marginal workers and 16.82 percent in non-workers in the district percentage.

Tasgaon tehsil observed that, 31.80 percent, 0.90 percent, 7.73 percent, 13.65 percent and 45.92 percent in primary, secondary, tertiary, marginal workers and non-workers rural working population respectively. And its district percentage was 21.28 percent in primary, 17.80 percent in secondary, 20.98 percent in tertiary, 22.28 percent in marginal workers and 19.22 percent in non-workers.

Khanapur tehsil rural working population was observed 37.73, 0.76, 7.27, 17.31 and 36.93 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 13.79 percent in primary, 8.23 percent in secondary, 10.78 percent in tertiary, 15.43 percent in marginal workers and 8.44 percent in non-workers during 2001.

Atpadi tehsil observed 27.64 percent, 0.89 percent, 7.65 percent, 12.86 percent and 50.96 percent in primary, secondary, tertiary, marginal workers and non-workers rural working population of respectively. And its district percentage was 5.85 percent in primary, 5.56 percent in secondary, 6.56 percent in tertiary, 6.63 percent in marginal workers and 6.74 percent in non-workers.

It was observed 32.60 percent, 0.98 percent, 5.14 percent, 11.43 percent and 49.84 percent in primary, secondary, tertiary, marginal workers and non-workers rural working population respectively in the Jat tehsil. And its district percentage was 15.50 percent in primary, 13.82 percent in secondary, 9.91 percent in tertiary, 13.25 percent in marginal workers and 14.82 percent workers in non-working population.

Table 7.2 (III)

Sangli District: Rural Occupational Structure 2001

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	26.23	1.08	8.70	9.73	54.27	13.00	15.79	17.48	11.76	16.82
Tasgaon	31.80	0.90	7.73	13.65	45.92	21.28	17.80	20.98	22.28	19.22
Khanapur	37.73	0.76	7.27	17.31	36.93	13.79	8.23	10.78	15.43	8.44
Atpadi	27.64	0.89	7.65	12.86	50.96	5.85	5.56	6.56	6.63	6.74
Jat	32.60	0.98	5.14	11.43	49.84	15.50	13.82	9.91	13.25	14.82
K. M'Kal	30.41	0.85	7.46	12.15	49.13	7.43	6.14	7.39	7.24	7.50
Walwa	28.86	1.32	7.86	10.63	51.34	16.37	22.05	18.07	14.70	18.21
Shirala	25.98	1.38	8.35	13.69	50.60	6.78	10.61	8.83	8.70	8.25
District total	30.39	1.03	7.50	12.47	48.61	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District-2001.

Table no. 7.2 (III) shows that Kavathe-Mahankal rural working population was 30.41 percent in primary, 0.85 percent in secondary, 7.46 percent in tertiary, 12.15 percent in marginal workers and 49.13 percent in non-workers. And 7.43 percent in primary, 6.14 percent in secondary, 7.39 percent in tertiary, 7.24 percent in marginal workers and 7.50 percent in non-workers in district.

Walwa tehsil rural working population was 28.86 percent in primary, 1.32 percent in secondary, 7.86 percent in tertiary, 10.63 percent in marginal workers and 51.34 percent in non-workers. And its district percentage was 16.37 percent in primary, 22.05 percent in secondary, 18.07 percent in tertiary, 14.70 percent in marginal workers and 18.31 percent in non-workers.

Shirala tehsil observed rural working population was 25.98 percent, 1.38 percent, 8.35 percent, 13.69 percent and 50.60 percent in primary, secondary, tertiary, marginal workers and non-workers rural working population respectively. And its district percentage was 6.78 percent in primary, 10.61 percent in secondary, 8.83 percent in tertiary, 8.70 percent in marginal workers and 8.25 percent in non-workers.

During 2001 census district rural working population was observed 30.39 percent in primary, 1.03 percent in secondary, 7.50 percent in tertiary, 12.47 percent in marginal workers and 48.61 percent in non-workers. Walwa had highest percentage in primary and secondary sector in the district, it was 16.37 and 22.05 percent respectively. Tertiary, marginal workers and non-workers

was highest in Tasgaon tehsil it was 20.98 percent, 22.28 percent and 19.22 percent respectively.

iv) Census 2011:

Table No. 7.2(IV) indicates that total working population participation into the study region. It is observed that Miraj tehsil 26.77 Percent, 0.93 percent, 10.42 percent, 4.43 percent and 54.45 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 13.90 percent in primary, 13.99 percent in secondary, 19.63 percent in tertiary, 13.25 in marginal workers and 17.86 percent in non-workers.

Tasgaon tehsil total workers population was observed that, 29.78 percent, 1.10 percent, 8.77 percent, 5.30 percent and 55.05 percent in primary, secondary, tertiary, marginal workers and non-workers respectively in the tehsil during 2011 census. And its district percentage was 17.94 percent in primary sector, 19.20 percent in secondary sector, 19.19 percent in tertiary sector, 18.42 percent in marginal workers and 19.86 in non-workers.

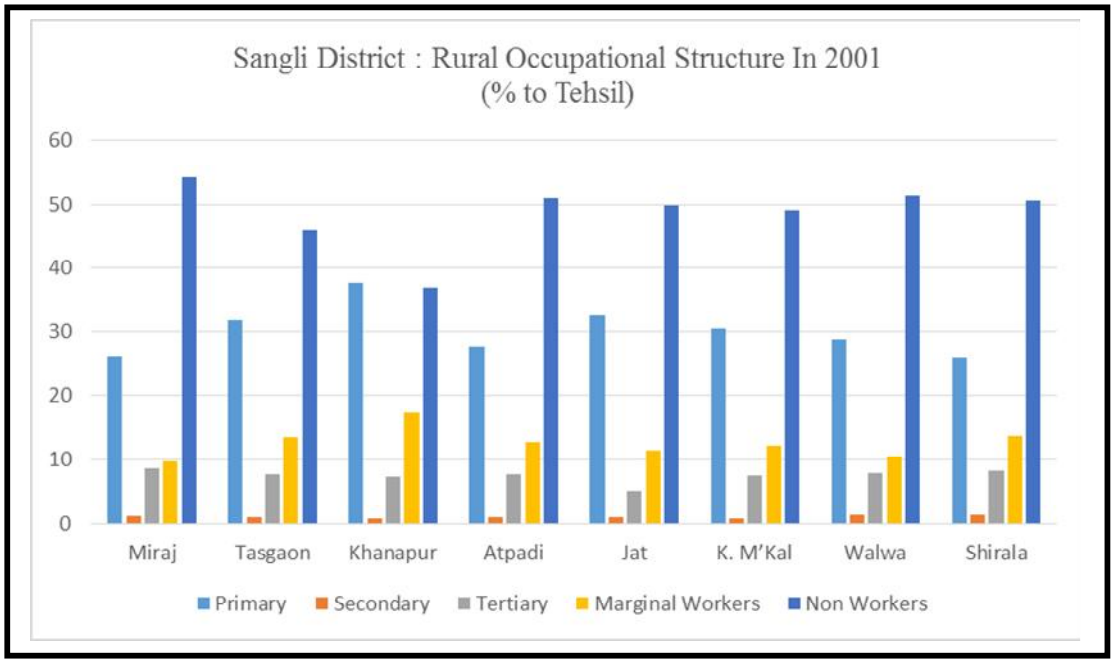
According to table no. 7.2(IV) observed that, 33.72 percent in primary, 0.55 percent in secondary, 7.80 percent in tertiary, 6.73 percent in marginal workers and 51.20 percent in non-workers in Khanapur tehsil and its district percentage was 7.68 percent in primary, 3.63 percent in secondary, 6.45 percent in tertiary, 8.84 percent in marginal workers and 6.98 percent in non-workers during 2011census.

Atpadi tehsil observed that, 38.31 percent, 1.39 percent, 10.74 percent, 7.23 percent and 42.33 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 6.51 percent in primary sector, 6.87 percent in secondary sector, 6.63 percent in tertiary sector, 7.08 percent in marginal workers and 4.31 percent in non-workers.

Jat tehsil observed that, 33.90 percent, 1.01 percent, 6.94 percent, 5.72 percent and 52.43 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 17.73 percent in primary sector, 15.38 percent in secondary sector, 13.17 percent in tertiary sector, 17.24 percent in marginal workers and 16.42 percent in non-workers.

Table no. 7.2(IV) observed that, 29.39 percent in primary, 0.87 percent in secondary, 7.72 percent in tertiary, 4.82 percent in marginal workers and 57.20 percent in non-workers in Kavate-mahakal tehsil and its district percentage was 7.13 percent in primary, 6.14 percent in secondary, 6.80 percent in tertiary, 6.74 percent in marginal workers and 8.31 percent in non-workers.

Walwa tehsil total working population was observed that, 25.52 percent in primary, 1.39 percent in secondary, 11.82 percent in tertiary, 4.35 percent in marginal workers and 56.91 percent in non-workers and its district percentage was 16.16 percent in primary, 22.95 percent in secondary, 19.42 percent in tertiary, 14.57 percent in marginal workers and 18.32 percent in non-workers.


Sangli District : Rural Occupational Structure In 2001
(% to Tehsil)
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

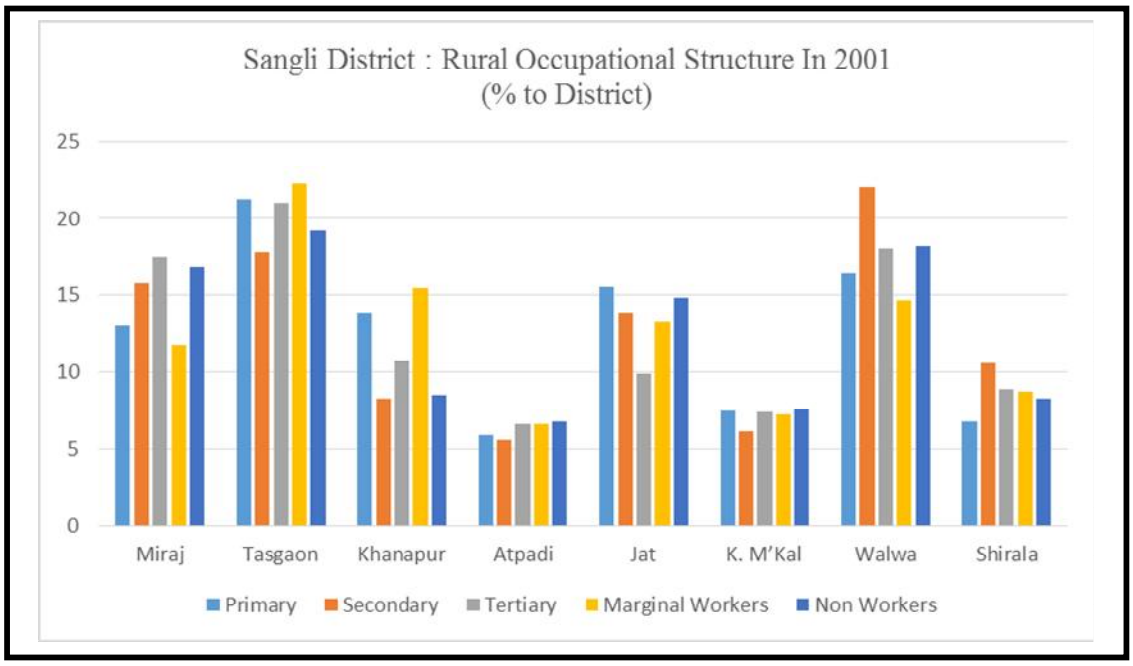

Sangli District : Rural Occupational Structure In 2001
(% to District)
25
20
15
10
5
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.2 (III)

Table 7.2 (IV)

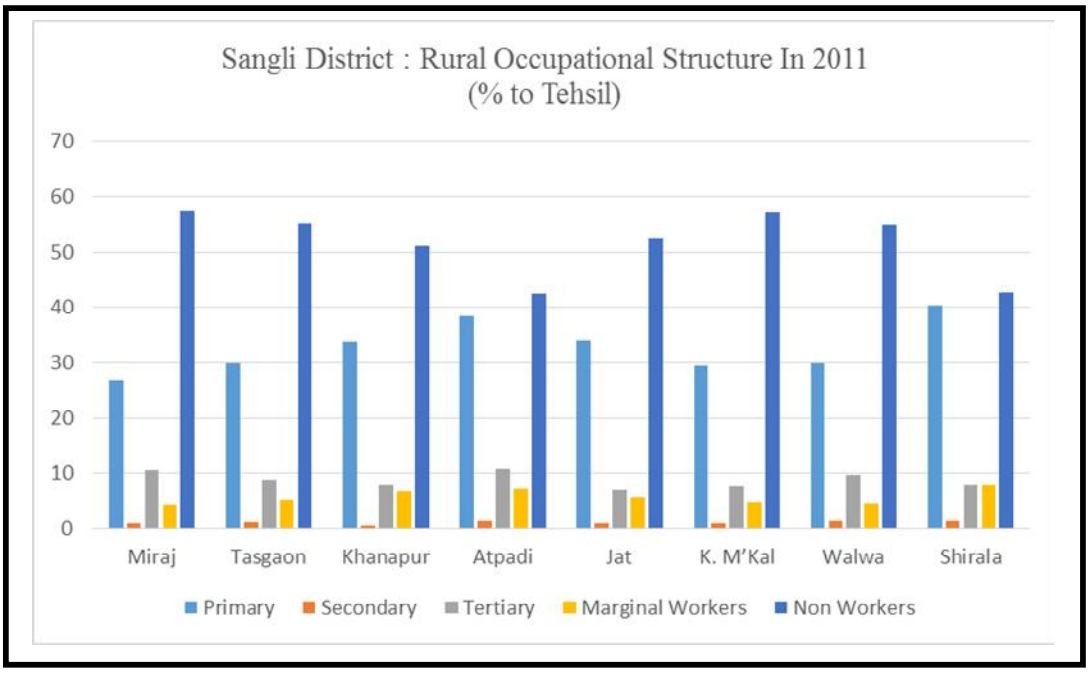
Sangli District Rural Occupational Structure 2011

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	26.77	0.93	10.42	4.43	57.45	13.90	13.99	19.63	13.25	17.86
Tasgaon	29.78	1.10	8.77	5.30	55.05	17.94	19.20	19.19	18.42	19.86
Khanapur	33.72	0.55	7.80	6.73	51.20	7.68	3.63	6.45	8.84	6.98
Atpadi	38.31	1.39	10.74	7.23	42.33	6.51	6.87	6.63	7.08	4.31
Jat	33.90	1.01	6.94	5.72	52.43	17.73	15.38	13.17	17.24	16.42
K. M'Kal	29.39	0.87	7.72	4.82	57.20	7.13	6.14	6.80	6.74	8.31
Walwa	29.75	1.41	9.56	4.52	54.76	16.66	22.95	19.42	14.57	18.36
Shirala	40.35	1.32	7.79	7.80	42.75	12.45	11.83	8.72	13.86	7.90
District total	31.71	1.09	8.74	5.50	52.96	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District-2011.

And Shirala tehsil total working population was observed that, 40.35 percent in primary, 1.32 percent in secondary, 7.79 percent in tertiary, 7.80 percent in marginal workers and 42.75 percent in non-workers. And its district percentage was 12.45 percent in primary, 11.83 percent in secondary, 8.72 percent in tertiary, 13.86 percent in marginal workers and 7.90 percent in non-workers.

During 2011 census table no. 7.2(IV) observed that the district total occupational percentage of the tehsils. The high percentage in the primary sector was 17.94 percent in Tasgaon tehsil. Walawa tehsil highest percentage in secondary sector it was 22.95 percent, Miraj highest percentage in tertiary sector it was 19.63 percent. Tasgaon high percent in marginal workers and non-workers it was 18.42 percent and 19.86 percent respectively.


Sangli District : Rural Occupational Structure In 2011
(% to Tehsil)
70
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

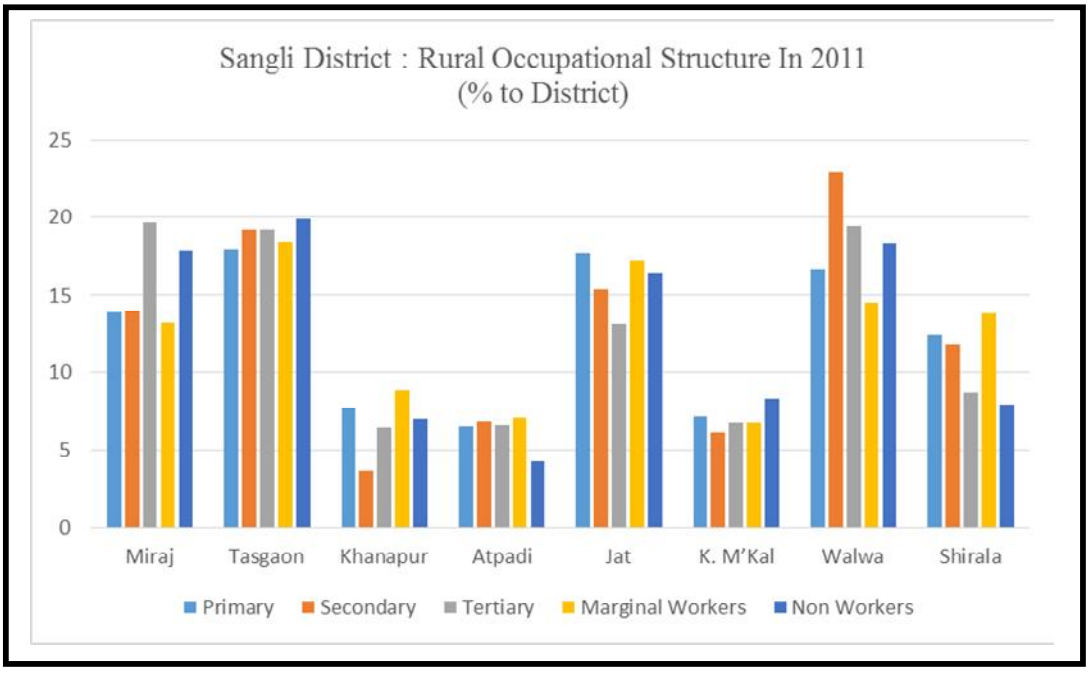

Sangli District : Rural Occupational Structure In 2011
(% to District)
25
20
15
10
5
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.2 (IV)

7.4 SANGLI DISTRICT : URBAN OCCUPATIONAL STRUCTURE 1991-2011:

i) Census 1981:

Table no 7.3(I) observed that in 1981census, Miraj tehsil 4.19 percent in primary, 1.11 percent in secondary, 23.17 percent in tertiary, 0.83 percent in marginal workers and 70.71 percent in non-workers. And Miraj tehsil urban district percent was 21.86 percent, 66.55 percent, 76.17 percent, 55.24 percent and 69.23 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

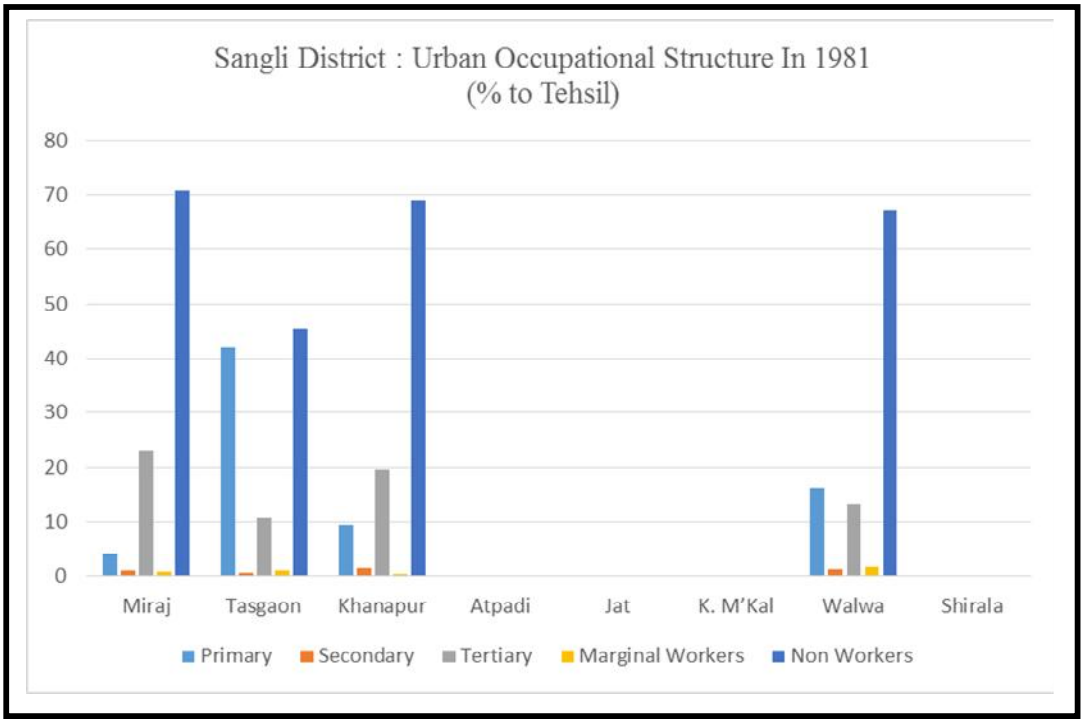
Tasgaon tehsil 42.09 percent in primary, 0.58 percent in secondary, 10.87 percent in tertiary, 1.16 percent in marginal workers and 45.30 percent in non-workers. And its district percent was 56.60 percent, 8.91 percent, 9.19 percent, 20.03 percent and 11.41 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Table 7.3 (I)

Sangli District : Urban Occupational Structure 1981

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	4.19	1.11	23.17	0.83	70.71	21.86	66.55	76.17	55.24	69.23
Tasgaon	42.09	0.58	10.87	1.16	45.30	56.50	8.91	9.19	20.03	11.41
Khanapur	9.40	1.52	19.69	0.42	68.98	4.39	8.15	5.79	2.49	6.05
Atpadi	-	-	-	-	-	-	-	-	-	-
Jat	-	-	-	-	-	-	-	-	-	-
K. M'Kal	-	-	-	-	-	-	-	-	-	-
Walwa	16.36	1.35	13.32	1.64	67.33	17.25	16.38	8.85	22.24	13.32
Shirala	-	-	-	-	-	-	-	-	-	-
District total	12.37	1.07	19.64	0.96	65.95	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District-1981


Sangli District : Urban Occupational Structure In 1981
(% to Tehsil)
80
70
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

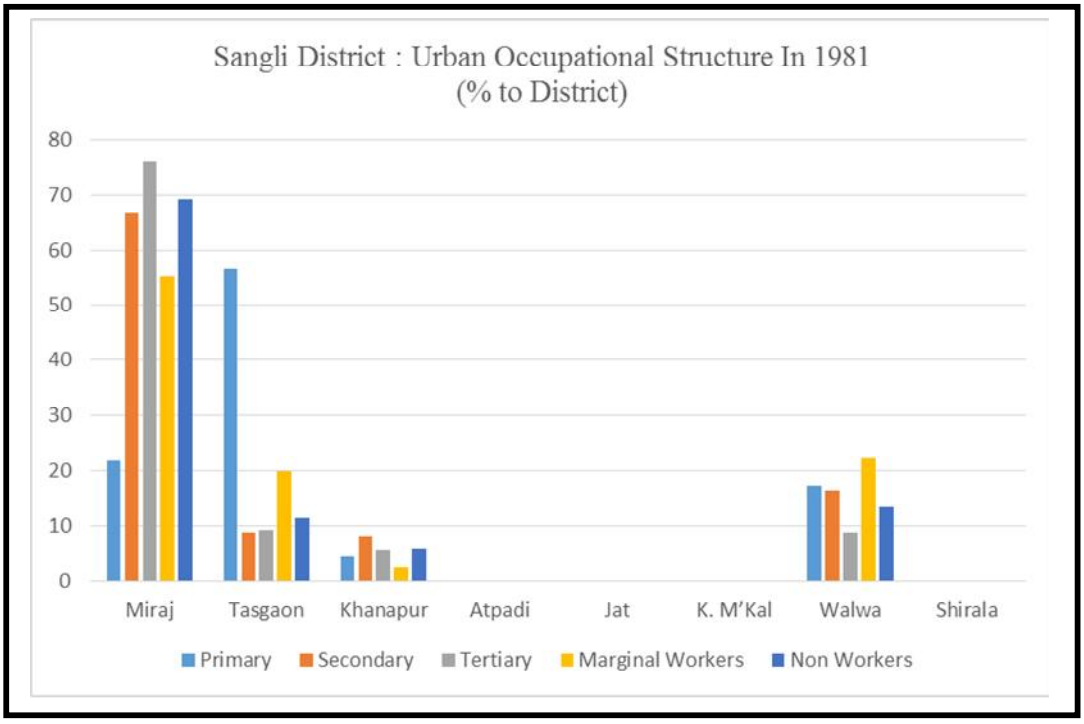

Sangli District : Urban Occupational Structure In 1981
(% to District)
80
70
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.3 (I)

Khanapur tehsil total urban working population was observed that, 9.40 percent in primary, 1.52 percent in secondary, 19.69 percent in tertiary, 0.42 percent in marginal workers and 68.98 percent in non-workers and its district percentage was 4.39 percent in primary, 8.15 percent in secondary, 5.79 percent in tertiary, 2.49 percent in marginal workers and 6.05 percent in non-workers.

Walwa tehsil observed that, 16.36 percent, 1.35 percent, 13.32 percent, 1.64 percent and 67.33 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 17.25 percent in primary sector, 16.38 percent in secondary sector, 8.85 percent in tertiary sector, 22.24 percent in marginal workers and 13.32 percent in non-workers.

During 1981 census table no. 7.3(IV) observed that the district total urban occupational percentage of the tehsils. It was the high percentage in the primary sector was 56.50 percent in Tasgaon tehsil. Miraj tehsil highest percentage in secondary sector, tertiary sector, marginal workers and non-workers it was 66.55 percent, 76.17 percent, 55.24 percent and 69.23 percent respectively.

ii) Census 1991:

Table no 7.3(II) observed that in 1991census, Miraj tehsil 5.13 percent in primary, 8.87 percent in secondary, 15.94 percent in tertiary, 1.61 percent in marginal workers and 68.44 percent in non-workers. And Miraj tehsil urban district percent was 7.72 percent, 79.83 percent, 76.60 percent, 55.59 percent

and 78.83 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Table 7.3 (II)

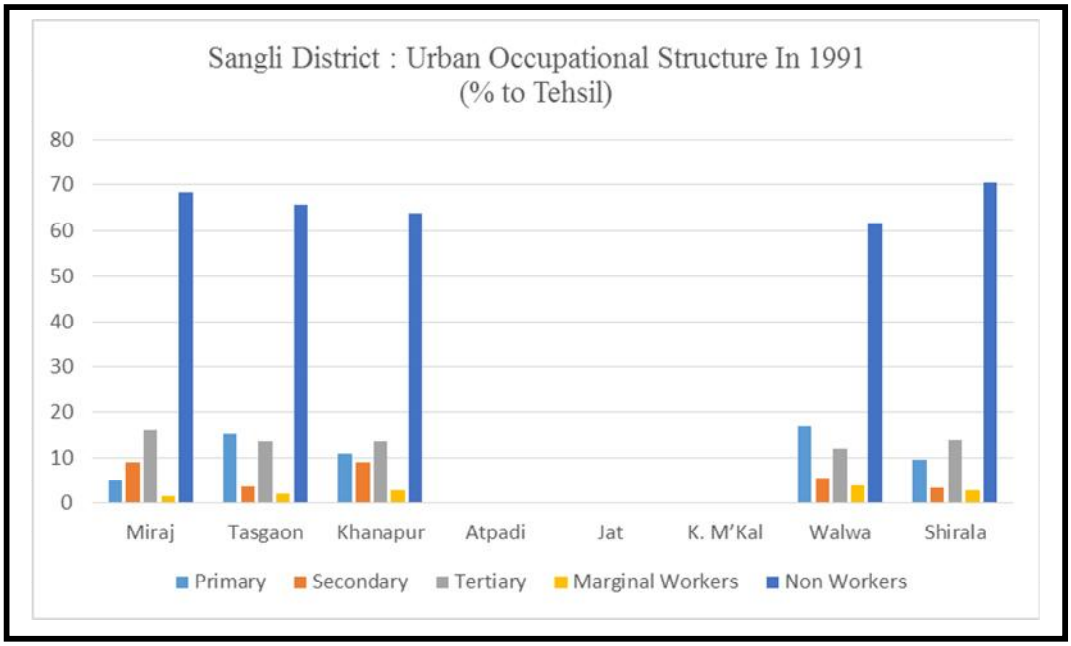
Sangli District : Urban Occupational Structure 1991

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	5.13	8.87	15.94	1.61	68.44	47.72	79.83	76.60	56.59	73.83
Tasgaon	15.00	3.79	13.47	2.13	65.62	11.27	2.75	5.23	6.05	5.72
Khanapur	10.74	8.97	13.45	2.85	63.98	8.79	7.10	5.69	8.83	6.07
Atpadi	-	-	-	-	-	-	-	-	-	-
Jat	-	-	-	-	-	-	-	-	-	-
K. M'Kal	-	-	-	-	-	-	-	-	-	-
Walwa	16.91	5.56	12.01	3.90	61.62	30.49	9.70	11.20	26.59	12.89
Shirala	9.54	3.44	13.69	2.81	70.52	1.74	0.61	1.29	1.93	1.49
District total	7.78	8.04	15.06	2.06	67.06	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District -1991

Tasgaon tehsil 15.00 percent in primary, 3.79 percent in secondary, 13.47 percent in tertiary, 2.13 percent in marginal workers and 65.62 percent in non-workers. And its district percent was 11.27 percent, 2.75 percent, 5.23 percent, 6.05 percent and 7.72 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Khanapur tehsil total urban working population was, 10.74 percent in primary, 8.97 percent in secondary, 13.45 percent in tertiary, 2.85 percent in marginal workers and 63.98 percent in non-workers and its district percentage was 8.79 percent in primary, 7.10 percent in secondary, 5.69 percent in tertiary, 8.83 percent in marginal workers and 6.07 percent in non-workers.


Sangli District : Urban Occupational Structure In 1991
(% to Tehsil)
80
70
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

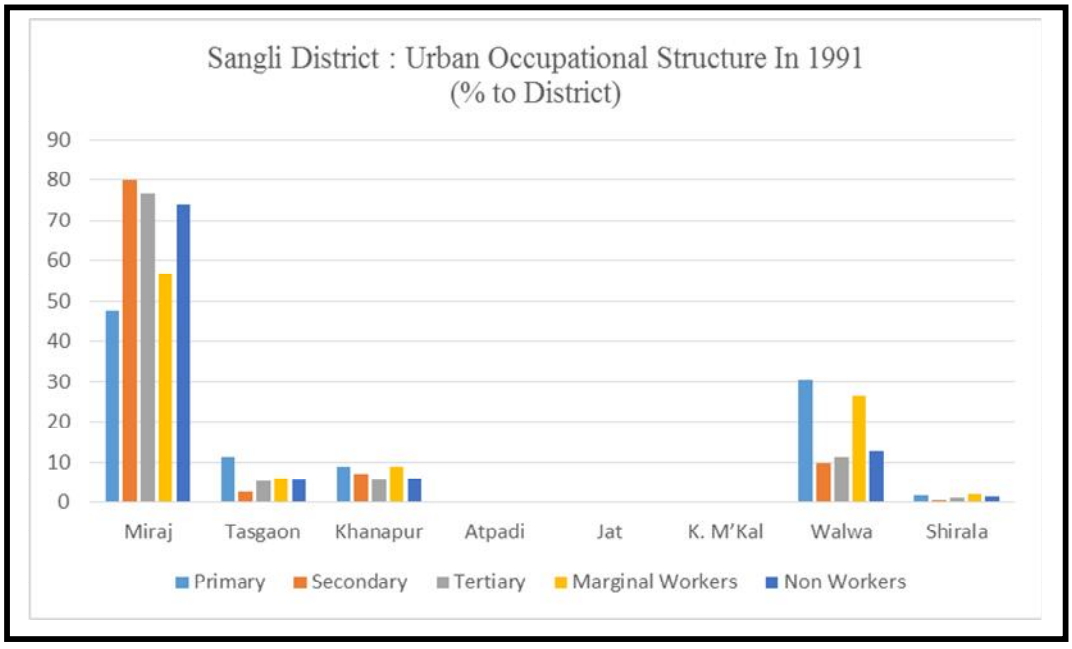

Sangli District : Urban Occupational Structure In 1991
(% to District)
90
80
70
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.3 (II)

Walwa tehsil observed that, 16.91 percent, 5.56 percent, 12.01 percent, 3.90 percent and 61.62 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 30.49 percent in primary sector, 9.70 percent in secondary sector, 11.20 percent in tertiary sector, 26.59 percent in marginal workers and 12.89 percent in non-workers.

Shirala tehsil observed that, 9.54 percent, 3.44 percent, 13.69 percent, 2.81 percent and 70.52 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 1.74 percent in primary sector, 0.61 percent in secondary sector, 1.29 percent in tertiary sector, 1.93 percent in marginal workers and 1.49 percent in non-workers.

During 1981 census table no. 7.3(II) observed that the district total urban occupational percentage of the tehsils. Miraj tehsil highest percentage in Primary sector, secondary sector, tertiary sector, marginal workers and non-workers it was 42.72 percent, 79.83 percent, 76.60 percent, 56.59 percent and 73.83 percent respectively.

iii) Census 2001:

Table no 7.3(III) indicates that in 2001census, Miraj tehsil 2.32 percent in primary, 1.07 percent in secondary, 25.62 percent in tertiary, 3.21 percent in marginal workers and 67.78 percent in non-workers. And Miraj tehsil urban district percent was 32.94 percent, 71.49 percent, 77.85 percent, 62.98 percent

and 75.00 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Tasgaon tehsil 11.11 percent in primary, 0.88 percent in secondary, 18.69 percent in tertiary, 6.14 percent in marginal workers and 63.18 percent in non-workers. And its district percent was 11.43 percent, 4.26 percent, 4.11 percent, 8.70 percent and 5.06 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Khanapur tehsil total urban working population was observed that, 10.23 percent in primary, 1.25 percent in secondary, 23.41 percent in tertiary, 4.34 percent in marginal workers and 60.76 percent in non-workers and its district percentage was 13.15 percent in primary, 7.52 percent in secondary, 6.43 percent in tertiary, 7.69 percent in marginal workers and 6.08 percent in non-workers.

Walwa tehsil observed that, 14.17 percent, 1.24 percent, 18.78 percent, 4.91 percent and 60.90 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 39.88 percent in primary sector, 16.29 percent in secondary sector, 11.29 percent in tertiary sector, 19.04 percent in marginal workers and 13.34 percent in non-workers.

Table 7.3 (III)

Sangli District : Urban Occupational Structure 2001

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	2.32	1.07	25.62	3.21	67.78	32.94	71.49	77.85	62.98	75.00
Tasgaon	11.11	0.88	18.69	6.14	63.18	11.43	4.26	4.11	8.70	5.06
Khanapur	10.23	1.25	23.41	4.34	60.76	13.15	7.52	6.43	7.69	6.08
Atpadi	-	-	-	-	-	-	-	-	-	-
Jat	-	-	-	-	-	-	-	-	-	-
K. M'Kal	-	-	-	-	-	-	-	-	-	-
Walwa	14.17	1.24	18.78	4.91	60.90	39.88	16.29	11.29	19.04	13.34
Shirala	21.60	0.76	12.32	9.56	55.76	2.60	0.43	0.32	1.59	0.52
District total	5.14	1.10	24.04	3.73	66.00	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District -2001

Shirala tehsil observed that, 21.60 percent, 0.76 percent, 12.32 percent, 9.56 percent and 55.76 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 2.60 percent in primary sector, 0.43 percent in secondary sector, 0.32 percent in tertiary sector, 1.59 percent in marginal workers and 0.52 percent in non-workers.

2001 census table no. 7.3(III) indicates that, the district total urban occupational percentage of the tehsils. Walwa tehsil high percent in primary sector was 39.88 percent. Miraj tehsil highest percentage in secondary sector, tertiary sector, marginal workers and non-workers, it was 71.49 percent, 77.85 percent, 62.98 percent and 75.00 percent respectively.

iv)Census 2011:

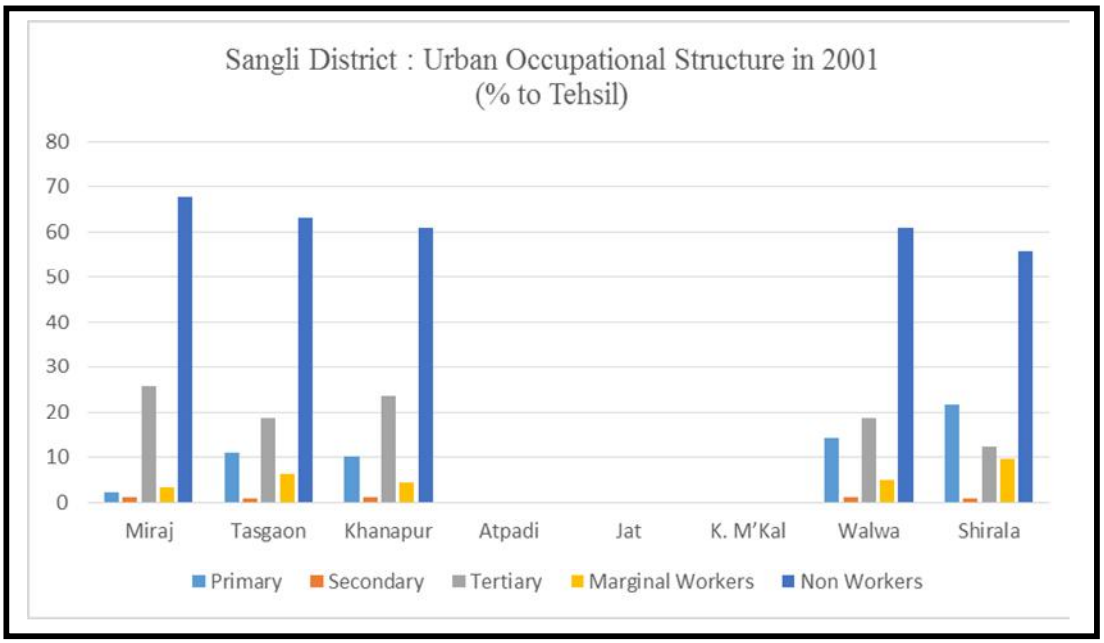
It indicates that, Miraj tehsil 2.67 percent in primary, 1.36 percent in secondary, 26.42 percent in tertiary, 2.75 percent in marginal workers and

66.79 percent in non-workers. And Miraj tehsil urban district percent was 41.73 percent, 74.69 percent, 78.79 percent, 68.66 percent and 75.05 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Tasgaon tehsil 12.78 percent in primary, 1.57 percent in secondary, 18.34 percent in tertiary, 3.77 percent in marginal workers and 63.54 percent in non-workers. And its district percent was 13.80 percent, 5.96 percent, 3.78 percent, 6.50 percent and 4.94 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Khanapur tehsil total urban working population was observed, 7.96 percent in primary, 1.14 percent in secondary, 24.30 percent in tertiary, 3.09 percent in marginal workers and 65.51 percent in non-workers and its district percentage was 10.95 percent in primary, 5.49 percent in secondary, 6.38 percent in tertiary, 6.77 percent in marginal workers and 6.28 percent in non-workers.

Walwa tehsil observed that, 11.27 percent, 1.33 percent, 19.45 percent, 3.80 percent and 64.15 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 33.52 percent in primary sector, 13.86 percent in secondary sector, 11.05 percent in tertiary sector, 18.07 percent in marginal workers and 13.73 percent in non-workers.


Sangli District : Urban Occupational Structure in 2001
(% to Tehsil)
80
70
60
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Miraj
Tasgaon
Khanapur
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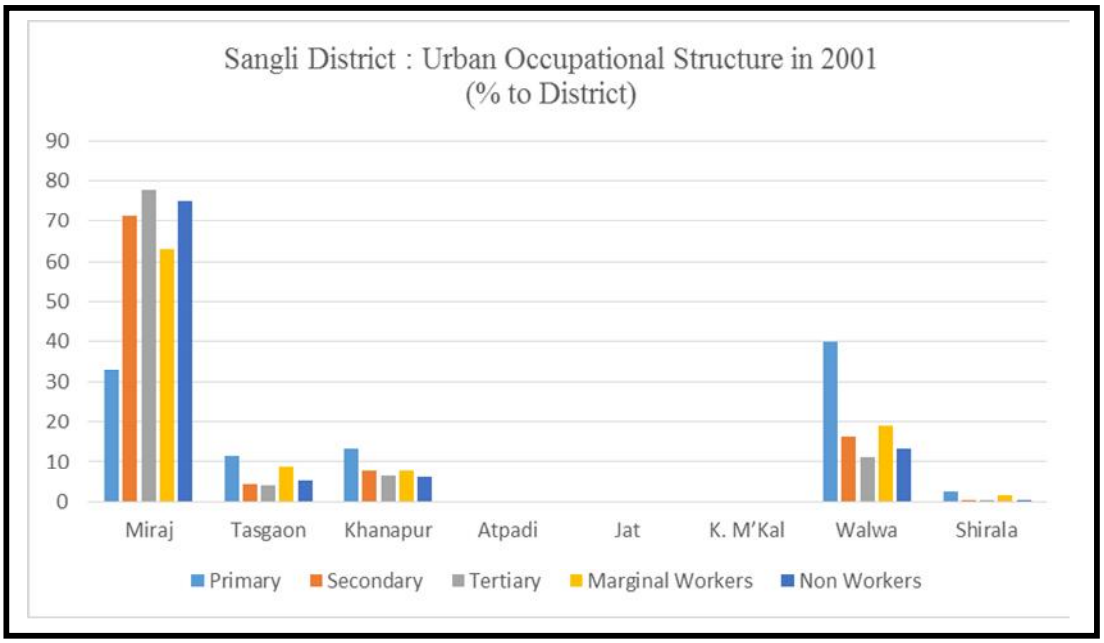
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers


Sangli District : Urban Occupational Structure in 2001
(% to District)
90
80
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Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.3 (III)

Table 7.3 (IV)

Sangli District : Urban Occupational Structure 2011

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	2.67	1.36	26.42	2.75	66.79	41.73	74.69	78.79	68.66	75.05
Tasgaon	12.78	1.57	18.34	3.77	63.54	13.80	5.96	3.78	6.50	4.94
Khanapur	7.96	1.14	24.30	3.09	63.51	10.95	5.49	6.38	6.77	6.28
Atpadi	-	-	-	-	-	-	-	-	-	-
Jat	-	-	-	-	-	-	-	-	-	-
K. M'Kal	-	-	-	-	-	-	-	-	-	-
Walwa	11.27	1.33	19.45	3.80	64.15	33.52	13.86	11.05	18.07	13.73
Shirala	-	-	-	-	-	-	-	-	-	-
District total	4.75	1.35	24.88	2.97	66.04	100.00	100.00	100.00	100.00	100.00

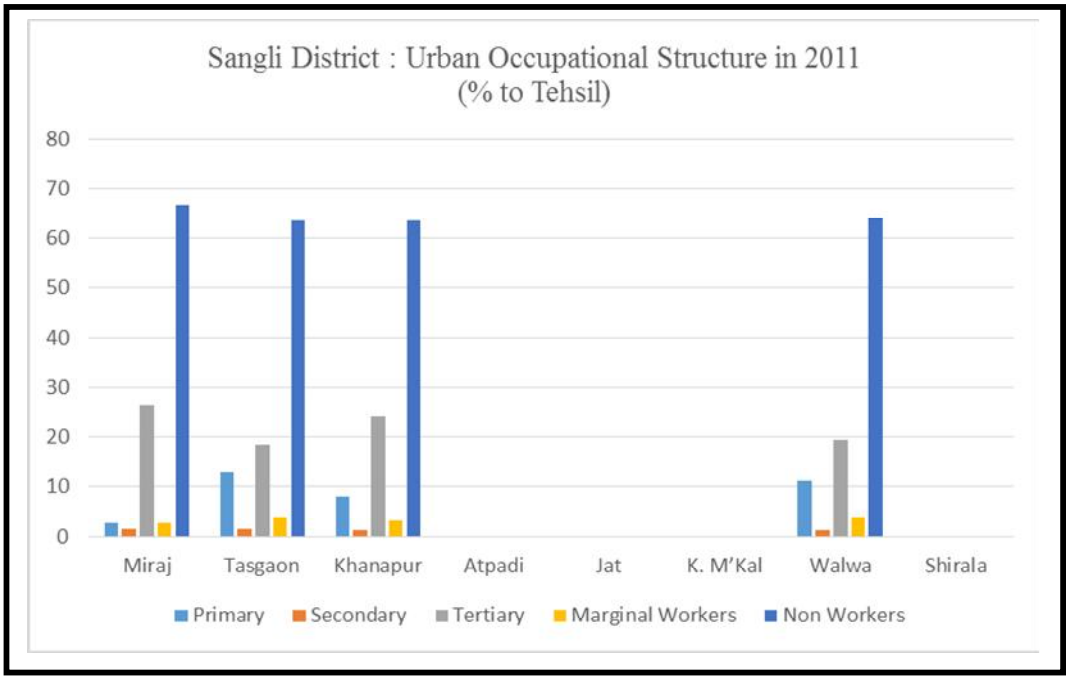
*Source: Census of India, District Census Handbook of Sangli District-2011

During 2011 census table no. 7.3(IV) indicated that, the district total urban occupational percentage of the tehsils. Miraj tehsil highest percentage in primary sector, secondary sector, tertiary sector, marginal workers and non-workers, it was 41.73 percent, 74.69 percent, 78.79 percent, 68.66 percent and 75.05 percent respectively.

7.5 SANGLI DISTRICT MALE OCCUPATIONAL STRUCTURE 1991-2011:

i) Census 1981:

The table no. 7.4(I) found that, Miraj tehsil male working population engaged in primary, secondary, tertiary, marginal workers and non-workers, it was 21.83 percent, 1.26 percent, 27.68 percent, 0.74 percent and 48.49 percent respectively during 1981 census in Miraj tehsil. In this


Sangli District : Urban Occupational Structure in 2011
(% to Tehsil)
80
70
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Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
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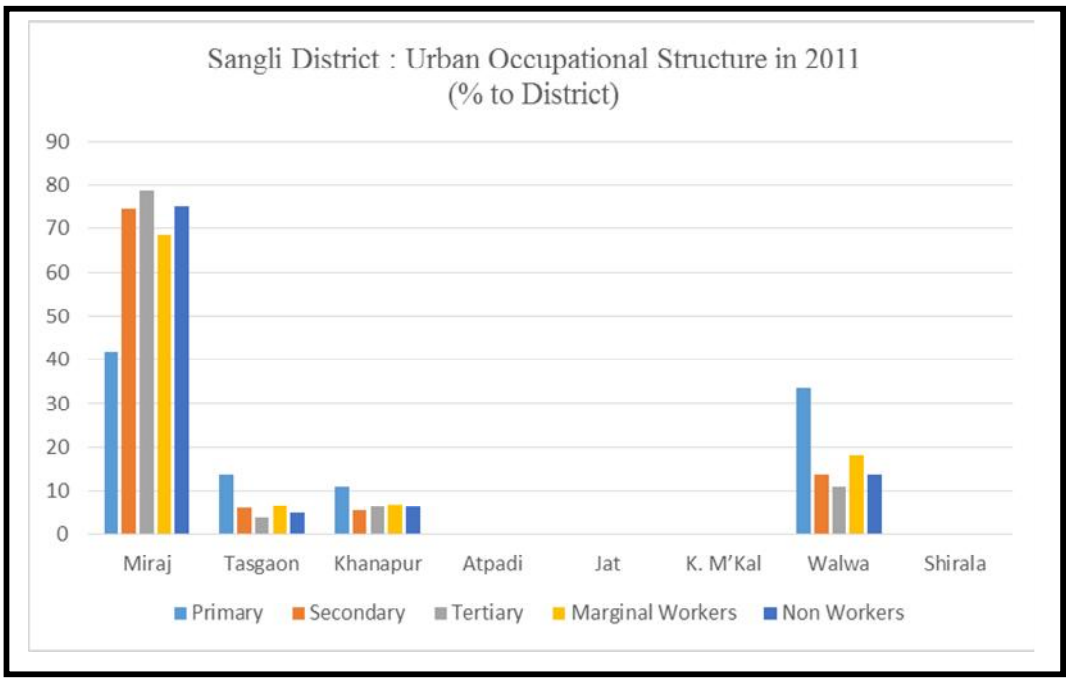
Marginal Workers
Non Workers


Sangli District : Urban Occupational Structure in 2011
(% to District)
90
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Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.3 (IV)

census year Miraj tehsil district percentage was 18.20 percent, 26.67 percent, 47.38 percent, 18.49 percent and 29.17 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Tasgaon tehsil percentage of male working population was primary workers 37.17 percent, secondary workers 1.03 percent, tertiary 14.17 percent, marginal workers 1.44 percent and non-workers 45.65 percent. And its District percentage was 18.32 percent, 12.80 percent, 14.15 percent, 20.85 percent and 16.01 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Table no. 7.4(I) reveals that, Khanapur tehsil male working population engaged in primary, secondary, tertiary, marginal workers and non-workers was 37.78 percent, 1.08 percent, 11.17 percent, 1.56 percent and 48.40 percent respectively. And the district percentage was 16.04 percent in primary, 9.31 percent in secondary, 8.10 percent in tertiary, 14.52 percent in marginal workers and 8.08 percent in non-workers.

Atpadi tehsil percentage in district observed that, 37.31 percent, 2.13 percent, 10.05 percent, 0.93 percent and 49.57 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 4.95 percent in primary sector, 7.21 percent in secondary sector, 2.74 percent in tertiary sector, 3.69 percent in marginal workers and 4.75 percent in non-workers.

Table no. 7.4(I) observed that, working population engaged in primary, secondary, tertiary, marginal workers and non-workers was 43.00

percent, 1.48 percent, 9.82 percent, 0.93 percent and 44.77 percent respectively during 1981 census in Jat tehsil. District percentage of Jat tehsil was 13.39 percent, 11.78 percent, 6.28 percent, 8.61 percent and 10.06 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Table 7.4 (I)
Sangli District Male Occupational Structure 1981

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	21.83	1.26	27.68	0.74	48.49	18.20	26.67	47.38	18.49	29.17
Tasgaon	37.70	1.03	14.17	1.44	45.65	18.32	12.80	14.15	20.85	16.01
Khanapur	37.78	1.08	11.17	1.56	48.40	12.73	9.26	7.73	15.70	11.77
Atpadi	37.31	2.13	10.05	0.93	49.57	4.95	7.21	2.74	3.69	4.75
Jat	43.00	1.48	9.82	0.93	44.77	13.39	11.78	6.28	8.61	10.06
K. M'Kal	39.55	1.36	9.97	2.02	47.11	6.13	5.38	3.17	9.30	5.27
Walwa	39.03	1.43	13.35	0.81	45.38	19.12	17.85	13.43	11.83	16.05
Shirala	35.76	1.78	12.47	1.93	48.06	7.15	9.05	5.12	11.53	6.94
District total	33.95	1.33	16.53	1.14	47.05	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District -1981

Kavate-Mahakal tehsil percentage of male working population engaged in primary, secondary, tertiary, marginal workers and non-workers was 35.55 percent, 1.36 percent, 9.97 percent, 2.02 percent and 47.11 percent respectively during 1981 census. In this census year tehsil district percentage was 6.13 percent, 5.8 percent, 3.17 percent, 9.30 percent and 5.27 percent in primary, secondary, tertiary, marginal worker and non-workers respectively.

Percentage of male working population of Walwa Tehsil was primary sector 39.03 percent, secondary 1.43 percent, tertiary 13.35 percent, marginal workers 0.81 percent and non-workers 45.38 percent. And its district percentage was 19.12 percent, 17.85 percent, 13.43 percent, 11.83 percent and 16.05 percent in primary, secondary, tertiary, marginal and non-workers respectively during 1981.

Shirala tehsil male workers participation reveals that, 35.76 percent, 1.78 percent, 12.74 percent, 1.93 percent and 48.06 percent in primary, secondary, tertiary, marginal and non-workers respectively. And the district percentage of the tehsil was 7.15 percent in primary, 9.05 percent in secondary, 5.12 percent in tertiary, 11.53 percent in marginal workers and 6.94 percent in non-workers during 1981 census.

Table no. 7.4(I) observed that, in the primary sector Walwa tehsil working population was 19.12 percent in district. Miraj tehsil secondary sector, tertiary sector and non-workers working population was 36.67 percent, 47.38 percent and 29.17 percent respectively, it was high in the district. Tasgaon tehsil Marginal working population was 20.85 percent in the district and it was high in the district.

ii) Census 1991:

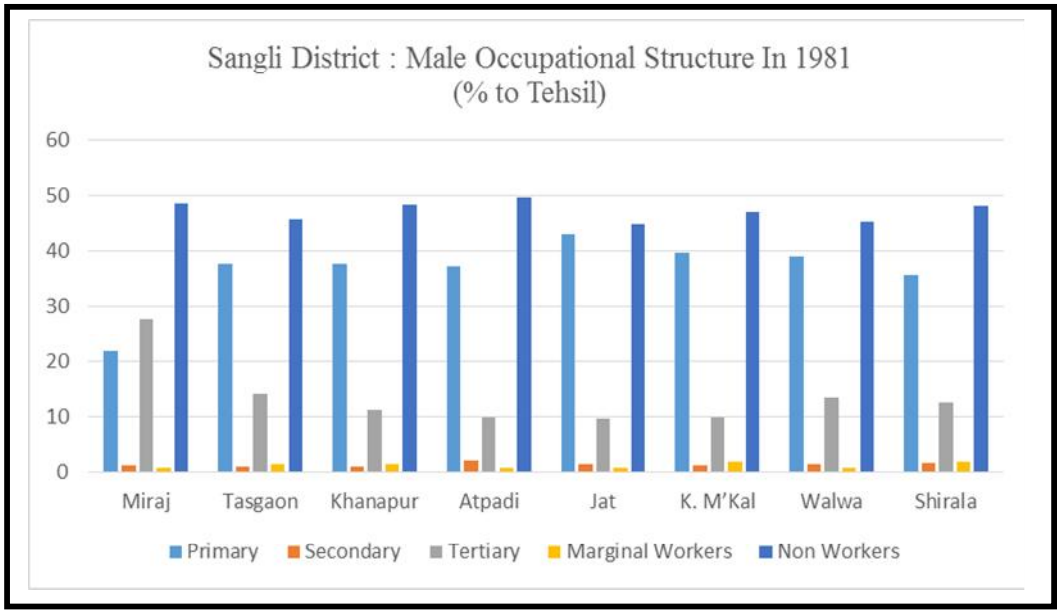
Census 1991 found that, Miraj tehsil male working population engaged in primary, secondary, tertiary, marginal workers and non-workers, it was 33.75 percent, 9.28 percent, 11.12 percent, 0.70 percent

and 45.15 percent respectively during 1991 census in Miraj tehsil. In this census year Miraj tehsil district percentage was 16.03 percent, 30.79 percent, 23.85 percent, 16.85 percent and 18.23 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Tasgaon tehsil percentage of male working population was primary workers 40.59 percent, secondary workers 5.59 percent, tertiary 8.54 percent, marginal workers 0.55 percent and non-workers 44.72 percent. And its District percentage was 18.38 percent, 17.70 percent, 17.47 percent, 12.47 percent and 17.21 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Khanapur tehsil male working population engaged in primary, secondary, tertiary, marginal workers and non-workers was 39.73 percent, 4.91 percent, 7.44 percent, 0.85 percent and 47.52 percent respectively. And the district percentage was 6.43 percent in primary, 5.61 percent in secondary, 5.49 percent in tertiary, 7.00 percent in marginal workers and 6.61 percent in non-workers during 1991.

Atpadi tehsil observed that, 39.14 percent, 4.57 percent, 8.57 percent, 0.61 percent and 47.11 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 6.67 percent in primary sector, 5.44 percent in secondary sector, 6.59 percent in tertiary sector, 5.23 percent in marginal workers and 6.82 percent in non-workers.


Sangli District : Male Occupational Structure In 1981
(% to Tehsil)
60
50
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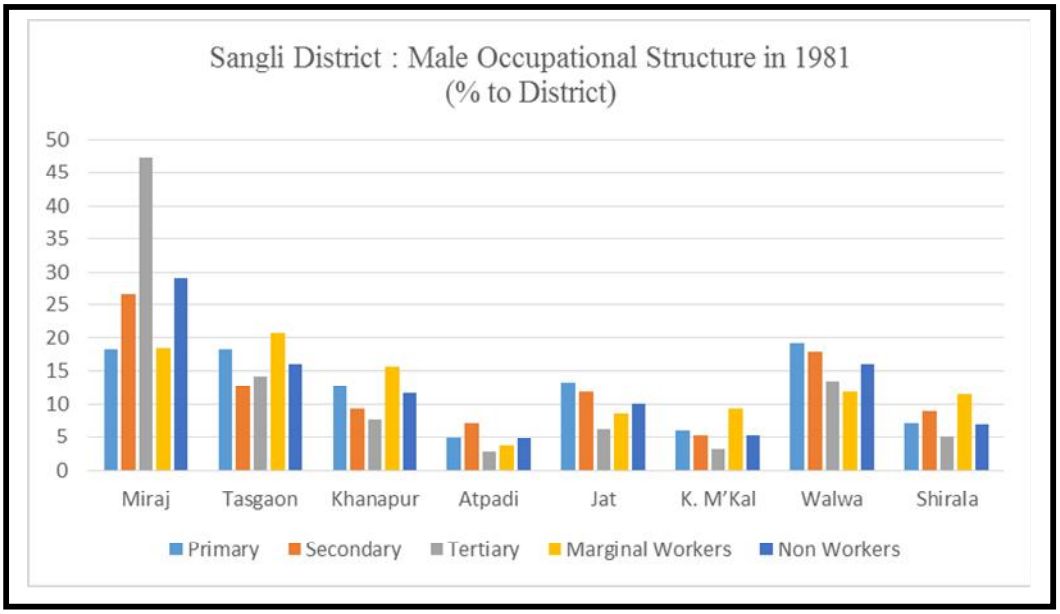
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers


Sangli District : Male Occupational Structure in 1981
(% to District)
50
45
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Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.4 (I)

Table no. 7.4 (II) observed that, working population engaged in primary, secondary, tertiary, marginal workers and non-workers was 42.96 percent, 2.85 percent, 7.28 percent, 0.82 percent and 46.08 percent respectively during 1991 census in Jat tehsil. District percentage of Jat tehsil was 15.22 percent, 7.06 percent, 11.65 percent, 14.74 percent and 13.88 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Kavate-Mahakal tehsil percentage of male working population engaged in primary, secondary, tertiary, marginal workers and non-workers was 39.14 percent, 4.57 percent, 8.57 percent, 0.61 percent and 47.11 percent respectively during 1991 census. In this census year tehsil district percentage was 6.67 percent, 5.44 percent, 6.59 percent, 5.23 percent and 6.82 percent in primary, secondary, tertiary, marginal worker and non-workers respectively.

Percentage of male working population of Walwa tehsil was primary sector 41.46 percent, secondary 5.13 percent, tertiary 8.42 percent, marginal workers 0.68 percent and non-workers 44.31 percent. And its district percentage was 17.82 percent, 15.40 percent, 16.34 percent, 14.71 percent and 16.18 percent in primary, secondary, tertiary, marginal and non-workers respectively.

Shirala tehsil male workers participation reveals that, 34.68 percent, 5.94 percent, 9.11 percent, 1.16 percent and 49.10 percent in primary, secondary, tertiary, marginal and non-workers respectively. And the district percentage of

the tehsil was 7.13 percent in primary, 8.53 percent in secondary, 8.46 percent in tertiary, 12.05 percent in marginal workers and 8.58 percent in non-workers during 1991.

Table 7.4 (II)

Sangli District Male Occupational Structure 1991

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	33.75	9.28	11.12	0.70	45.15	16.03	30.79	23.85	16.85	18.23
Tasgaon	40.59	5.59	8.54	0.55	44.72	18.38	17.70	17.47	12.47	17.21
Khanapur	39.73	4.38	7.27	1.08	47.54	12.30	9.47	10.15	16.94	12.51
Atpadi	39.29	4.91	7.44	0.85	47.52	6.43	5.61	5.49	7.00	6.61
Jat	42.96	2.85	7.28	0.82	46.08	15.22	7.06	11.65	14.74	13.88
K. M'Kal	39.14	4.57	8.57	0.61	47.11	6.67	5.44	6.59	5.23	6.82
Walwa	41.46	5.13	8.42	0.68	44.31	17.82	15.40	16.34	14.71	16.18
Shirala	34.68	5.94	9.11	1.16	49.10	7.13	8.53	8.46	12.05	8.58
District total	39.04	5.59	8.65	0.77	45.95	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District -1991

Table no. 7.4 (II) observed that, in the primary sector Tasgaon tehsil working population was 18.38 percent high in district. Miraj tehsil secondary sector, tertiary sector and non-workers working population was 30.79 percent, 23.85 percent and 18.23 percent respectively, it was high in the district. Khanapur tehsil Marginal working population was 16.94 percent and it was high in the district.

iii) Census 2001:

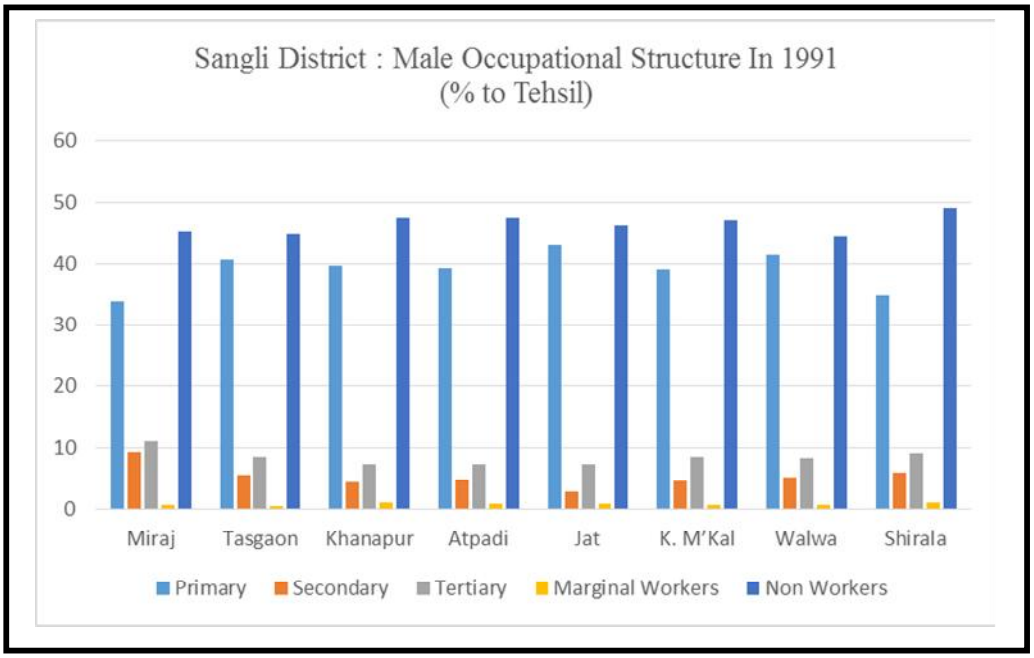
Following table shows that, Miraj tehsil male working population engaged in primary, secondary, tertiary, marginal workers and non-

workers, it was 16.02 percent, 1.33 percent, 31.91 percent, 3.91 percent and 46.83 percent respectively during 2001. In this census year Miraj tehsil district percentage was 15.94 percent, 30.42 percent, 48.43 percent, 20.05 percent and 31.44 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Tasgaon tehsil percentage of male working population was primary workers 37.41 percent, secondary workers 1.07 percent, tertiary 14.51 percent, marginal workers 6.48 percent and non-workers 40.53 percent. And its District percentage was 21.08 percent, 13.82 percent, 12.47 percent, 18.81 percent and 15.41 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Khanapur tehsil male working population engaged in primary, secondary, tertiary, marginal workers and non-workers was 35.79 percent, 1.12 percent, 16.60 percent, 9.99 percent and 36.50 percent respectively. And the district percentage was 11.81 percent in primary, 8.50 percent in secondary, 8.36 percent in tertiary, 17.06 percent in marginal workers and 8.13 percent in non-workers during 2001.

Atpadi tehsil observed that, 32.46 percent, 1.32 percent, 13.22 percent, 7.34 percent and 45.66 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 5.23 percent in primary sector, 4.88 percent in secondary sector, 3.25 percent in tertiary sector, 6.10 percent in marginal workers and 4.97 percent in non-workers.


Sangli District : Male Occupational Structure In 1991
(% to Tehsil)
60
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Miraj
Tasgaon
Khanapur
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K. M'Kal
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Shirala
Primary
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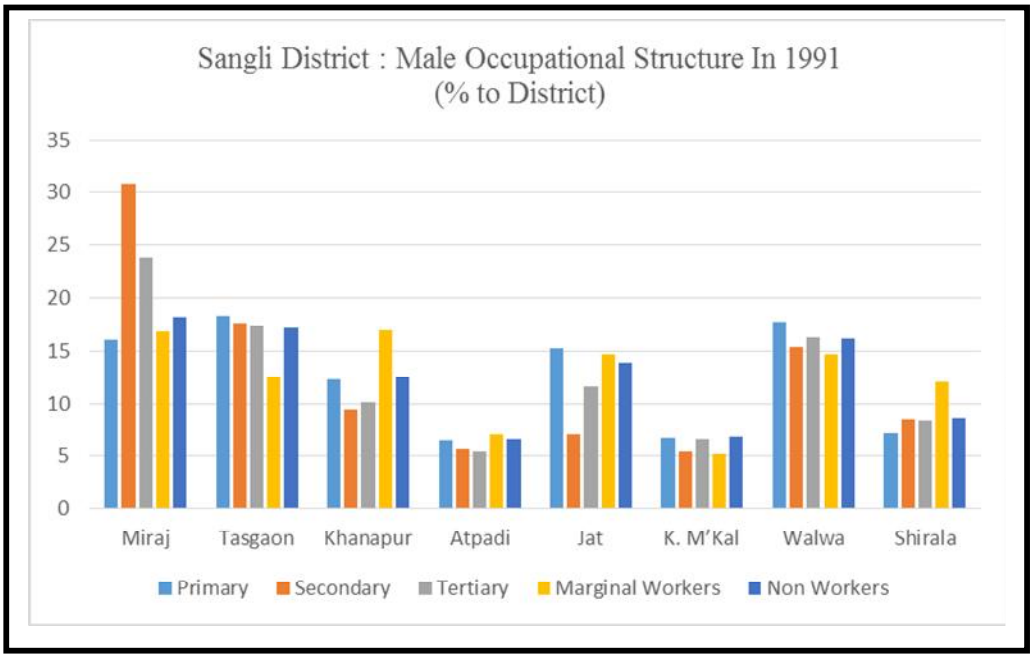
Marginal Workers
Non Workers


Sangli District : Male Occupational Structure In 1991
(% to District)
35
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Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.4 (II)

Table 7.34 (III)

Sangli District Male Occupational Structure 2001

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	16.02	1.33	31.91	3.91	46.83	15.94	30.42	48.43	20.05	31.44
Tasgaon	37.41	1.07	14.51	6.48	40.53	21.08	13.82	12.47	18.81	15.41
Khanapur	35.79	1.12	16.60	9.99	36.50	11.81	8.50	8.36	17.00	8.13
Atpadi	32.46	1.32	13.22	7.34	45.66	5.23	4.88	3.25	6.10	4.97
Jat	37.79	1.18	9.92	6.44	44.66	14.09	10.14	5.64	12.38	11.23
K. M'Kal	37.14	1.19	12.52	5.87	43.29	7.00	5.14	3.60	5.70	5.50
Walwa	32.89	1.46	16.54	4.33	44.78	18.55	18.88	14.23	12.60	17.04
Shirala	31.49	1.78	13.12	7.12	46.49	6.31	8.22	4.01	7.35	6.28
District total	29.63	1.29	19.42	5.75	43.91	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District -2001

Table no. 7.4(III) observes that, working population involved in primary, secondary, tertiary, marginal workers and non-workers was 37.79 percent, 1.18 percent, 9.92 percent, 6.44 percent and 44.66 percent respectively during 2001 census in Jat tehsil. District percentage of Jat tehsil was 14.09 percent, 10.14 percent, 5.64 percent, 12.38 percent and 11.23 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Kavate-Mahakal tehsil percentage of male working population involved in primary, secondary, tertiary, marginal workers and non-workers was 37.14 percent, 1.19 percent, 12.52 percent, 5.87 percent and 43.29 percent respectively during 2001 census. In this census year tehsil district percentage was 7.00 percent, 5.14 percent, 3.60 percent, 5.70 percent and 5.50 percent in primary, secondary, tertiary, marginal worker and non-workers respectively.

Percentage of male working population of Walwa tehsil was primary sector 32.29 percent, secondary 1.46 percent, tertiary 16.54 percent, marginal workers 4.33 percent and non-workers 44.78 percent. And its district percentage was 18.55 percent, 18.88 percent, 14.23 percent, 12.60 percent and 17.04 percent in primary, secondary, tertiary, marginal and non-workers respectively.

Shirala tehsil male workers participation was, 31.49 percent, 1.78 percent, 13.12 percent, 7.12 percent and 46.49 percent in primary, secondary, tertiary, marginal and non-workers respectively. And the district percentage of the tehsil was 6.31 percent in primary, 8.22 percent in secondary, 4.01 percent in tertiary, 7.35 percent in marginal workers and 6.28 percent in non-workers during 2001.

Table no. 7.4(III) observed that, in the primary sector Tasgaon tehsil working population was 21.08 percent high in district. Miraj tehsil secondary sector, tertiary sector, marginal and non-workers working population was 30.42 percent, 48.43 percent, 20.05 percent and 31.44 percent respectively, it was high in the district.

iv) Census 2011:

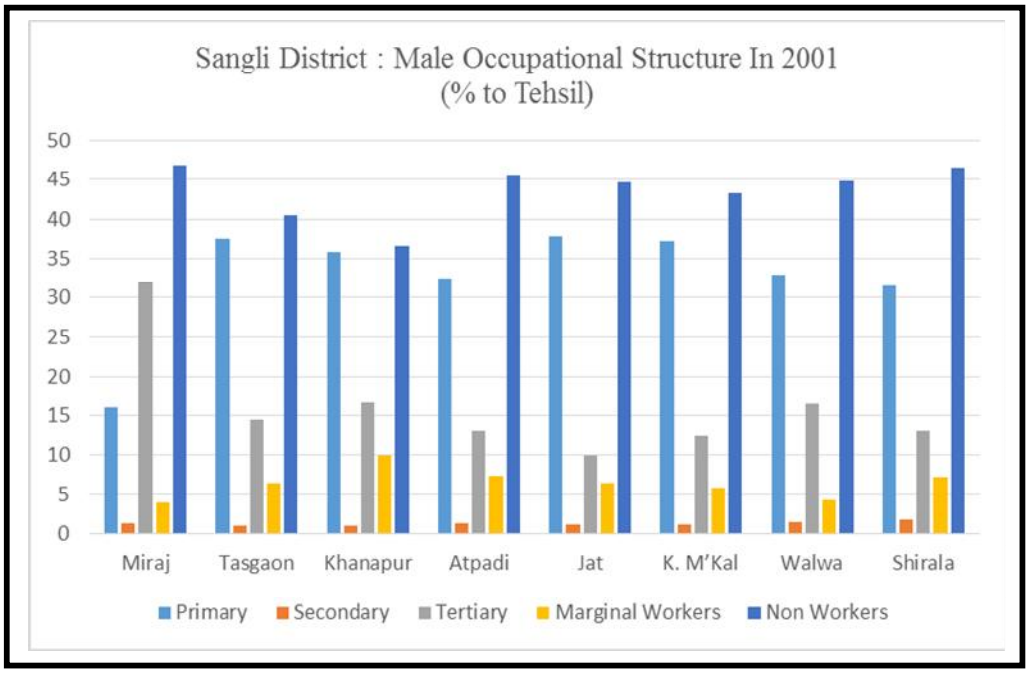
Table no 7.4(IV)shows that, Miraj tehsil male working population involved in primary, secondary, tertiary, marginal workers and non-workers, it was 17.05 percent, 1.51 percent, 32.97 percent, 3.18 percent and 45.28 percent respectively during 2011. In this census year Miraj tehsil district percentage was 17.10 percent, 36.56 percent, 52.80 percent, 28.93 percent and 32.80 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Tasgaon tehsil percentage of male working population was primary workers 37.55 percent, secondary workers 1.04 percent, tertiary 14.41 percent, marginal workers 3.37 percent and non-workers 43.63 percent. And its District percentage was 18.49 percent, 12.36 percent, 11.33 percent, 15.07 percent and 15.52 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Khanapur tehsil male working population engaged in primary, secondary, tertiary, marginal workers and non-workers was 42.07 percent, 0.68 percent, 12.32 percent, 3.67 percent and 41.26 percent respectively. And the district percentage was 6.97 percent in primary, 2.70 percent in secondary, 3.26 percent in tertiary, 5.51 percent in marginal workers and 4.94 percent in non-workers during 2011.

Atpadi tehsil observed that, 36.73 percent, 0.94 percent, 12.67 percent, 3.98 percent and 45.68 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 5.88 percent in primary sector, 3.64 percent in secondary sector, 3.24 percent in tertiary sector, 5.79 percent in marginal workers and 5.28 percent in non-workers.

Male working population involved in primary, secondary, tertiary, marginal workers and non-workers was 39.40 percent, 0.94 percent, 10.20 percent, 3.94 percent and 45.51 percent respectively during 2011 census in Jat tehsil. District percentage of Jat tehsil was 15.30 percent, 8.80 percent, 6.32 percent, 13.89 percent and 12.76 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.


Sangli District : Male Occupational Structure In 2001
(% to Tehsil)
50
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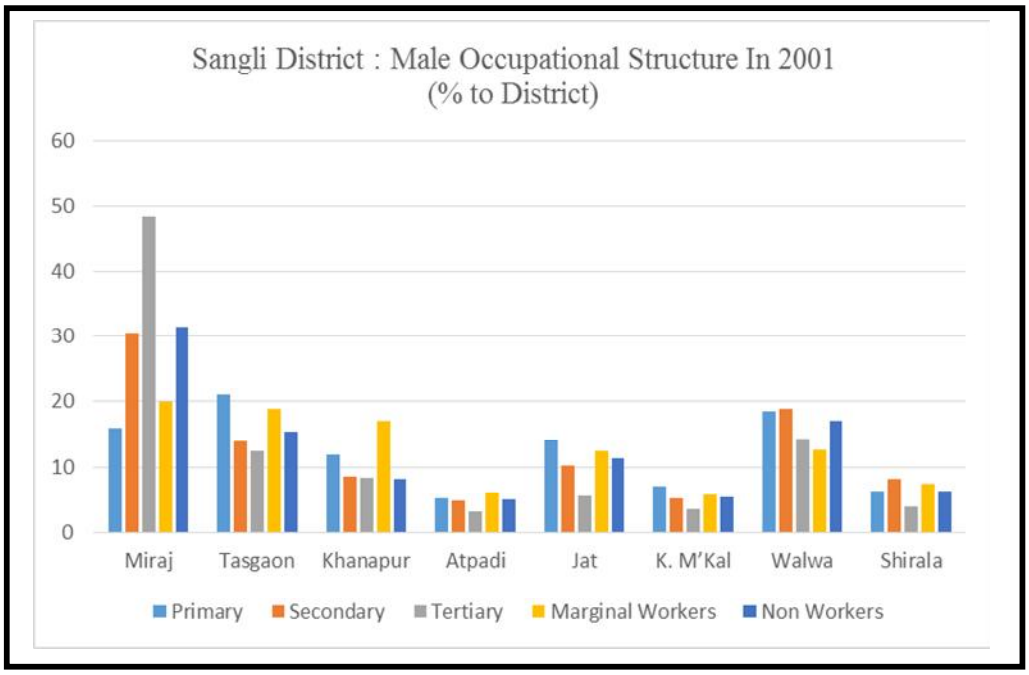
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers


Sangli District : Male Occupational Structure In 2001
(% to District)
60
50
40
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0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.4 (III)

Table 7.4 (IV)

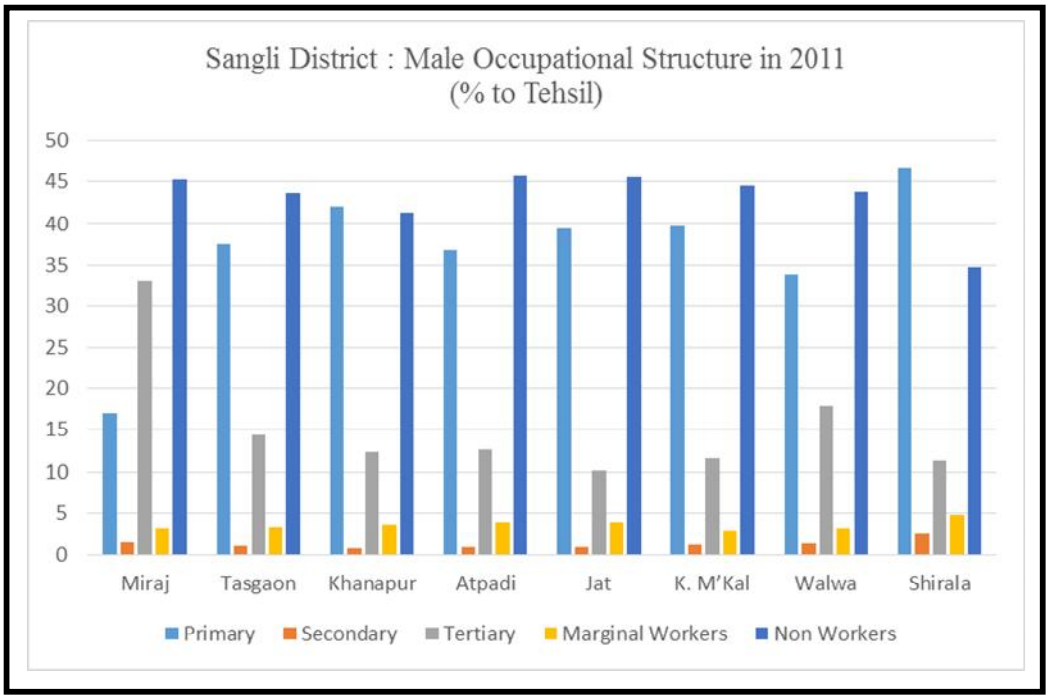
Sangli District Male Occupational Structure 2011

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	17.05	1.51	32.97	3.18	45.28	17.10	36.56	52.80	28.93	32.80
Tasgaon	37.55	1.04	14.41	3.37	43.63	18.49	12.36	11.33	15.07	15.52
Khanapur	42.07	0.68	12.32	3.67	41.26	6.97	2.70	3.26	5.51	4.94
Atpadi	36.73	0.94	12.67	3.98	45.68	5.88	3.64	3.24	5.79	5.28
Jat	39.40	0.94	10.20	3.94	45.51	15.30	8.80	6.32	13.89	12.76
K. M'Kal	39.73	1.13	11.60	2.96	44.57	7.12	4.90	3.32	4.82	5.76
Walwa	33.82	1.29	17.95	3.23	43.71	18.35	16.83	15.56	15.91	17.13
Shirala	46.66	2.55	11.30	4.80	34.69	10.79	14.22	4.17	10.08	5.80
District total	31.62	1.31	19.80	3.48	43.78	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District -2011

Kavate-Mahakal tehsil percentage of male working population involved in primary, secondary, tertiary, marginal workers and non-workers was 39.73 percent, 1.13 percent, 11.60 percent, 2.96 percent and 44.57 percent respectively during 2011 census. In this census year tehsil district percentage was 7.12 percent, 4.90 percent, 3.32 percent, 4.82 percent and 5.76 percent in primary, secondary, tertiary, marginal worker and non-workers respectively.

Percentage of male working population of Walwa tehsil was primary sector 33.82 percent, secondary 1.29 percent, tertiary 17.95 percent, marginal workers 3.23 percent and non-workers 43.71 percent. And its district percentage was 18.35 percent, 16.83 percent, 15.56 percent, 15.91 percent and 17.13 percent in primary, secondary, tertiary, marginal and non-workers respectively.


Sangli District : Male Occupational Structure in 2011
(% to Tehsil)
50
45
40
35
30
25
20
15
10
5
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

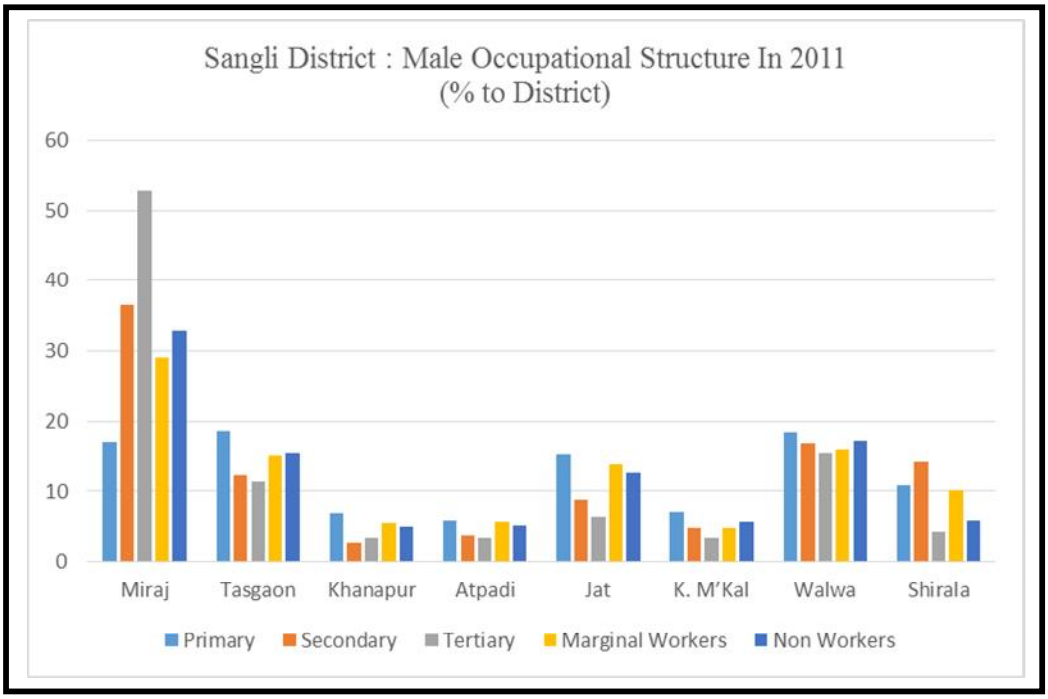

Sangli District : Male Occupational Structure In 2011
(% to District)
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.4 (IV)

Shirala tehsil male workers participation reveals that, 46.65 percent, 2.55 percent, 11.30 percent, 4.80 percent and 34.69 percent in primary, secondary, tertiary, marginal and non-workers respectively. And the district percentage of the tehsil was 10.79 percent in primary, 14.22 percent in secondary, 4.17 percent in tertiary, 10.08 percent in marginal workers and 5.80 percent in non-workers during 2011.

Table no. 7.4(IV) observed that, in the primary sector Tasgaon tehsil working population was 18.49 percent high in district. Miraj tehsil secondary sector, tertiary sector, marginal and non-workers working population was 36.56 percent, 52.80 percent, 28.93 percent and 32.80 percent respectively, it was high in the district.

7.6 SANGLI DISTRICT FEMALE OCCUPATIONAL STRUCTURE 1991-2011:

i) Census 1981:

Following table no 7.5(I) shows that, Miraj tehsil female working population involved in primary, secondary, tertiary, marginal workers and non-workers, it was 7.67 percent, 0.53 percent, 3.28 percent, 2.83 percent and 85.70 percent respectively. In this census year Miraj tehsil district percentage was 15.13 percent, 32.39 percent, 50.83 percent, 9.03 percent and 19.43 percent in primary, secondary, tertiary, marginal workers and non-workers respectively during 1981.

Tasgaon tehsil percentage of female working population was primary workers 14.46 percent, secondary workers 0.37 percent, tertiary

1.27 percent, marginal workers 9.29 percent and non-workers 74.61 percent. And its District percentage was 17.26 percent, 13.82 percent, 11.93 percent, 17.93 percent and 10.24 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Khanapur tehsil female working population engaged in primary, secondary, tertiary, marginal workers and non-workers was 24.95 percent, 0.34 percent, 1.23 percent, 9.82 percent and 63.68 percent respectively. And the district percentage was 22.58 percent in primary, 9.45 percent in secondary, 8.72 percent in tertiary, 14.38 percent in marginal workers and 6.63 percent in non-workers during 1981.

Atpadi tehsil observed that, 13.36 percent, 0.42 percent, 1.08 percent, 12.34 percent and 72.80 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 4.56 percent in primary sector, 4.42 percent in secondary sector, 2.91 percent in tertiary sector, 6.82 percent in marginal workers and 2.86 percent in non-workers.

Female working population involved in primary, secondary, tertiary, marginal workers and non-workers was 16.82 percent, 0.42 percent, 1.28 percent, 10.65 percent and 70.84 percent respectively during 1981 decade in Jat tehsil. District percentage of Jat tehsil was 12.94 percent, 9.95 percent, 7.75 percent, 13.25 percent and 6.26 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Table 7.5 (I)

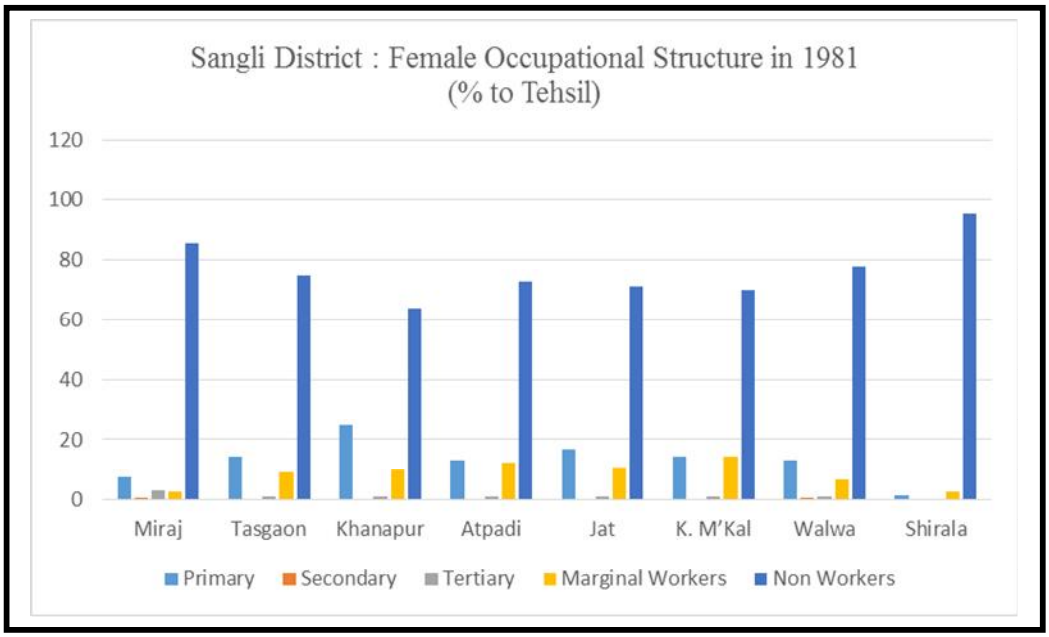
Sangli District Female Occupational Structure 1981

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	7.67	0.53	3.28	2.83	85.70	15.13	32.39	50.83	9.03	19.43
Tasgaon	14.46	0.37	1.27	9.29	74.61	17.26	13.82	11.93	17.93	10.24
Khanapur	24.95	0.34	1.23	9.82	63.68	22.58	9.45	8.72	14.38	6.63
Atpadi	13.36	0.42	1.08	12.34	72.80	4.56	4.42	2.91	6.82	2.86
Jat	16.82	0.42	1.28	10.65	70.84	12.94	9.95	7.75	13.25	6.26
K. M'Kal	14.21	0.38	1.03	14.45	69.93	5.58	4.65	3.17	9.17	3.15
Walwa	13.23	0.58	1.28	6.91	78.00	15.74	21.45	11.94	13.29	10.66
Shirala	1.67	0.03	0.09	2.69	95.51	6.22	3.87	2.75	16.13	40.76
District total	9.55	0.31	1.21	5.90	83.03	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District -1981

Kavate-Mahakal tehsil percentage of female working population involved in primary, secondary, tertiary, marginal workers and non-workers was 14.21 percent, 0.38 percent, 1.03 percent, 14.45 percent and 69.93 percent respectively during 1981 census. In this census year tehsil district percentage was 5.58 percent, 4.65 percent, 3.17 percent, 9.17 percent and 3.15 percent in primary, secondary, tertiary, marginal worker and non-workers respectively.

Percentage of female working population of Walwa tehsil was primary sector 13.23 percent, secondary 0.58 percent, tertiary 1.28 percent, marginal workers 6.91 percent and non-workers 78.00 percent. And its district percentage was 15.74 percent, 21.45 percent, 11.94 percent, 13.29 percent and 10.66 percent in primary, secondary, tertiary, marginal and non-workers respectively.


Sangli District : Female Occupational Structure in 1981
(% to Tehsil)
120
100
80
60
40
20
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

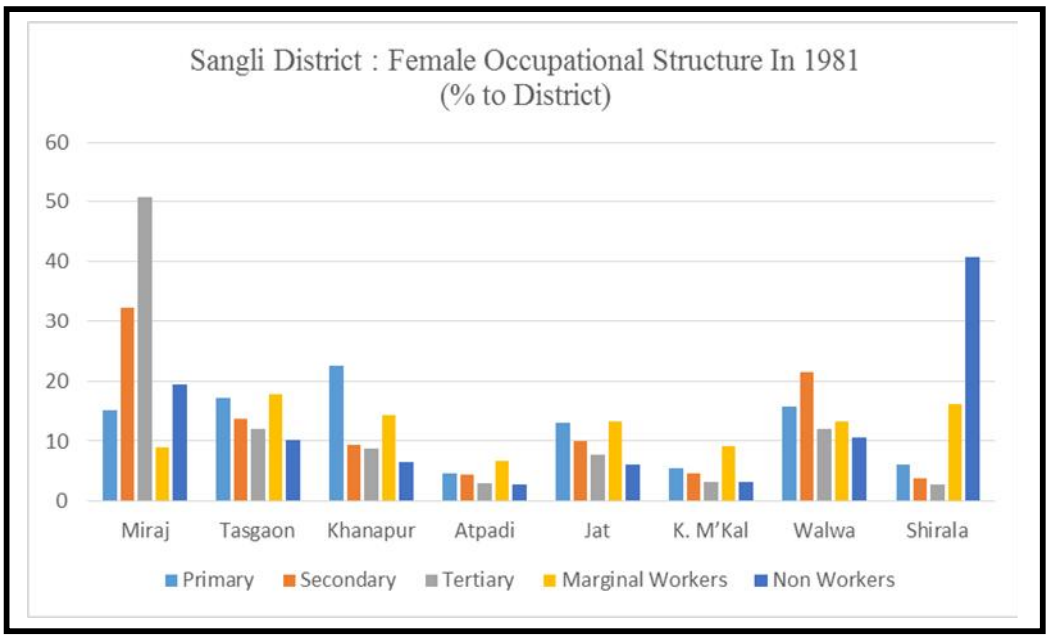

Sangli District : Female Occupational Structure In 1981
(% to District)
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.5 (I)

Shirala tehsil female workers participation reveals that, 1.67 percent, 0.03 percent, 0.09 percent, 2.69 percent and 95.51 percent in primary, secondary, tertiary, marginal and non-workers respectively. And the district percentage of the tehsil was 6.22 percent in primary, 3.87 percent in secondary, 2.75 percent in tertiary, 16.13 percent in marginal workers and 40.76 percent in non-workers during 1981.

Table no. 7.5(I) observed that, in the primary sector Khanapur tehsil working population was 22.58 percent high in district. As well as Miraj tehsil secondary sector 32.39 percent and tertiary sector 50.83 percent, Tasgaon tehsil marginal workers 17.93 percent and Shirala tehsil non-workers 40.76 percent, it was high in the district.

ii) Census 1991:

During 1991 census the female working population accounts for 16.32 percent in primary, 1.36 percent in secondary, 1.71 percent in tertiary activity, 9.88 percent in marginal workers and 70.74 percent in non-workers of Miraj tehsil. And its percentage of district was 13.64 percent in primary, 37.58 percent in secondary, 25.46 percent in tertiary, 10.50 percent in marginal workers and 20.83 percent in non-workers.

The Table no. 7.5(II) shows that female working population engaged 21.33 percent in primary activity, 0.40 percent in secondary activity, 1.20 percent in tertiary activity, 15.85 percent in marginal workers and 61.23 percent in non-workers during 1991 in Tasgaon tehsil. Its district percentage

was 17.63 percent in primary activity, 11.00 percent in secondary activity, 17.65 percent in tertiary activity, 16.60 percent in marginal workers and 17.83 percent in non-workers.

According to 1991 census the female working population was 30.00 percent, 0.55 percent, 1.21 percent, 16.42 percent and 51.82 percent in primary, secondary, tertiary, marginal workers and non-workers respectively in Khanapur tehsil. And its district percentage was 18.50 percent, 11.34 percent, 13.30 percent, 12.88 percent and 11.26 percent in primary, secondary, tertiary, marginal and non-workers respectively.

Table no. 7.5(II) shows that female working population involved 19.70 percent in primary activity, 0.39 percent in secondary activity, 0.72 percent in tertiary, 19.57 percent in marginal workers and 59.62 percent in non-workers during 1991 census in Atpadi tehsil. Its District percentage was 5.84 percent in primary activity, 3.81 percent in secondary activity, 3.80 percent in tertiary, 7.37 percent in marginal workers and 6.62 percent in non-workers.

Jat tehsil percentage of female working population observed that, 23.35 percent, 0.59 percent, 0.93 percent, 19.16 percent and 55.97 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And the District percentage of the tehsil was 14.77 percent, 12.48 percent, 10.45 percent, 15.42 percent and 12.48 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Table 7.5 (II)

Sangli District : Female Occupational Structure 1991

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	16.32	1.36	1.71	9.88	70.74	13.64	37.58	25.46	10.50	20.83
Tasgaon	21.33	0.40	1.20	15.85	61.23	17.63	11.00	17.65	16.66	17.83
Khanapur	30.00	0.55	1.21	16.42	51.82	18.50	11.34	13.30	12.88	11.26
Atpadi	19.70	0.39	0.72	19.57	59.62	5.84	3.81	3.80	7.37	6.22
Jat	23.35	0.59	0.93	19.16	55.97	14.77	12.48	10.45	15.42	12.48
K. M'Kal	18.64	0.42	1.38	22.54	57.02	5.90	4.41	7.79	9.07	6.35
Walwa	20.29	0.48	1.14	17.19	60.90	15.73	12.31	15.71	16.94	16.63
Shirala	19.44	0.52	0.80	21.32	57.93	8.00	7.08	5.85	11.16	8.40
District total	21.23	0.64	1.19	16.69	60.25	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District -1991

The table 7.5(II) reveals that, Kavate-Mahakal tehsil female working population was 18.64 percent, 0.42 percent, 1.38 percent, 22.54 percent and 57.02 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district participation rate was 5.90 percent, 4.41 percent, 7.79 percent, 9.07 percent and 6.35 percent in primary, secondary, tertiary, marginal and non-workers respectively.

Percentage of Walwa tehsil was, 20.29 percent in primary, 0.48 percent in secondary, 1.14 in tertiary, 17.19 in marginal workers and 60.90 percent in non-workers and its district percentage was 15.73 percent, 12.31 percent, 15.71 percent, 16.94 percent and 16.63 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Shirala tehsil percentage of female working population observed that, 19.44 percent, 0.52 percent, 0.80 percent, 21.32 percent and 57.93 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And the district percentage of the tehsil was 8.00 percent, 7.08 percent, 5.85 percent, 11.16 percent and 8.40 percent in primary, secondary, tertiary, marginal and non-workers respectively.

District female working population observed that, in the primary sector Tasgaon tehsil high female working population was 17.63 percent in district. Miraj tehsil secondary sector, tertiary and non-working population was 37.58 percent, 25.46 percent, 20.83 percent respectively, it was high in the district. Walwa Marginal working population was 16.94 percent, it was high in the district.

iii) Census 2001:

Following table shows that, the female working population accounts for 6.96 percent in primary, 0.80 percent in secondary, 5.40 percent in tertiary activity, 7.68 percent in marginal workers and 79.15 percent in non-workers of Miraj tehsil. And its percentage of district was 10.94 percent in primary, 29.60 percent in secondary, 44.77 percent in tertiary, 14.80 percent in marginal workers and 37.00 percent in non-workers.

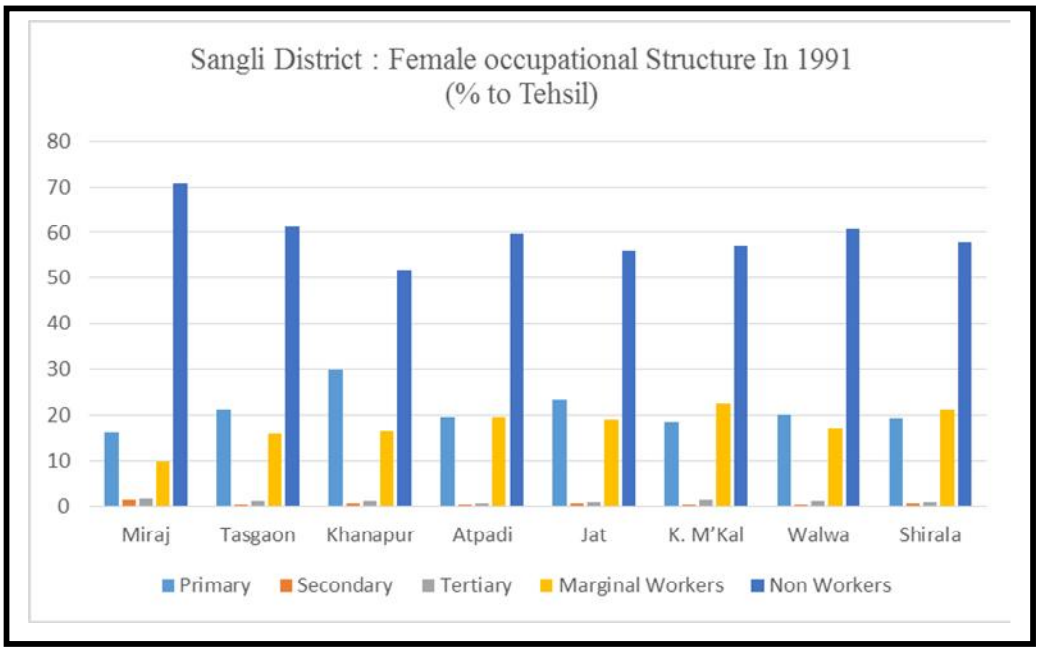
The Table no. 7.5(III) shows that female working population involved 22.58 percent in primary activity, 0.72 percent in secondary activity, 2.35 percent in tertiary activity, 20.00 percent in marginal workers and 54.35

percent in non-workers during 2001 in Tasgaon tehsil. Its district percentage was 20.24 percent in primary activity, 15.18 percent in secondary activity, 11.09 percent in tertiary activity, 21.98 percent in marginal workers and 14.49 percent in non-workers.

According to 2001 census the female working population was 30.77 percent, 0.56 percent, 3.16 percent, 20.43 percent and 45.07 percent in primary, secondary, tertiary, marginal workers and non-workers respectively in Khanapur tehsil. And its district percentage was 17.01 percent, 7.26 percent, 9.22 percent, 13.84 percent and 7.41 percent in primary, secondary, tertiary, marginal and non-workers respectively.

Table no. 7.5(III) shows that female working population involved 22.75 percent in primary activity, 0.46 percent in secondary activity, 2.00 percent in tertiary, 18.45 percent in marginal workers and 56.34 percent in non-workers during 2001 census in Atpadi tehsil. Its District percentage was 6.06 percent in primary activity, 2.84 percent in secondary activity, 2.81 percent in tertiary, 6.02 percent in marginal workers and 4.46 percent in non-workers.

Jat tehsil percentage of female working population observed that, 26.55 percent, 0.75 percent, 1.79 percent, 16.49 percent and 54.42 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And the District percentage of the tehsil was 15.70 percent, 10.47 percent, 5.57 percent, 11.96 percent and 9.58 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.


Sangli District : Female occupational Structure In 1991
(% to Tehsil)
80
70
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

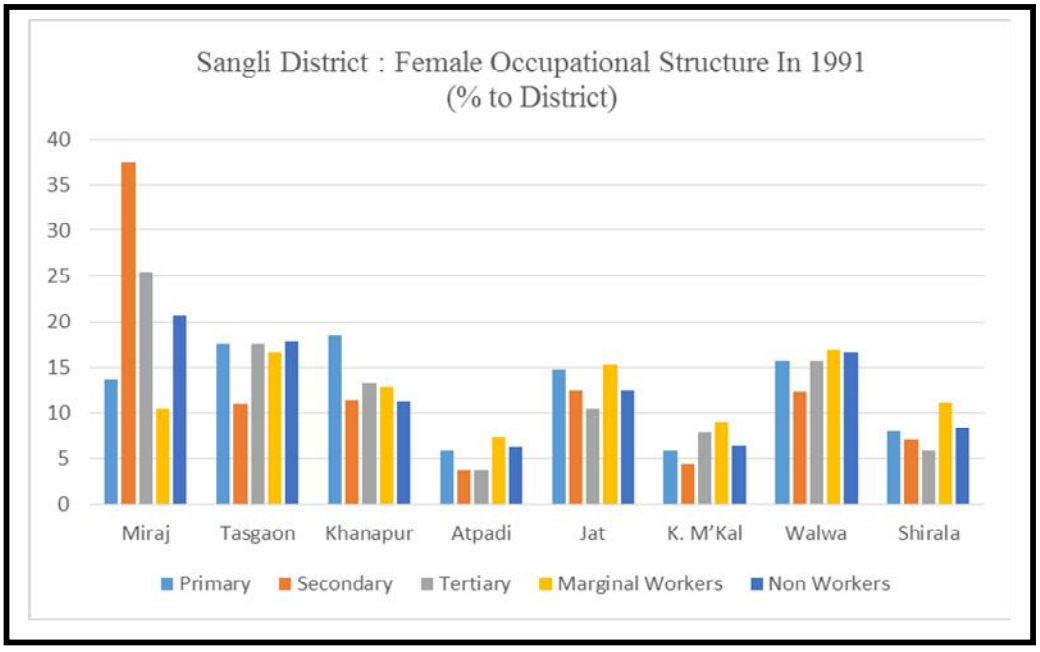

Sangli District : Female Occupational Structure In 1991
(% to District)
40
35
30
25
20
15
10
5
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7. 5 (II)

The table 7.5 (III) reveals that, Kavate-Mahakal tehsil female working population was 23.41 percent, 0.50 percent, 2.20 percent, 18.69 percent and 55.20 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district participation rate was 7.10 percent, 3.57 percent, 3.52 percent, 6.95 percent and 4.98 percent in primary, secondary, tertiary, marginal and non-workers respectively.

Table 7.5 (III)

Sangli District : Female Occupational Structure 2001

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	6.96	0.80	5.40	7.68	79.15	10.94	29.60	44.77	14.80	37.00
Tasgaon	22.58	0.72	2.35	20.00	54.35	20.24	15.18	11.09	21.98	14.49
Khanapur	30.77	0.56	3.16	20.43	45.07	17.01	7.26	9.22	13.84	7.41
Atpadi	22.75	0.46	2.00	18.45	56.34	6.06	2.84	2.81	6.02	4.46
Jat	26.55	0.75	1.79	16.49	54.42	15.70	10.47	5.57	11.96	9.58
K. M'Kal	23.41	0.50	2.20	18.69	55.20	7.10	3.57	3.52	6.95	4.98
Walwa	18.05	1.13	3.43	14.81	62.57	15.98	23.46	16.03	16.08	16.48
Shirala	20.38	0.95	3.87	19.93	54.88	6.97	7.62	6.98	8.36	5.59
District total	18.49	0.79	3.51	15.08	62.14	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District -2001

Percentage of Walwa tehsil observed that, 18.05 percent in primary, 1.13 percent in secondary, 3.43 in tertiary, 14.81 in marginal workers and 62.57 percent in non-workers and its district percentage was 15.98 percent, 23.46 percent, 16.03 percent, 16.08 percent and 4.98 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Shirala tehsil percentage of female working population observed that, 20.38 percent, 0.95 percent, 3.87 percent, 14.81 percent and 62.57 percent in

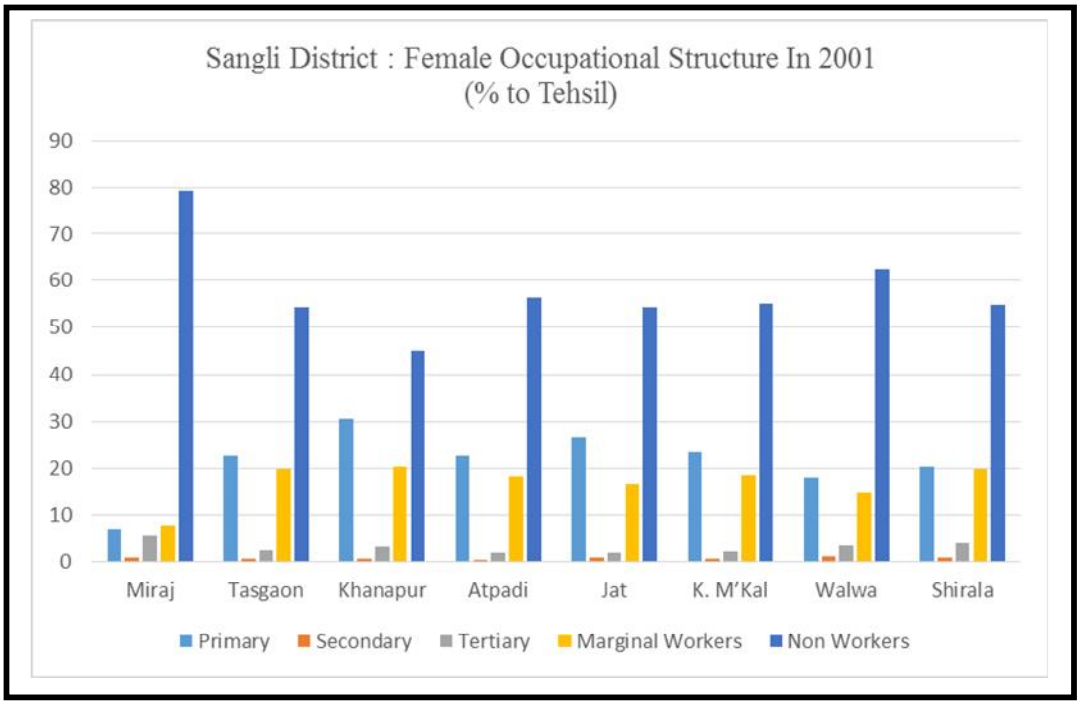
primary, secondary, tertiary, marginal workers and non-workers respectively. And the district percentage of the tehsil was 6.97 percent, 7.62 percent, 6.98 percent, 8.36 percent and 5.59 percent in primary, secondary, tertiary, marginal and non-workers respectively.

District female working population observed that, in Tasgaon tehsil high female working population was 20.94 percent and 21.98 percent in primary and marginal workers in district. Miraj tehsil secondary sector, tertiary and non-working population was 29.60 percent, 44.77 percent, 37.00 percent respectively, it was high in the district.

iv) Census 2011:

Table no 7.5(IV) shows that, Miraj tehsil female working population involved in primary, secondary, tertiary, marginal workers and non-workers, it was 6.62 percent, 0.94 percent, 8.48 percent, 3.74 percent and 80.22 percent respectively during 2011. In this census year Miraj tehsil district percentage was 12.32 percent, 27.43 percent, 48.23 percent, 19.24 percent and 36.71 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Tasgaon tehsil percentage of female working population was primary workers 18.42 percent, secondary workers 1.24 percent, tertiary 4.63 percent, marginal workers 7.05 percent and non-workers 68.65 percent. And its District percentage was 16.56 percent, 17.61 percent, 12.73 percent, 17.50 percent and 15.17 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.


Sangli District : Female Occupational Structure In 2001
(% to Tehsil)
90
80
70
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

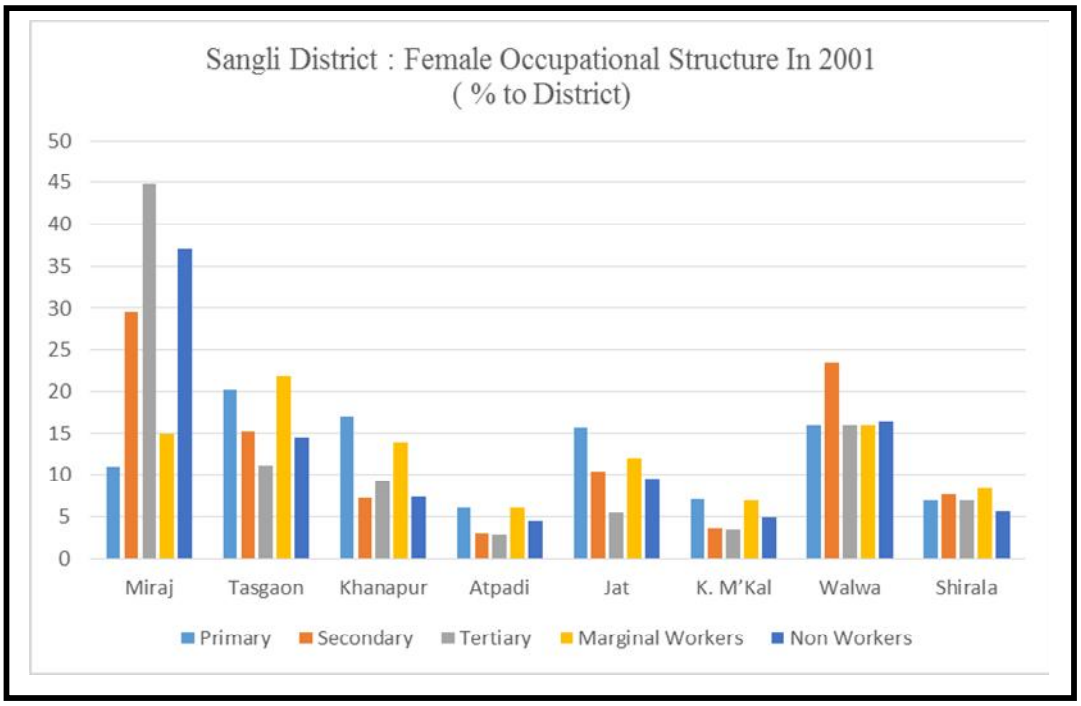

Sangli District : Female Occupational Structure In 2001
(% to District)
50
45
40
35
30
25
20
15
10
5
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.5 (III)

Khanapur tehsil female working population engaged in primary, secondary, tertiary, marginal workers and non-workers was 23.30 percent, 0.42 percent, 3.24 percent, 9.82 percent and 61.21 percent respectively. And the district percentage was 7.99 percent in primary, 2.09 percent in secondary, 3.13 percent in tertiary, 8.57 percent in marginal workers and 4.75 percent in non-workers during 2011.

Atpadi tehsil observed that, 22.31 percent, 1.20 percent, 3.87 percent, 7.18 percent and 65.44 percent in primary, secondary, tertiary, marginal workers and non-workers respectively. And its district percentage was 6.82 percent in primary sector, 5.80 percent in secondary sector, 3.62 percent in tertiary sector, 6.07 percent in marginal workers and 4.92 percent in non-workers.

Female working population involved in primary, secondary, tertiary, marginal workers and non-workers was 28.11 percent, 1.09 percent, 3.51 percent, 7.59 percent and 59.70 percent respectively during 2011 census in Jat tehsil. District percentage of Jat tehsil was 19.93 percent, 12.16 percent, 7.61 percent, 14.87 percent and 10.41 percent in primary, secondary, tertiary, marginal workers and non-workers respectively.

Kavate-Mahakal tehsil percentage of female working population involved in primary, secondary, tertiary, marginal workers and non-workers was 18.64 percent, 0.60 percent, 3.69 percent, 6.75 percent and 70.32 percent respectively during 2011 census. In this census year tehsil district percentage was 6.17 percent, 3.12 percent, 3.74 percent, 6.17

percent and 5.72 percent in primary, secondary, tertiary, marginal worker and non-workers respectively.

Table 7.5 (IV)

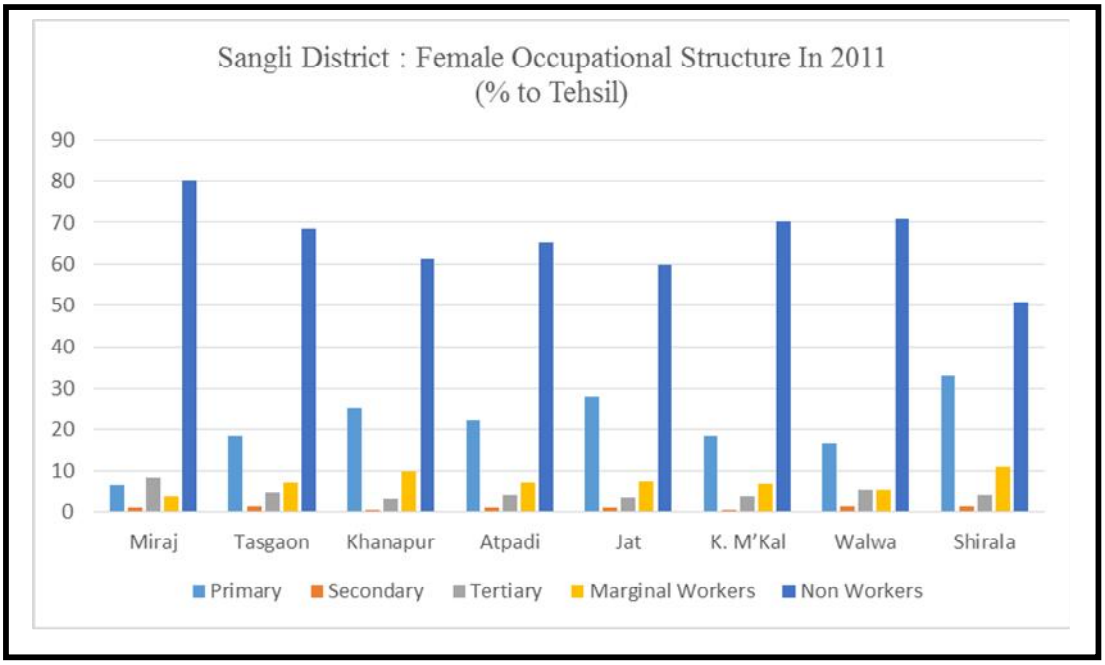
Sangli District : Female Occupational Structure 2011

Tehsil	% to Tehsil					% to District				
	Primary	Secondary	Tertiary	Marginal Workers	Non Workers	Primary	Secondary	Tertiary	Marginal Workers	Non Workers
Miraj	6.62	0.94	8.48	3.74	80.22	12.32	27.43	48.23	19.24	36.71
Tasgaon	18.42	1.24	4.63	7.05	68.65	16.56	17.61	12.73	17.50	15.17
Khanapur	25.30	0.42	3.24	9.82	61.21	7.99	2.09	3.13	8.57	4.75
Atpadi	22.31	1.20	3.87	7.18	65.44	6.82	5.80	3.62	6.07	4.92
Jat	28.11	1.09	3.51	7.59	59.70	19.93	12.16	7.61	14.87	10.41
K. M'Kal	18.64	0.60	3.69	6.75	70.32	6.17	3.12	3.74	6.17	5.72
Walwa	16.68	1.50	5.30	5.55	70.97	16.31	23.17	15.85	15.00	17.08
Shirala	33.14	1.30	3.97	10.87	50.72	13.91	8.62	5.10	12.60	5.23
District total	17.19	1.09	5.62	6.22	69.88	100.00	100.00	100.00	100.00	100.00

*Source: Census of India, District Census Handbook of Sangli District -2011

Percentage of female working population of Walwa tehsil was primary sector 16.68 percent, secondary 1.50 percent, tertiary 5.30 percent, marginal workers 5.55 percent and non-workers 70.97 percent. And its district percentage was 16.31 percent, 23.17 percent, 15.85 percent, 15.00 percent and 17.08 percent in primary, secondary, tertiary, marginal and non-workers respectively.

Shirala tehsil female workers participation reveals that, 33.14 percent, 1.30 percent, 3.97 percent, 10.87 percent and 50.72 percent in primary, secondary, tertiary, marginal and non-workers respectively. And the district percentage of the tehsil was 13.91 percent in primary, 8.62 percent in secondary, 5.10 percent in tertiary, 12.60 percent in marginal workers and 5.23 percent in non-workers during 2011.


Sangli District : Female Occupational Structure In 2011
(% to Tehsil)
90
80
70
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

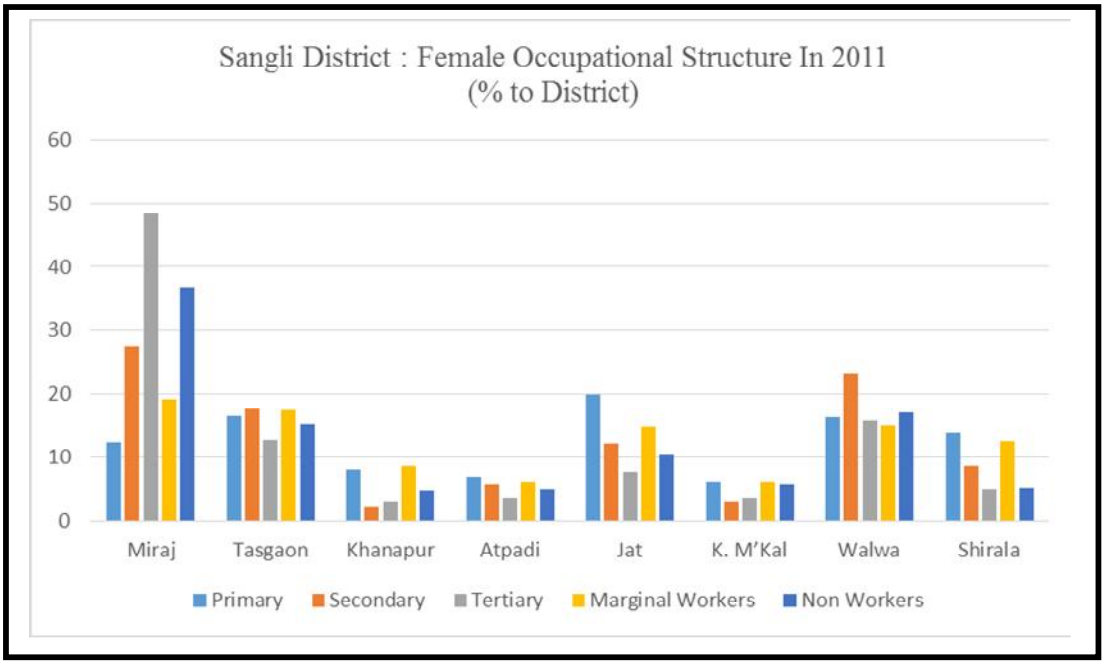

Sangli District : Female Occupational Structure In 2011
(% to District)
60
50
40
30
20
10
0
Miraj
Tasgaon
Khanapur
Atpadi
Jat
K. M'Kal
Walwa
Shirala
Primary
Secondary
Tertiary
Marginal Workers
Non Workers

Fig. 7.5 (IV)

Table no. 7.5 (IV) observed that, in the primary sector Tasgaon tehsil female working population was 15.56 percent high in district. Miraj tehsil secondary sector, tertiary sector, marginal and non-workers working population was 27.43 percent, 48.23 percent, 19.23 percent and 36.71 percent respectively and it was high in the district.

7.7 SUMMARY

Economic condition, social and political status, availability of economic activity and employment standards are parameters to be considered for occupational structure of the region. As seventy per cent of the population of region is engaged in primary activity, it is called as primary civilization

It is due to agrarian nature of the study region, which indicates high percentage of population engaged in agriculture activities. It is found that the primary and secondary working population have witnessed decreasing trend during study span. Tertiary working population increases over the decades within the study region and state. It is a heavy burden on primary sector.

Spatially, it shows that tehsils of highland zone and undulating plateau zone of the study region i.e. Khanapur, Shirala, Walwa and Tasgaon have recorded higher percentage of primary working population. These tehsils have undulating topography region with adverse climatic conditions with lack of development of other sector. Miraj, Tasgaon and

Kavate-Mahakal have progressive and advancing in industrial and administrative sector giving rise to a high rate of secondary and tertiary working population.

The rural-urban differentials of working population of area under study were also studied. It is found that, rural working population is higher than that of the urban working population, it differs from tehsil to tehsil. The rural area of the study region has high female participation percentage in primary working population.

The study of the region shows the high percentage of female workers in primary sector than the male workers, but overall the male workers participation rate is higher than the female workers in the study region because of many reasons like prejudices against female mobility, education, low social status of females in family or in society. It is also found that the rural oriented nature and agrarian economy of the region has higher proportion of marginal workers.

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CHAPTER- 8
CONCLUSION

Population geography emphasises regional change of area in terms of their population. And it focuses on study mams-culture, economic activities and his general distribution at present or past. There exists a need for better understanding of spatial pattern of population. In present work selected "Spatio-temporal Changes of Population of Sangli District" are studied for the period of 1981 to 2011.

Sangli District is one of the most dynamic and variable region in population growth, sex ratio, distribution and density, literacy and occupational structure of the population. Sangli Diatrict is one of the important district of Maharashtra. Sangli District is located between $16^0 45'$ to $17^0 33'$ North latitude and $73^0 42'$ to $75^0 40'$ east longitude and it occupying 8472 sq.km. Sangli City is headquarter of the District, and it is divided in eight tahsils. The total population of Sangli District is 2822143 according to 2011 census, in that total population 1435728 male and 1386415 female population.

Population Geography is more concerned with spatial variations in the distribution of population in terms of all such influences that provide the spatial pattern and temporal dimensions. Population distribution over a region is intimately related to its physical, economic and social environment. The geographer's task is to explain the diversity of this distribution in terms of all

those influences in population distribution that has been ever changing and its causes and effects which vary with time and space.

The present study has aimed to explain the distribution patterns of population in Sangli District of Maharashtra state. This has been analysed with the help of some physical and economic factors. Population is unevenly distributed throughout the region. In some parts, a dense concentration is found while in others it is found very sparse. This variation is mainly associated not only with the physical characteristics but also with the economic set up of the different parts of the study area.

Three distinct physiographical divisions of the study area influenced the uneven distributional patterns of population, The Central River Basin and The Eastern plateau zone of drought prone conditions. The economics of irrigation and diffusion of agricultural innovations have brought significant change in the economic structure of the area. The impact of these changes on economic condition is well reflected not only in the distributional pattern but also in the structure of population of the area.

- The general population density of Sangli District is 214, 258 and 301persons per sq. km. in 1981, 1991 and 2001, which is higher in 1981 and 1991 and lower in 2001 than the state average (204, 257 & 315). There are spatial variations in distribution and density patterns of population within the study area. The central plain zone comprising eastern Shirala, Walwa and Miraj tehsils have high concentration of

population due black fertile soil, improved irrigation facilities, modern agricultural practices and industrial advancements. Whereas, undulating hilly topography, heavy rainfall and poor economic activities with sparse and tiny villages, cause low population concentration in the extreme western hilly area of Shirala tehsil. While the tehsils of eastern undulating plateau zone of Jat, Kavathe-Mahankal, Atpadi and Khanpur have noted moderate to low population concentration. This drought prone zone of the district is lacking in irrigation, communication, trade, industries, with uncertain rainfall conditions.

- One fourth people of the study area live in 8 urban centres. Urban population density is much lower in the study area than the state average as noted 1586 and 1996 persons per sq. km (in the study area) at 1991 and 2001 respectively, whereas, state average recorded 4904 and 6586 persons respectively. Sangli-Miraj-Kupwad the most populated and the largest urban centre in the study area having a 'C' class Municipal Corporation, as against Manadur in Shirala tehsil is the smallest census town with only 3,922 population. The density of Islampur urban centre is moderate, while Ashta, Vita and Tasgaon urban centres depict low population densities.

- Three fourth population of the study area resides in 721 inhabited villages. Half of the villages show low to very low densities of population as against one third villages depict high to very high

population densities. It is observed that rural population density is higher in the study area than that the state. Agrarian nature of study area reveals high population densities. It is found that the villages in the central part of the study area comprise of higher densities of population.

- Agricultural and physiological densities vary from tehsil to tehsil in the study area and fluctuate during the study period. Agricultural density is noted higher but physiological density is noted lower in the study area than the state average. It is found that tehsils of central plain zone of the study area comprise of higher densities in all the categories, whereas, tehsils in the extreme east and extreme west noted lower densities. It has been, therefore, obvious that soil quality, soil pattern, irrigation and technological inputs, cropping intensity are some of the determining factors for higher densities. This leads to higher agricultural index in the study area. The spatial variability in the process of economic development, scarcity of water, lack of industrialization, transport and communication are some of the problems in the study area. This requires implementation of proper planning programmes.

- It has been observed that growth rate differs from tehsil to tehsil. It changes over decades. During last forty years the population of the region grew in absolute numbers but the growth rate exhibited declining trend up to 2001. The growth rate of the study region is analyzed in four periods 1981-91, 1991-01 and 1991-2011. It is found that in the study

area growth rate is low as compared to state average. There were various factors affecting the growth rate during the 30 years span. After the independence, the implementation of five year plans, medical facilities to control diseases and epidemics, implementation of family planning programme to control birth rate, development of agriculture, irrigation, human resources and economic activities have all played significant role in changing the growth rate of the Sangli District due to agrarian nature of the area under study. The high rural population led to out- migration because of lack of economic activity. Another factor is check in the birth rate by improved medical facilities and implementation of family planning programme. The impact of natural calamities like drought further checks the growth rate. Enhancement in irrigation facilities, developed agricultural practices and development of agro-based industries has generated employment opportunities in the study region.

- The tehsil wise population growth during 1981-2011 was grouped into four different population growth regions in the study region i.e. very high, high, medium and low population growth regions. Generally the high population growth was registered in the tehsils of the central part of the study region. This consists of fertile part of Krishna, Yerla, and Varana Rivers. This part of the study showed high degree of urbanization with industrial development. The commercial agricultural practice and concentration of huge medical facilities caused medium growth of population in north-eastern and southern tehsils. It is due to

good agricultural activities and growth of agro-based and cottage industries. Low population growth was noted in tehsils of western part of study region. This is mainly due to undulating terrain, lower rainfall, less development of industries, lack of transport and communication. The said situation resulted in population migration for employment in other regions.

- Rural and urban population growth rate is low as compared to state average. The rural growth rate of population has declined due to out-migration of people from rural area to urban center and outside the region for seeking job and employment opportunities. The urban population growth rate increased from 1981. This was due to high degree of urbanization, classification of number of new towns and industrial growth. The commercial agriculture practice, agro-based industrial growth provided all types of facilities in rural area. It checked the migration from rural area. On the other hand, high cost of living in the urban area caused the workers to live alone leaving their families in rural area.

- It is found that, male-female population growth rate also fluctuated in time and space. During 1981-91, male growth rate is higher than the female growth rate. It is due to enhancement in irrigation facilities in the study region which improved economic opportunities in agriculture. The growth of agro-based industries checks the male selective out

migration. After 1981, female growth rate has declined sharply. The female birth was also controlled by technological improvement in medical facilities such as sex identification.

- However, it may be noted that fertility, mortality and migration are the three major demographic factors which affect patterns and temporal changes of population growth. Fertility and mortality check the growth rate and migration changes pattern of population growth. In the study region, temporal changes of population growth depended upon birth rate, death rate and changing economic character. Migration played an important role on regional disparities. The above discussed factors and physiography, climate, soil and drainage are physical factors which have affected the growth of population directly or indirectly. The economic activity, industrial development, transportation, communication, social factors, social changes, taboos, ethics and regional imbalances are numerous other factors which are related to the population growth.

- Sex ratio is a significant demographic and cultural index and can be of value to the demographers as well as population geographers in a discussion of spatial characteristics. In comparison with the general population of Maharashtra, the population in the study area is characterized by a relatively high sex ratio. This high sex ratio in the study area may be resulted from high rural sex ratio.

- A number of geographical as well as socio-economic factors influence the sex ratio of the study area negatively as well as positively. Undulating topography, heavy rainfall, drought condition, inequality of soil fertility, illiteracy, changing cropping pattern, sustained growth of agro-based industries status of women in society, migration etc. are the factors affecting the sex composition of the study area. Spatial variations in sex ratio within the area reflect the variation in migration trends.

- Spatio-temporally, the sex ratio of population in Sangli District varies from tehsil to tehsil in both the decades. Shirala tehsil in the western hilly area is endowed with high sex ratio as against low sex ratio in the tehsils of Central Plain Zone, while it is moderate in the Eastern Plateau Zone tehsils during the study period. Surprisingly Khanapur tehsil has a standard sex ratio 0f 1000 females per 1000 males in 2001. The average sex ratio of Sangli District in 1991 was 958 and 957 persons per sq. km in 2001, showing the decrease of only 1 person within a decade. It is evident that the general sex ratio of the study area remains the same during the study period. This disparity in the regional pattern of sex ratio is the result of variation in geographical and socio-economic factors.

- Sex ratio of the study area also varies from rural to urban areas. The sex ratios in rural population are generally higher than that of urban population. The high sex ratio in rural areas is caused mainly from the out-migration of male work force, while urban centres have created

male selective pull factors at their locations, which led to low sex ratio. Thus the change in rural-urban sex ratio are mainly the product of male selective migration and inequalities in regional development within the study area.

- The urban population in the study area is characterized by acute paucity of females. Urban sex ratio varies from one centre to another. Specially, a smallest urban centre, namely Manadur, in Shirala tehsil exhibit very high sex ratio of 1067 females per 1000 males in 2001, as more than 50 percent people were out-migrated within a decade of 1991-2011 as they were dam affected people. Remaining urban centres display low sex ratio ranging from 887 to 947 females per 1000 males in 2011. The highly urbanized industrial towns attract large number of males for employment, general labour, industrial work, construction work, etc. Most of the males who migrate to these urban centres leave their families behind their native places.

- However the danger of pre-birth sex determination tests turning into a surrogate of female- infanticide of historic past might neutralize the gains of improving female life expectancy, if immediate corrective measures are not taken.

- The study area Sangli District, exhibit, that there is slightly low percentages of literacy than the state literacy percentages during 1981, 1991, 2001 and 2011 respectively. The growth in literacy rate is also

slightly lower than the state average which is a result of the backwardness in agriculture and poor industrial development. The places of high literacy have been characterized by high degree of industrialization and urbanization in the study area. Striking disparities in the rate and pattern of the literacy are found in the study area, affected by sex, residence and occupation. The differences in the percentages of literates and gender gaps in agricultural areas and non-agricultural areas are also significant.

- Tehsils in Central Plain River Zone are highly urbanized, technologically advanced and industrially developed, have very high literacy rate. The tehsil in Western Hilly Zone reports the moderate literacy rate. While the tehsils in Eastern Drought Prone Zone have moderate to low literacy rates, indicates that there is great influence of geographical factors on literacy.

- Industrially developed and technologically advanced urban centers in Central Plain Zone exhibit very high literacy rates as compared to other urban centers in the study area. Overall urban literacy rate in the study area is low as compared to the state. Economic backwardness in the study area causes migration of population from study area for jobs and employment opportunities elsewhere.

- Literacy pattern and rate of literacy in the villages of study area exhibit the positive correlation between the size of population and literacy rate.

Large sized villages have more literacy rate than that of small sized villages. The villages located in the Central Plain Zone, the economically developed area, have relatively high literacy rates as compared to Western Hilly Zone and Eastern Plateau Zone. This is due to the unfavorable topography, lack of traditional occupation, transportation and communication, limited facilities of education. As many villages in the study area are identified as the most illiterate villages, where there is need to pay attention to improve literacy rate for better human resource development.

- The empirical evidences of the present study indicates that there exist spatial inequalities not only in the literacy rates of male and female population but also is urban and rural masses. Keeping in view the complexities of socio-cultural and economic scene and the spatial variations is the study area; it should strive for universalization of at least elementary education at the earliest possible.

- It is hearty to record that the literacy gap in the study area is not much high. Transport and communication facilities, technological and economic advancement, change in occupational structure, government efforts to provide educational opportunities in each and every part and segment of society are the prime reasons for improvement in literacy rate. It requires identification of areas which needed immediate policy initiatives is the field of education.

- Economic condition, social and political status, availability of economic activity and employment standards are parameters to be considered for occupational structure of the region. As seventy per cent of the population of region is engaged in primary activity, it is called as primary civilization.

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SUGGESTIONS:

India has no future without effective human resource development for organizational effectiveness and natural & social growth. Human resource development envisages a very comprehensive process of dealing with the regional human resources in the context of potential land resources. As far as the case of Sangli district is concerned in specific, a strategy for human power is to be consciously planned to achieve regional development. Of the eight tahsils in the district, six tahsils are identified as 'Rain shadow areas' as far as socio-economic development is concerned. These tahsils are Shirala, eastern Tasgaon, Kawathe-Mahankal, Atpadi and Jat. Suitable suggestions are made, to change the existing situation and thereby to achieve socio-economic developments in the study area.

- The physiographic impediments in the extreme west and drought condition in the eastern and north-eastern parts seem to act as restraints

in economic development. It is also observed that the central river plain area where the substantial facilities of irrigation have enhanced the agricultural mechanization. As there are no perennial streams in the eastern and north-eastern parts of the region, there arises need for water management programmes. Judicious use of irrigation water is one of the important aspects to be taken care of, especially in the drought prone areas. Construction of canals, particularly like the newly constructed Chandoli, Takari, Mhaisal, Tembhu irrigation projects, are essential so that additional land can be brought under irrigation, which will minimize the out-migration.

- The later strategy is being accepted by the Government and accordingly 'Takari', 'Tembhu' and 'Mhaisal' schemes have been started from 1985. Palus, Khanapur, Miraj, Tasgaon tahsils have been benefited by these projects. Mhaisal Sixth Stage is so much beneficial for Jat tahsil and Tembhu lift irrigation scheme for Atpadi tahsil. However, it is observed that work of these schemes is held up due to non-availability of grants. It is needful to collect the funds for the completion of these schemes. The funds can be raised from the Central Government and through National Agricultural Bank for Rural Development (NABARD) or even from World Bank on long term basis. These schemes can also benefit in developing local resources potentials in the eastern and north-eastern parts of the study area. The completion of these projects will create

more opportunities of development particularly in backward areas of Western, North-Eastern and Eastern region of Sangli district.

- In spite of certain constraints, there is a vast scope for the development of different types of industries in near future. Development of industries can check the migration from the study area. Industrial development in Sangli district relies upon its endowment to local natural resources. The industries like sugarcane, cotton spinning, co-power generation, oil extraction, paper and hardboard, jaggery, turmeric powder, poultry and dairy food production, fruit processing sericulture, aquaculture and allied industries like dairy, poultry, rope-making, woollen blankets etc. have bright future if it is properly planned and implemented.

- Deficiencies with respect to some of the other infrastructures such as roads, railways, electricity, irrigation, communication and marketing facilities are affecting adversely the prospects of agriculture in the study area. These are some of the problems and prospects prevailing in the area which require detail discussions and investigations for solving the issues and problems. Specific schemes and projects will have to be formulated according to the priority of needs, for amelioration of problems and for a bright future.

- Modern avenues and technologies like, computer aided training, e-learning, distance education; open universities, internet and facilities for financial credits for the benefit of upcoming generations are advisable.

- The uneven patterns of population aspects at the tahsil and village levels have proved immense material for stimulating academic thinking and reflection, as well as a 'condensed material' for the use of 'area planning and administration'.

The study leads one to much more seriously think now on some methodological issues and relations of population with economic and social changes so that 'Population Geography' in Maharashtra would soon occupy a premier position in population studies.

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