CHAPTER - I

GEOGRAPHICAL PERSONALITY OF THE STUDY REGION

1.1 INTRODUCTION :

Geography is concerned with spatial distribution of various characteristics on the surface of the earth. These characteristics are described with some speculation and keen insight regarding the sequence of cause and effect. Population Geography is one of the important branch of Geography. It has experienced remarkable changes within the last thirty years.

The population study is concerned with its size, structure and characteristics, its distribution and changes taking place in it over a period of time. The subject matter of population studies includes the study of fertility, mortality, migration and social mobility, that is the component of change in size, structure, characteristics and distribution of population. It must be understood that the population of any place at a specific time is a function of three types of events - births, deaths and migration (Bhende,1978).

It is important to understand at this stage the meaning of population characteristics. Population characteristics include such characteristics as marital status, literacy and educational status, labour force status, population structure implies the age and sex structure of the population. Population characteristics, however, can

and do change through ' Social mobility,' that is through movement of individuals from one status to another, for example - from 'single' to 'married' status and also through fertility, mortality and migration.

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

Population may be distributed in to sub-groups, according to each of the foregoing characteristics. For instance, when sex is considered, the entire population may be classified into two groups - males and femeles; when religion is considered the entire population may be divided into different religious groups. The study of population characteristics thus relates to the distribution of one or more of these characteristics within a population.

Population geography is concerned with the spatial pattern of population phenomena in the context of aggregate nature of a place. Spatial variations in population, no doubt, functions on a host of physical, economic and cultural

factors, they operate through the dynamics of population change. Population character is closely related to economic development. In short, it in itself is, to a great extent, a result of regional disparity in economic development. Interpretation of the structure of the population character therefore is an important aspect of population geography. Such a study is particularly needed in a country where a conscious effect is being made to change the functional character of population and improve its standard of living.

There are many factors by which the researcher is driven to select the topic for his investigation. The impact of economic development on population characteristics in Pune division is a problem chosen by the researcher. It has been always said that the economic development has a great bearing on population character of any area. The development of industries, transportation, urbanization and agricultural practices have always influenced the population character of any region. Keeping this view point in mind, the present work is an attempt to understand the changes in the levels of economic development and their impact on population character (Bhende,1978).

The present study deals with impact of economic development on population characteristics in Pune division. The data used in the present work is based on various published and unpublished records and census publications.

A special feature of the present work is the use of the computer system. Relevent data used particularly for specific analysis are stored on maxell floopy disket and some analysis are performed with the help of digital computer system. The entire work is organized into five chapters.

The First Chapter deals with an introduction to the study area, data base approach to the present study. In this chapter the general economy, industrial structure of the region, transport and communication, vegetation, soil and drainage system have been elaborated in details.

The second Chapter deals with the levels of economic development in the study region. The levels of economic development cannot be measured directly, a number of indicators have been selected for analysing them in the study area. The indicators are meant for measuring different aspects of development in each district of the region.

In the Third Chapter the changes in population character of area are studied. Various population characteristics are given due importance.

The Fourth Chapter deals with dynamics of occupational characteristics, where author has tried to show changes in occupational characteristics and the changes in functional association of occupations.

In the Fifth Chapter an attempt has been made to correlate the levels of development and their impact on population characteristics.

In the style of presentation, references are given at the end of each chapter, footnotes, wherever necessary, are referred to the source of information. In this thesis only an important processed tables are given in the text. The maps and graphs have been drawn by author. All concerned data has been processed by author. As far as possible errors and repetitions have been deleted, yet through oversight some errors might have crept in the text for which author may be excused. The author will be satisfied even if this work adds very little to the existing knowledge in the field of population geography.

1.2 LOCATION AND PHYSICAL SETTING :

The region under study extends between 15°44' and 19°14' North latitudes and 73°26' and 76°25' East longitudes. The region covers an area of 57275 sq.kms and includes 56 tahsils. Pune division includes five districts of Maharashtra and covers 18.78 percent area of the state. The division records 16,413,956 persons of which 32.59 percent population lives in urban centres and nearly 67.14 percent population lives in rural areas. The general sex ratio of the study area is 960 females per 1000 males and 54.95 percent

population of the region is literate. In the study region 49.55 percent rural and 66.12 percent urban population is literate. Pune division, as a administrative region, is comprised of five districts viz. Pune, Satara, Sangli, Solapur and Kolhapur as shown in Fig.1.1. It encompasses the major part of the state with its own identity and typical set of characteristics.

Pune division has distinctive geographic personality. The western boundary is delimited by the crestline of Sahyadri. The southern fringe runs along the interstate boundary between Goa, Maharashtra and Karnataka state. The northern area delimited by Nasik and Ahmednagar districts. The boundary of Solapur district separates the region from Marathwada to the eastern side of the region lies Gulbarga district of Karnataka state as shown in Fig.1.1.

The study region is a part of the Maharashtra plateau and forms the Western Maharashtra upland, with its local variations in relief. In the west average height is about 900 meters above sea level. The central part of the region is, by and large, 600 meters in height, while the eastern portion descends between 450 to 600 meters. The general slope of the region is eastwards and south-eastwards (Deshpande,1971). The study area may be divided into five physiographic divisions 1) Upland hilly region 2) Upper Krishna valley 3) Central dry plateau and 4) Upper Bhima basin.

PUNE DIVISION - ADMINISTRATIVE UNITS

Code No.	Taluka
	PUNE DISTRICT
1	Junnar
2	Ambegaon (Ghodegaon)
3	Khed
4	Shirur
5	Mawal (Vadgaon)
6	Pune city
7	Haveli
8	Daund
9	Mulshi
10	Valhe
11	Purandhar (Saswad)
12	Baramati
13	Indapur
14	Bhor
	SATARA DISTRICT
1	Khandala
2	Phaltan
3	Wai
4	Mahabaleshwar
5	Jaoli (Medha)
6	Koregaon
7	Khatav (Vaduj)
8	Man (Dahiwadi)
9	Satara
10	Patan
11	Karad
	SANGLI DISTRICT
1	Atpadi
2	Khanapur (Vita)
3	Shirala
4	Walwa (Islampur)
5	Tasgaon
6	Jath
7	Kavathe Mahankal
8	Miraj (Sangli)
	SOLAPUR DISTRICT
1	Solapur North
2	Barshi
3	Akkalkot
4	Solapur South
5	Mohol
6	Mangalwedha
7	Pandharpur
8	Sangola
9	Malshiras
10	Karmala
11	Madha
	KOLHAPUR DISTRICT
1	Shahuwadi
2	Panhala
3	Hatkanangale
4	Shirol
5	Karveer
6	Bawada
7	Radhanagari
8	Kagal
9	Bhudargad (Gargoti)
10	Ajra
11	Gadhinglaj
12	Chandgad

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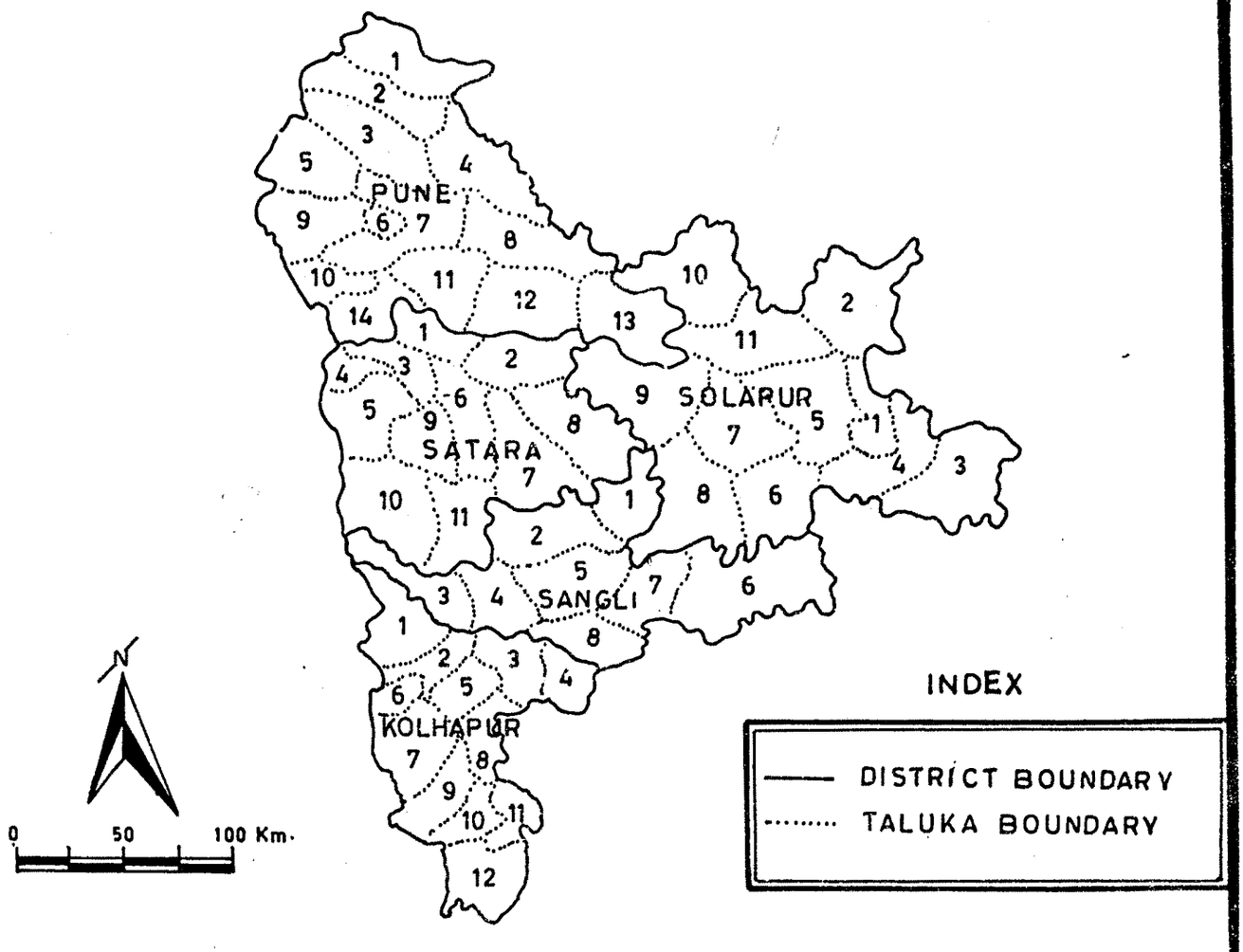
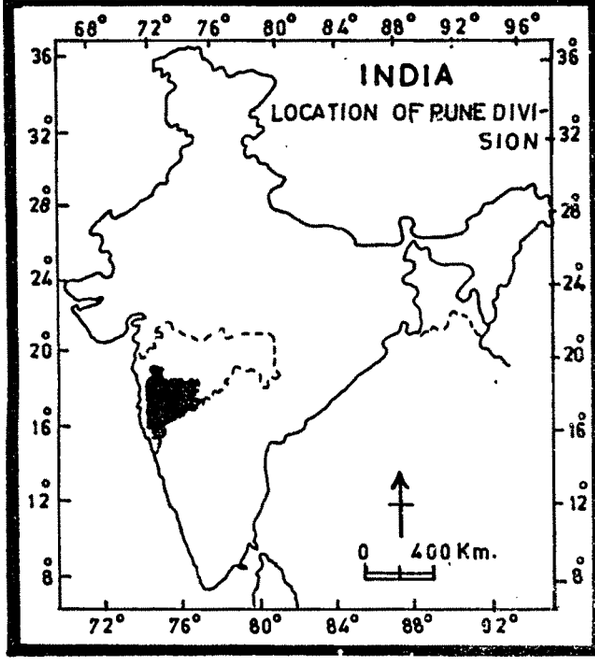
PUNE DIVISION
ADMINISTRATIVE UNITS





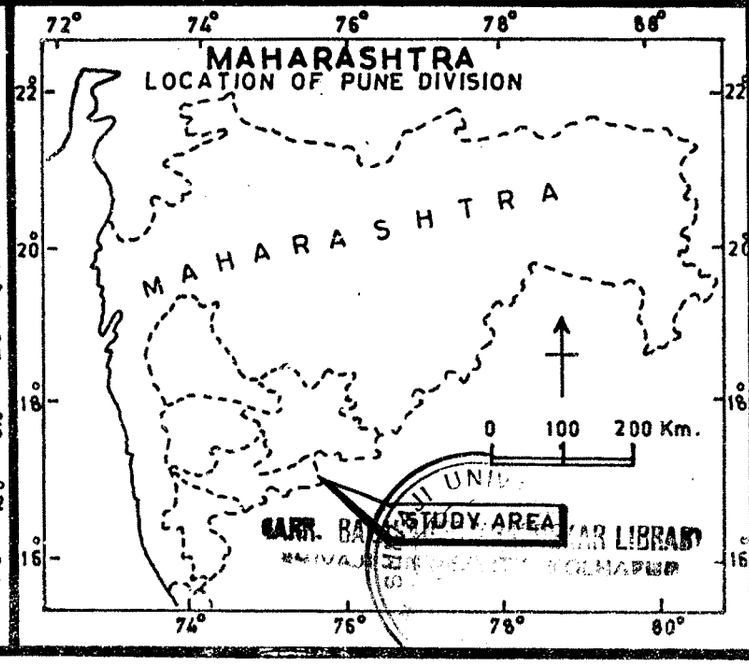


Fig. 1·1

1) Upland hilly region :

The western boundary of the region is well defined by the crest line of Sahyadris, commonly known as Western Ghats. It separates the Konkan costal lowland from the study region. The Western Ghats comprise of the main Sahyadri range with an average height of 1200 metres. This hilly region includes eastern most edge of Konkan districts and western talukas of Satara, Sangli, Kolhapur and Pune districts. Here Sahyadri runs almost continuously in north-south direction with its major peaks and intervaining saddles. The famous offshoots of Sahyadri are the Harishchandra range of Mahabaleshwar range. The region is dotted with a good number of hills and butte. The crestline of Sahyadri fluctuates greatly in height from north to south. The height of 900 metres is most common.

The Western Ghats carry some of the high peaks like Kalsubai (1648 m.), Salher (1567 m.), Mahabaleshwar (1438 m.), Harichandragadh (1428 m.), several hill ranges emerge from main Sahyadries and extend on the south. The region is dotted with a good number of hills and butte.

There are a number of such passes which provide the site for laying of roads a railways, linking the coast with the upland. The important passes are as follows.

i) Rantodi Ghat - Mahad-Mahabaleshwar

ii) Kumbharli Ghat - Chiplun-Chiplun-Karad

iii) Amba Ghat - Ratnagiri-Ratnagiri-Kolhapur

iv) Phonda Ghat - Devgad-Ratnagiri-Devgad-Ratnagiri-Kolhapur

v) Amboli Ghat - Vengurla-Sawantwadi-Vengurla-Sawantwadi-Nipani

The Sahyadri ranges are distinguished by their beight, relief, heavy rainfall and forest cover and a precipitious west facing escarpment. Due to heavy rainfall most of hydroelectricity stations are located in Sahayadri. The Sahyadris offer some attractive sites, that are being developed as tourist, resorts and hill stations. The region has hard lateritic soils and infertile soils also, it receives 2500 to 6000 mm rainfall. The other system of hill includes the narrow ridges with flat tops that stretch eastwards and gradually sink into the plain. Homogenous topography and climate are good aspects of this region.

2) Upper Krishna Valley :

The Krishna basin is the region of Maharashtra plateau occupying its western periphery. It extends between the Sahyadrian spurs on the west and the Mahadeo range on the east. The Upper Krishna valley is a portion of basaltic part of Maharashtra Deccan plateau with an average height of 600 metres above mean sea level and covers 16.5 percent area of the study region. This valley has extended in parts of Satara,

Sangli and Kolhapur districts. The extreme western part of the basin is rugges, with flat-topped mesas abutted by escarpments rising several hundred metres above the valley bottoms.

The river Krishna has a large number of tributaries descending from the Western Ghats. The Venna, Kudali, Koyana, Vrmodi, Tarali, Warana, Panchganga, Dhudaganga, Hiranyakeshi, Ghataprabha and Vedganga are the major tributaries joining Krishna from the right bank. The Yerla and Vasna joining left bank. The Upper Krishna basin covers an area of 21,900 sq.km. The Krishna valley is the most fertile part of the study region.

3) The Central Dry Plateau :

The central dry plateau zone lies between the two river system of the region. To the east of the Sahyadri, extends a wide open country called the plateau which covers more than three fourth area of the region. It is a vast plateau slopping eastward and framed by the Sahyadri running north to south on the west and the Satmala range extending in west-east direction on the north. It includes Khandala, Phaltan, Khatav, Man talukas of Satara district, Khanapur, Jath, Atpadi and Kavathe Mahankal talukas of Sangli district and Sangola taluka of Solapur district, eastern portion of the Pune district. This transitional zone with two important

hilly ranges namely Mahadeo range and Phaltan range, is undulating plain.

The heights on the plateau vary between 400 and 700 metres above sea level. In the southeast part, especially south of Solapur, the average height varies between 300 to 450 metres above sea level. Mahadeo range height is 1400 metres above sea level. This plateau carries thin soils that permit only kharif crops, rainfall is about 55 mm. This plateau region is a part of drought prone area of Maharashtra. The Saswad plateau lies just south of Ambala range rising over Diwaghat escarpment. It attains a height of about 800 metres and drained by the river Karha, a tributary of the river Nira. The Man, Khanapur-Jath plateau with an average height of over 700 metres above sea level.

4) Upper Bhima Basin :

The river Bhima drains a large area of the central and the south eastern part of the Western Maharashtra plateau through its tributaries. The basin ranges between Ahmednagar plateau on the north and the Mahadeo range in the south. Down the Bhima, Nira confluence, extending right upto confluence with Krishna on Karnataka-Andhra Pradesh border. The western half of the Bhima basin is cut into a series of west-east narrow valleys and flat divides, while the valley further east open out into flat undulating plains.

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The river Bhima rises near Bhimashankar at a height of about 1000 metres in Mawal region of the Sahyadri in Pune district. It covers 24.5 percent land of study area and covers major part of Solapur district excluding Sangola taluka, northern and eastern part of Barsi taluka, central part of Madha and Karmala talukas and southern part of Malshiras taluka. The river collects a number of tributaries like Kukadi, Ghod, Sina on the left bank from the north and Indrayani, Mula-Mutha, Nira and Man on the right bank from the south in the study region.

The whole Bhima basin is a dry area with an average rainfall varying between 480 and 750 mm. Black soil of rather uniform depth are found in the river valley and their larger streams. The Bhima valley is the most fertile part of the Pune and Solapur district of the study region (Arunachalam B.,1967).

1.3 SOILS :

The soils of the Pune division have been commonly known for its black cotton soil of Deccan trap origin. The soil of the region vary in its composition, colour, texture, fertility and depth. In the western side of all districts soil is laterite soil and alluvial soil, it is found in Krishna and Bhima basin. In the plateau region black soil is found. In the eastern portion of each district consist

of regur and red soil. The medium and deep black soils occupy the largest portion of the region. These soils cover the plateau and river valleys to the eastern side of Western Ghats.

1.4 VEGETATION :

Natural vegetation affect the distribution of rainfall of the region, drainage systems, topography, soil conditions, biotic factors and the extent of human interference. In the study region following are the types of forest. In the Western Ghats and high laterite plateau are of high rainfall (more than 2500 mm) and known as tropical evergreen forest. Tropical wet evergreen forests of Western Ghats are flanked on the eastern side by semi-evergreen forest. The rainfall ranges between 1000 to 2500 mm area. The forest is known as tropical moist deciduous forest. This forest occurs in the slopes of the eastern offshoots of the Sahyadries. The tropical dry deciduous forest occurs in the area where rainfall range between 1000 and 1250 mm. Tropical thorn and scarbs forest cover almost the whole dry tract or the region having a rainfall of less than 500 mm.

The forest are mainly concentrated in the western part of Kolhapur, Satara and Pune district of the region. The most conspicuous forest products of Western Maharashtra plateau are many economically valuable species of trees like teak, hirda, bamboos, bibla, sissum, kindal, tendu, palas etc.

Timber, fuel, forage and a variety of medical plants and raw materials in many industries.

1.5 DRAINAGE :

The drainage of the area is well developed and geared to the base level of the river Krishna and Bhima. These two important rivers control the entire drainage of the area. The Western Ghats are the source of all the principal rivers of the Western Maharashtra plateau. The drainage is well developed and created to the base level of these major rivers. Almost all part of the region is drained to the Bay of Bengal.

The river Krishna has its origin on the eastern slope of Sahyadri near Mahabaleshwar and length of 364 kms in study area. In Pune division only 26.80 percent of its total catchment area. The important tributaries of Krishna, the Venna, Koyna, Tarali, Urmodi, Yerla, Morna, Warana, Panchganga, Dudhganga, Vedganga and Heranyakeshi. The Krishna river plays an important role in transforming the life of the people in the valley areas as shown in Fig.1.2.

The Bhima river basin is a famous and economically rich river basin. The northwestern part of Western Maharashtra is occupied by Bhima basin and its lower tributories. It takes its rise in the Western Ghats at an elevation of 1000 metres near Bhimashankar in Pune district. It flows

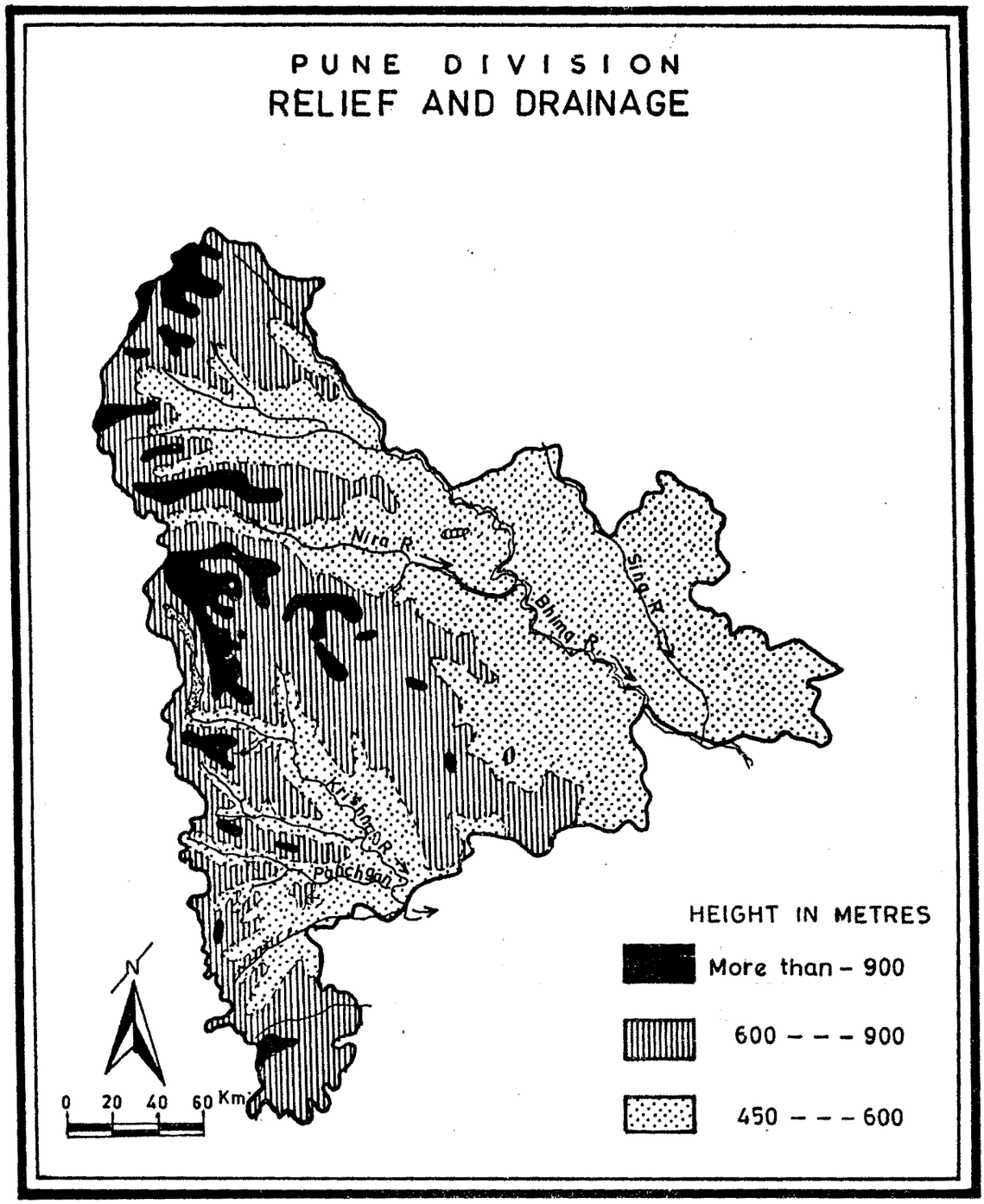
PUNE DIVISION
RELIEF AND DRAINAGE
Nira R.
Bhima R.
Sina R.
Krishna R.
Panchganga
N
0 20 40 60 Km
HEIGHT IN METRES
More than - 900
600 - - - 900
450 - - - 600

Fig. 1·2

for a distance of 568 kms and 45,251 sq.kms area of the study region. The main tributaries of Bhima are the Kukadi, Ghod, Sina, Indrayani, Pavna, Mula-Mutha, Nira and Man. The Nira is the important tributory of Bhima river. This tributory runs between Pune and Satara district. This has enriched its basin agriculturally and industrially (Arunachalam B.,1967).

1.6 CLIMATE :

Climate is the most important factor influencing on landuse, cropping pattern and economic activity of Man. It also affects on transport system and settlement pattern. The climate of the study region is essentially a tropical monsoon type. The variation in climatic conditions is as follows.

The hot climatic condition occurs in summer season (February to May) wet and cool during rainy season (June to September) and cool during the winter season (October to January). The region displays significant regional variation not only in thermal conditions but also in amount of intensity of rainfall. The region has an extreme and dry climate.

1.6.1 Rainfall and Temperature :

Pune division experiences a great contrast in the distribution of rainfall. In case of temperature in summer

it is much hotter and the winters have warm days and cool nights. The rainfall is characterised by heat variability both in terms of space and time. In the study region maximum temperature occurs in the Western Ghats in May and in upland or plateau in April. The maximum temperature rises above 45°C while the mean minimum temperature of the coldest month (December and January) varies between 11 to 15°C on the Western Maharashtra plateau region.

The distribution of monsoon over the region is unequally distributed. The period of rainy season is only four months. From the month of June to September more than 80 percent rain is received in the region. On the Western Ghats rainfall varies from 4000 to 6000 mm. The plateau region 700 mm to 800 mm and the dry area 400 mm to 500 mm as shown in the figure.

1.7 ECONOMY OF THE REGION :

The region under investigation is Pune division of Maharashtra. Agriculture is main stay of the economy of the region. The agricultural landscape of the region is well marked by a significant increase in both the area as well as agricultural production. The diffusion of agriculture innovation has brought significant change in agricultural system of this region. In Pune division dominance of food crops is found in western hilly area, central plateau, Bhima valley

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region and south central region of the division. Nearly 70 percent of the total area is devoted to cultivation. In the central dry plateau region jowar, bajara, groundnut, sugarcane etc. are important crops. Bhima and Krishna valleys are agriculturally most prosperous regions of the study area. In the drought prone area of the region potatos, onions are the main cash crops. Sugarcane is the principal cash crop in Krishna, Bhima basin. In the study region horticulture has been developed. Rice is the staple food crop of western hilly zone; cotton, tobacco are main crops of eastern part of the division.

In the study region sugarcane is most important commercial crop. It shows the pre-eminence of cash crop in the agricultural economy of Maharashtra state. Other cash crops are like grape, tobacco, banana are relatively recent. In the last thirty years there have been a considerable changes in agricultural production such as the development of irrigation, the provision of better agricultural inputs, like fertilizers and improved seeds and diffusion of agricultural innovations.

The role of lift irrigation is significant in Panchganga basin. Kolhapur and Sangli districts are virtually depend on lift irrigation. The sugarcane cultivation depends on lift irrigation while in Pune district sugarcane is grown on canal irrigation. The Pune

Satara, Sangli and Kolhapur districts show high level of irrigation. In the above districts Panchganga basin in Kolhapur district, Krishna plain in Satara, Mula-Mutha plain in Pune district can be clearly identified as intensively irrigated areas of the region.

1.7.1 Industrial structure of the study region :

Industries play an important role in the economic development of a region. It also stimulates the growth of trade, commerce and transportation. The overall impact of these developments can also be seen in the development of agriculture of the area. The major industries and development of the region have confined in and around Pune, Satara, Sangli, Solapur and Kolhapur cities. In the study region there are 6055 working factories which constitute 26.26 percent of the total number of the working factories of the state and 37.65 percent of total main workers of study area. However the most of the hilly talukas of the region have very few industrial locations. The urban centres of the region have been located by heavy and light industries but most of sugar industries are located in the river valleys.

The most spectacular aspect of industrial landscape is distinct industrial belt central around Pune city. Most of the industrial nodes of the region follow the major transport routes. In the study region Pune is highly industralised

and urbanized area. The second industrial zone of the region lies between Sangli, Kolhapur and Ichalkaranji. In this area manufacturing, casting and textile industries have been developed. In the third industrial region is Solapur city region which is famous for textile industry.

In the study region, Solapur and Ichalkaranji are specialised textile centres of Maharashtra. The handloom and powerloom textile industries are located at Vita, Sangli, Pune and Kolhapur. The region has a very diversified composition of industries ranging from agricultural implements, food processing, textiles, engineering and chemical to plastics, automobile, transport equipment, electric goods. In and around Pune city industrial unit is located. The manufacturing goods are scooters, machine tools, automobile metals, agricultural equipments, machinery, light engineering goods and electrical goods.

The Mzharashtra Industrial Development Corporation have developed a number of industrial areas and industrial estates with all the infrastructural facilities in all the districts of the region.

1.7.2 Transport and Communication :

Transport lines are the arteries of the region. Quick and efficient transport of goods is of vital importance from the point of economy of any region. In the study region the

following classification of road are observed in different categories in kilometers. The pacca roads are divided into two types, i) the first is of black top and ii) water bound macadam. The study region shares 23.02 percent black top road to the stak of Maharashtra. The districtwise distribution is unequal. The Sangli district shares 3.43 percent black top road as compared to the State of Maharashtra. Pune and Satara districts share more than 5 percent and Kolhapur and Solapur districts share more than 4 percent black top road in connection to the state level.

The water bound macadam road distribution is also unequal. Pune division share 18.08 percent to state, while Solapur district shares 5.06 percent and Satara 4.22 percent, Sangli and Kolhapur districts share more than 2 percent in connection with the state level. In the development of region the railway facility is significant in Pune division. The major clusters of industries at Pune, Satara, Sangli, Solapur and Kolhapur centres are connected to the railway line. The growth of road and railway transport initiates the development of urban centres as trade centres. The distribution of railway route length is unequal, categories of broad, meter and narrow guages. In Pune division we observed that large scale of broad guage rail route facility. The study region shares 21.84 percent of stak broadguage.

In the Pune division, Pune 8.06 percent, Solapur 6.57 percent, Satara 4 percent, Sangli 2.09 percent and Kolhapur

1.10 percent broadguage rail route shares out of total broadguage of state. The meterguage type is completely absent in Satara and Kolhapur district, whereas Solapur, Sangli district shares 1.33 percent meterguage rail route. The narrowguage facility is high in Solapur district 17.75 percent and in Sangli 7.92 percent while in other district in study area the narrowguage rail route does not occur. Pune division shares 21.84, 9.81 and 25.77 percent broad, meter and narrow guage rail route as compared to the state.

According to different classes of road length in division, Pune district stands first in all categories. Other district in the study region are unequally distributed. The National Highway No.4 and 9 traverse in the study region. The road length category in kilometers shows a clear picture of the region. In the study area Pune 12.21, Solapur 5.41, Satara 4.36, Kolhapur 1.55 and Sangli 10.2 percent. The national highway length shares to state and division 24.56 percent. The state highway length in division Pune 4.37, Solapur 4.80, Satara 3.03, Kolhapur 3.01 and Sangli 2.94 percent it share to total length of state highway. Pune division shares 18.17 percent.

1.8 OBJECTIVES OF THE STUDY :

The objective of the present study is to access the impact of economic development on the various characteristics

of population. The economy has a complex influence on the pattern of population in any area. If the area has a dominance of industrial development, naturally it gives rise to different structure of population. Similarly the higher urbanisation also shows its impact on various aspects of population. Such as age structure, sex ratio, occupational structure, marital status etc. Considering these observations I would like to study how industrial as well as agricultural indicators of development show their impact on the changes in character of population in different area.

1.9 DATA BASE :

The study deals mainly with the population characteristics and economic development in Pune division. Most of its statistical analysis is based on census data, therefore data used in the present study are mostly collected from the secondary sources only. Various statistical abstracts and census volumes of 1981 and 1991 census of Maharashtra is used for analysis.

1.10 METHODOLOGY :

In the present study various methods and techniques have been used. The details of various methods and techniques will be discussed in the text wherever they are used. Only the mention of the various methods and techniques is made.

In the study of various indices of the district levels of development, parameters have been selected and calculated for composit index. For the functional analysis/ association of districts Doi's method is adopted. The association of variable has been tested through correlation analysis.

A special feature of the present work is use of the computer system. Relevant data used particularly for specific analysis are stored on Maxell floopy disket and some analysis are performed with the help of digital computer system.

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