CHAPTER II
GEOGRAPHICAL SETTING OF THE STUDY AREA

2.1 Introduction
2.2 Location
2.3 Physical Setting
2.4 Geological Structure
2.5 Drainage
2.6 Climate
2.7 Forest
2.8 Soils
2.9 Landuse Pattern
2.10 Cropping Pattern
2.11 Population Characteristics
2.12 Urban And Rural Population
2.13 Occupational Structure
2.14 Irrigation

References
CHAPTER II
GEOGRAPHICAL SETTING OF THE STUDY AREA

2.1 INTRODUCTION

Physical setting of any regions molds the human behaviour. Human behaviour is reflected in the form of socio-economic condition, transportation, distribution of settlements and levels of development. Geographical phenomenon, whether it is physical or cultural both go hand in hand. If one of this changes simultaneously, others are deflected from their original state.

The physical setting of any region is an important aspect, which plays a significant role not in influencing its history but also the climate, land use, means of transportation, distribution of settlements and distribution of population, etc. Therefore, the study of geographical setting in relation to man and his needs are vital (Singh, 1983)

Although, the study of physical elements deals with natural phenomena, people are always involved as evaluators, users and modifiers. When people till the soil, irrigate a crop, extract a mineral deposit, built shelters from the cold, dam or foul streams, starve from drought, clear the forests from half of countries, pour toxicous gases into the air, introduce new crops into a region or avoid huge sections of the earth as being too costly or to trying to handle, they are living with, and are a part of physical elements of the earth (Raman, 1994).

The physical setting of the study area decides economic setup. It is major base for economic activities. Economic activities change with corresponding to the variation in physical landscape. Hilly landscapes are not favourable for the development of various human occupations is like
agriculture, transportation and communication, trade and industry, etc. remain backward in hilly area. While, plain topography permutes various human activities, hence different human activities should have to develop in such topography.

2.2 LOCATION

The present study embraces hilly area of Kolhapur district. The study area is located in the extreme southern part of Maharashtra state. Kolhapur district has 12 talukas but researcher have selected only 8 talukas on the basis of hilly landscape. They are Shahuwadi, Panhala, Bavada, Radhanagari, Bhudargad, Ajara, Gadhinglaj and Chandgad. The study area lies between 15° 33' North to 17° 17' North latitude and 73° 40' East to 74° 33' longitude.

Table 2.1: Taluka Wise Geographical Area in sq km

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Talukas</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shahuwadi</td>
<td>1040.92</td>
</tr>
<tr>
<td>2</td>
<td>Panhala</td>
<td>567.29</td>
</tr>
<tr>
<td>3</td>
<td>Bavada</td>
<td>281.58</td>
</tr>
<tr>
<td>4</td>
<td>Radhanagari</td>
<td>890.10</td>
</tr>
<tr>
<td>5</td>
<td>Bhudargad</td>
<td>642.85</td>
</tr>
<tr>
<td>6</td>
<td>Ajara</td>
<td>547.51</td>
</tr>
<tr>
<td>7</td>
<td>Gadhinglaj</td>
<td>479.95</td>
</tr>
<tr>
<td>8</td>
<td>Chandgad</td>
<td>963.01</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>5413.21</strong></td>
</tr>
</tbody>
</table>

Source: District Statistical Abstract, Kolhapur District, 2009
Fig. 2.1
Four side boundaries of the study area are, Sangli district to the north, Belgaum district of Karnataka state to the south and east as well as Hatkanangale, Karveer and Kagal tahsils of Kolhapur district to the east and western side delimited by the Ratnagiri and Sindhudurg districts of Maharashtra state. The study area is compressed administratively into 8 talukas. The total geographical area of each taluka is shown in the following table.

The study area has total population of 12,99,252 persons, as per 2001 census. Out of that population, 96.90 per cent population inhabitant in rural settlements and only 03.10 per cent population living in 04 urban settlements. The population density of the hilly area of Kolhapur district is 241 persons per sq km and sex ratio is 997.

2.3 PHYSICAL SETTING

The physiography of the district is influenced by the geological complexities, which in turn influences the economic activities of the people (Deshpande, 1971). The study area occupies Sahyadri mountain range, which is extended north-south direction. Length of Sahyadri Mountain in the study area is 154 km from Warana River in north to Tilari River in south. The offshoots of the Sahyadri range starches south to east and north to eastward and average width is about 39 km.

Characteristics of the Western Ghat ranges, which spread towards east or stretch in the north-easterly direction, dividing the table-land into the numerous river valleys of different width and depth, rendering much of the land undulation, uninhabitable and uncultivable (Vocational Survey, 1980).
STUDY AREA
PHYSIOGRAPHY

INDEX
HEIGHT IN METER

- Below 750
- 750 to 900
- Above 900

Fig. 2.2
Western Ghat and its sub hilly range have an average height of 600 to 1000 m above MSL and also having various structural features. Such structural features are as hills rise in a series of terraces culminating towards the smite level, noted for its remarkably flat table-lands, separated by low saddles. The tops of these plateaus are formed from the laterite. Such topography is known as ‘Trap Topography’ (Kolhapur District Gazetteer). Traps topography can be observed at many places of Sahyadri ranges and hilly ranges of Vishalgad – Panhala, Phonda – Sangan, Bhudargad and Ajara ranges. The rivers have curved out the valleys leaving the harder and more resistant material as the residual hill ranges. The physiography of the entire study area can be divided into three categories on the basis of variations in heights as below –

a. Hilly Area (Above 900 m)
b. Foot Hilly Area (750 to 900 m)
c. Low Land Area (Below 750 m)

2.3.1 HILLY AREA (Above 900 m)

In the west lies the Sahyadrian water divider and running through the length of the Sahyadri lying in the study area from Malkapur tract in the north to Samangad in south and the finger ranges run to the east and north-east. The height is above 900 m continuously in Chandgad, Ajara and Gadhinglaj tahsils, this hill range is known as Chikodi hill range. Northern and central part of the study area such topography is distributed in patches form. In Shahuwadi and Panhala tahsil hilly area are known as Vishalgad and Panhala rang, at Radhanagari it is known as Dudhganga hill range.
2.3.2 FOOT HILLY AREA (750 to 900 m)

Foot hilly area is a part of hilly topography but it is demarcated by height. The foot hilly areas are separated by the intermediate valleys. These are developed on the Deccan lavas and form erosional remanets having a characteristic landscape, summit plateaus with rounded peaks above and structural benches below. The Panhala is the northernmost, one of the area emerging from the Vishalgad area of the Sahyadrian watershed. It runs first south-east ward and then almost run east. Most of the area of all talukas of the study area is occupied by this category.

2.3.3 LOW LAND AREA (Below 750 m)

Plain topography covered few portion of the study area. Low land area is comparatively more observed in Bhudargad, Ajara and Gadhinglaj. Most of the eastern part of the study area is under low land area.

2.4 GEOLOGICAL STRUCTURE

The study area comes within the area of the great Deccan Trap fields. The chief varieties of the study area are basalt, amygdaloid, vesicular and clayey, which with some few intertrappean sedimentary beds and numerous highly ferruginous clayey beds make up the great mass of the trap-flows. The lower flows are mostly basaltic in character, the medium flows are alternately basaltic and amygdaloid and the upper are chiefly basaltic capped by beds of clay and laterite.

The grandest section of the trap series is in the great western scarp of the great basaltic flows form long unbroken lines of cliff several hundred meters high. They may be best examined along the two roads one across the Phonda and the other across the Amboli pass. The cuttings along these roads give
almost perfectly continuous sections of the whole thickness of the trap-flows they cross. The iron-clay bed caps all the highest ridges and peaks in the hilly areas and may be called the summit bed.

Quartzite's and sand stones are found at Vatangi covered on three sides by the flows of the Deccan Trap series. They consist of quartzite's and grits, mostly dipping northward at low angels. They are best shown in the row of hill, which runs east, south-east from Sulgaon on the bank of the Hiranyakeshi River. The quartzite and grits are mostly pale coloured and fine grained and form a series of bed.

2.5 DRAINAGE

The study area is rich with well-developed drainage system. Sahyadri is a major water divider. Therefore, mostly all rivers of the study area originate in Sahyadri ranges in the west and run eastward direction (Fig. 2.3). The main rivers of the hilly area of Kolhapur district are Warana, Kadvi, Kasari, Panchganga, Kumbhi, Dhaman, Tulasi, Bhogavati, Dudhganga, Vedganga, Hiranyakeshi, Ghataprabha, Tamraparni and Tilari. All these rivers play an important role in changing cultural landscape of the area. So, the rivers are quite significant.

2.5.1 WARANA RIVER

The Warana takes its rise in the Sahyadri, about 68.28 km north of Kolhapur. Northern boundary of the study area is nearly 35 km demarcated in length. It flows with fairly straight south-east course and when she reaches in Panhala taluka, she flows eastward and enters into the eastern part of Kolhapur district. The chief feeders of this river in Shahuwadi and Panhala tahsils are as follows –
A. Kansa – The River Kanasa originate at Udgiri village and meets the Warana River near Malewadi. The length of this tributary is 19.31 km.

B. Kadavi – Kadvi takes its rise in hilly portion of Amba. Thereafter, it runs eastwards nearly 21 km and falls into the Warana River near Thergaon in Panhala taluka. Potphugi, Shali, Ambardi and Kandra are sub-tributaries.

2.5.2 KASARI RIVER

The Kasari is an important drainage system of the study area. It takes its rise in Western Ghat near village Gajapur, Shahuwadi taluka and flows east 80.47 km and joins the Kumbhi. During its course, the Dasari receives several minor streams of which the chief are Mangar, Jambhli and Gadavli.

2.5.3 KUMBHI RIVER

Kumbhi rise near Bavada and flow about 24 km north-east. Number of tributaries meet the course of Kumbhi but its major tributary is Dhaman.

2.5.4 TULASI RIVER

Tulasi river rises about 8 km east of Kumbhi and after north-easterly course of about 24 km. Then it falls into the Bhogavati river 12.87 km south-west of Kolhapur.

2.5.5 BHOGAVATI RIVER

Bhogavati River originates in Sahyadri at Phonda Pass and flows northerly. Length of this river in study area is about 45 km. The river Bhogavati joins the Tulasi River at Bid village of Karveer taluka.
2.5.6 DUDHGANGA RIVER

The Dudhganga River has its rise near the Nardava pass in the Bhudargad taluka. After a course of 32.18 km, it runs northeast direction. The river course is shallow and muddy.

2.5.7 VEDGANGA RIVER

The Vedganga take its rise near north of Rangana, and after a course of about 61 km to the north-east joins the Dudhganga. The bed of the Vedganga is shallow and muddy.

2.5.7 HIRANYAKESHI RIVER

The river Hiranyakeshi originates at the Amboli pass. It has an irregular northeast course of about 59 km in Ajara and Gadhinglaj talukas. The Chitri is a chief tributary of the river Hiranyakeshi, which rises near Aundi village of Ajara taluka. It follows the north-easterly course of about 16 km and it falls into Hiranyakeshi at Ajara.

2.5.8 GHATAPRABHA RIVER

The Ghataprabha takes its rise in the south slope of the Parpoli pass. It flows about 40 km north-east direction through the south of study area. The significant characteristic of this river is that its banks and bed are rocky.

2.5.9 TAMRAPARNI RIVER

This river takes its rise near Jambre of Chandgad taluka and flows northeast about 10 km then turned east. After nearly 13 km course it runs northeast and falls Ghataprabha river at west of Yaratanhatti.

2.5.10 TILARI RIVER

The study area includes very short course of the river Tilari, with its south-east boundary and about 10 km course are lying in the study area.
2.6 CLIMATE

The climate of the study area is monsoon type. There are four main seasons. The south-west monsoon season starts in June and ends in September. The second season is retreating monsoon season, which starts in October and ends in November. Third season is known as winter season from December to February. The fourth season is a hot weather season and its period is from March to May.

2.6.1 TEMPERATURE

The physiographic structure is an important factor influenced on the distribution of temperature in the study area. Therefore, Sahyadri is always cooler than the eastern part of the hilly area of Kolhapur district. The temperature is high in hot weather season i.e. up to 32.8 °C and lowest in winter season i.e. up to 19 °C.

2.6.2 RAINFALL

The study area gets most of the rainfall in south-west monsoon and retreating monsoon season. About 80 to 85 per cent of the annual rainfall is occurred in these six months i.e. from June to November. The average annual rainfall is 2875 mm. The rainfall is high in western part and it decreases towards the east.

2.7 FOREST

The land under forest varies form one taluka to another taluka. The land under forest of the study area is 28.04 per cent. It is observed that forest in the area is unevenly distributed on the basis of remarkable diversity of geographical factors especially physiography and climatic conditions.
RAINFALL INDEX

RAINFALL (in mm)
Low (600 - 1000)
Medium (1000 - 3000)
High (3000 - 5000)
Very High (Above 5000)

Fig. 2.4

INDEX
RAINFALL (in mm)
Low (600 - 1000)
Medium (1000 - 3000)
High (3000 - 5000)
Very High (Above 5000)
The wooded areas are confined to the western half of the tract. The western rim and its descending slopes claim a stunted type of evergreen forest. On the eastern fringes, the over-wood consists of deciduous species with ground-flora of evergreen species (Kolhapur Dist. Gazetteer). There are four major forest type distinctly located. They are as follows –

i. Sub – Tropical Evergreen Forest  
ii. Semi – Evergreen Forest  
iii. Moist – Deciduous Forest  
iv. Dry – Deciduous Forest

2.7.1 SUB – TROPICAL EVERGREEN FOREST

Sub-tropical evergreen forests are observed at the high rainfall areas in the extreme west of the study area. Such type of vegetation is scattered at Radhanagari–Dajipur, Gagan Bavada, Amba–Vishalgad and Ratagaon, etc. areal units. An accountable feature of these forests is in their original and dense form as per climatic climax species are grown upto their maximum height. The density and maximum elevation of trees did not permit the sunrays to reach the ground. Therefore, there are less availability of scrub and herbaceous species. Comparatively very few portion of the study area is under this type of forest. The composition of vegetation’s are locally know as Jambhul, Anjani, Hirada, Surangi, Panjambhul get mixed up with Pnansi etc. This forest is mainly confined to elevation ground nearly 750 m from MSL.

2.7.2 SEMI – EVERGREEN FOREST

The prominent existence of the semi – evergreen forest at eastern and south western part of the study area, particularly at Barki, Bavada, Chandgad, Tilari and Udgiri. Asana (Katak), Tupa, Ranphanas, Karambel, Bhava, Ain,
Warang, Kada, Nagkuda, Umber, Kokam, Ranbiba, Kadu, Kawata, Chandida, Nana, Kimkira, Shendri, Sarangi, Anjani, Jambhul, Hirda, Pisa, Kinjal and Makad Nimbu, etc. species are commonly distributed. In the other hand, Aisar, Kunti, Kadipatta, Narkya, Khul, Rometa, Rai{kuda, Katkuda, Karvi and Aatki, etc. scrub species are grown and developed in this forest type.

2.7.3 MOIST – DECIDUOUS FOREST

Moist–deciduous forests occupy the area of Ajara, Malkapur, Radhanagari, Gargoti and Gadginglaj. In this, forest Gela, Kunbha, Behada, Ain, Avia, Bahava, Modi, Dhhaman and Warang, etc. Types of trees and Karwand, Rameta, Fhngali and Bhandir, etc. scrubs are observed. Besides this herbaceous and climber vegetation, variety of grass are grown in this forest type. In this forest, particularly in Ajara and Mahal, are significant for scented wood species like Chandan occurs profusely. Bamboos are especially available in this area.

2.7.4 DRY – DECIDUOUS FOREST

The dry – deciduous forest are strewn far and wide in small patches. Such forest are distributed in eastern part of Nesari, Panhala, Shahuwadi and Gadginglaj. The chief composition of vegetation are Apta, Bel, Dhavda, Salai, Mohi, Biba, Charoli, Palas, Medhashingi, Bartondi, Ain, Hivar, White and raid Kheir, Waghati, Arali, Muradsheng Kari, Gitsaya, Kavli, Kusar, Anantmul, Ranjui, Utaran, etc. Types of trees and other scrubs and climbers are grown in this forest.

2.8 SOILS

The chief soils of the study area are generally derived from trap. The soil of this area can be classified into four categories. These are as follows –
2.8.1 DEEP BLACK SOILS

This type of soil is found in the study area along the right bank of Warana river. Deep black soil has occupied very few portion of the study area. It is more black in colour and more clayey. This soil is more fertile and very good for agricultural practices, such soil is amenable to irrigation and consequently paddy. The crops like sugarcane and vegetables are successfully taken from deep black soil.

2.8.2 MEDIUM BLACK SOILS

Medium black soil is found in two parts of the study area. The first area is in Shahuwadi and Panhala taluka and second area is observed eastern potion of Gadchinglaj and Chandgad talukas. Such soil is very considerable in depth and grey in colour with good granular structure and drainage. Because of these characteristics such soil provides best platform to agriculture.

2.8.3 SHALLOW BROWN SOILS

Shallow brown soil is observed in eastern part of northern portion and in southern portion it is available in the middle eastern zone of the study area. Such belt of soils stretches from north to south direction. This soil is dark brown in colour with reddish tint. It is fertile with an excellent granular structure. Sugarcane, oilseeds and vegetables are grown wherever irrigation facilities are available. Jaggary produce from sugarcane grown in these soils is well-known throughout the country.
2.8.4 LATERITIC SOILS

Lateritic soils occur in the western hilly tracts of heavy rainfall, on the hill tops and in the ridges which are not covered by forest. The lateritic soils mainly found in the western part of Bhudargad and Ajara and the whole of Shahuwadi, Panhala, Radhanagari and Bavada taluka. It is red to brownish-red in colour, mostly eroded and shallow with good drainage. The soils are acidic with low phosphoric contents and liming has been found to be beneficial.

2.9 LANDUSE PATTERN

Land and water resources play an important role in the overall development of any region. The proper utilisation of land and water resource of a region helps to achieve the desired level of development (Mathur and Binda, 1990). The taluka-wise information regarding the area under various categories of landuse in hilly area of Kolhapur district is used to study for general landuse pattern.

<table>
<thead>
<tr>
<th>Talukas</th>
<th>Area (in ha)</th>
<th>Land Utilisation (in Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Forest</td>
</tr>
<tr>
<td>Shahuwadi</td>
<td>104352</td>
<td>21.00</td>
</tr>
<tr>
<td>Panhala</td>
<td>56871</td>
<td>20.28</td>
</tr>
<tr>
<td>Bavada</td>
<td>28228</td>
<td>37.64</td>
</tr>
<tr>
<td>Radhanagari</td>
<td>89232</td>
<td>36.00</td>
</tr>
<tr>
<td>Bhudargad</td>
<td>64446</td>
<td>36.91</td>
</tr>
<tr>
<td>Ajara</td>
<td>54888</td>
<td>22.36</td>
</tr>
<tr>
<td>Gadhinglaj</td>
<td>48115</td>
<td>37.70</td>
</tr>
<tr>
<td>Chandgad</td>
<td>96542</td>
<td>28.08</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>542674</strong></td>
<td><strong>28.08</strong></td>
</tr>
</tbody>
</table>

Source: Socio-Economic Abstract of Kolhapur District, 2007-08
The study of landuse pattern is an important aspect to knowing the economic setup of region. Therefore, an attempt has been made to know the landuse pattern of the study area. It reveals that out of the total geographical area nearly 28.04 per cent land is under forest of the study area. Nearly 3.23 per cent land is not available for cultivation and cultivation waste land is about 6.84 per cent as well as follow land is an accounts of about 10.80 per cent. Nearly 51.09 per cent of total land is under cultivation. These figures of landuse indicate that agriculture is the main stay of the study area.

Taluka-wise data comparatively shows that Gadhinglaj taluka has maximum land under forest (37.70 %) as compared to other talukas. It is followed by Bavada (37.64 %), Bhudargad (36.91 %), Radhanagari (36.00 %), Chandgad (28.07 %), Ajara (22.36 %), Shahuwadi (21.00 %) and Panhala (20.38 %).

The landuse category, land not available for the cultivating reveals that the study area have 10.08 per cent land out of the total land. The Radhanagari tahsil reports maximum land of this category, which is 14.57 per cent, as well as lowest land is recorded in Bavada tahsil (4.54 %). The other talukas have land of this category like as Shahuwadi (13.02 %), Chandgad (11.83 %), Panhala (8.80 %), Bhudargad (7.12 %), Ajara (6.09 %) and Gadhinglaj (5.08 %).

The follow land is an important category of landuse pattern due to their nature and if man can apply his skills, then this land will be converted into agricultural land. In the study area, it is observed that there is 5.61 per cent land out of the total area under this category. Ajara tahsil has 18.98 per cent follow land and it is highest in the study area. The follow land in other talukas is observed 11.05 per cent (Panhala), 9.22 per cent (Bhudargad), 5.0 per cent.
The cultivable waste land is 10.80 per cent observed in the study area. The tahsil-wise distribution of such land are as Radhanagari (19.25 %), Shahuwadi (19.23 %), Panhala (12.48 %), Ajara (10.43 %), Bavada (9.27 %), Bhudargad (4.95 %), Gadhinglaj and Chandgad each have below 2.00 per cent land.

Net sown land of the study area clearly shows that the Radhanagari taluka has a lowest land under cultivation, which is only 35.83 per cent. While, it is maximum in Gadhinglaj taluka (87.99 %). The net sown area of other talukas is as 53.19 per cent (Chandgad), 47.29 per cent (Panhala), 45.98 per cent (Bavada), 45.47 per cent (Shahuwadi), 42.14 per cent (Ajara) and 41.79 per cent (Bhudargad).

2.10 CROPPING PATTERN

Agriculture is a major occupation of the people and it plays significant role in the economic setup of the study area. Differences in attitude towards the rural land, in the level of prosperity and in technology have produced changes in emphasis, which are only gradually coming to be appreciated, although in the long run their effects in both landscape and landuse studies are likely to be far-reaching (Coppock, 1968). The sets of the crops raised differ from place to place and there is wide gap in their percentage. In the most of situations, the physical environment reduces the choice of the enterprise, either by prohibiting the growth of certain crops altogether or by reducing their level of output to an unprofitable degree (Morgan and Munton, 1971).
In the study area, rivers like Warana, Kanasa, Kadavi, Kasari, Kumbhi, Tulasi, Bhogavati, Dhudhganga, Vedganga, Hiranyakeshi, Tamraparni and Tilari, etc. extended wide scope for agricultural development of their basin area. All these rivers generally run west to east direction. The fertile clay soil and availability of irrigation facilities gave impetus to agriculture produce. The hilly area of Kolhapur district has grown various crops. Table 2.3 and Fig. 2.3 gives clear idea about the cropping pattern.

**Table 2.3 : Cropping Pattern (2008-09)**

<table>
<thead>
<tr>
<th>Talukas</th>
<th>Cereals</th>
<th>Pulses</th>
<th>Sugarcane</th>
<th>Oilseeds</th>
<th>Other Crops</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shahuwadi</td>
<td>72.23</td>
<td>6.69</td>
<td>12.21</td>
<td>7.32</td>
<td>1.55</td>
<td>100.00</td>
</tr>
<tr>
<td>Panhala</td>
<td>50.98</td>
<td>5.73</td>
<td>24.88</td>
<td>14.78</td>
<td>3.63</td>
<td>100.00</td>
</tr>
<tr>
<td>Bavada</td>
<td>55.41</td>
<td>0.35</td>
<td>39.12</td>
<td>0.32</td>
<td>4.80</td>
<td>100.00</td>
</tr>
<tr>
<td>Radhanagari</td>
<td>65.39</td>
<td>4.16</td>
<td>14.40</td>
<td>11.77</td>
<td>4.28</td>
<td>100.00</td>
</tr>
<tr>
<td>Bhudargad</td>
<td>63.20</td>
<td>6.59</td>
<td>13.54</td>
<td>13.73</td>
<td>2.94</td>
<td>100.00</td>
</tr>
<tr>
<td>Ajara</td>
<td>54.85</td>
<td>9.37</td>
<td>7.23</td>
<td>21.13</td>
<td>7.42</td>
<td>100.00</td>
</tr>
<tr>
<td>Gadhinglaj</td>
<td>33.88</td>
<td>7.44</td>
<td>11.80</td>
<td>41.81</td>
<td>5.07</td>
<td>100.00</td>
</tr>
<tr>
<td>Chandgad</td>
<td>51.25</td>
<td>1.60</td>
<td>21.73</td>
<td>9.98</td>
<td>15.44</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>53.73</strong></td>
<td><strong>5.92</strong></td>
<td><strong>15.43</strong></td>
<td><strong>19.00</strong></td>
<td><strong>5.92</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

*Note: Figures in percentage*

*Source: Dept. of Agriculture, Zillah Parishad, Kolhapur*

The cropping pattern is studied with considering both kharip and rabbit crops. The cropping pattern reveals that the region is dominated by the cultivation of cereals. Out of the total cultivation land in the study area, 53.73 per cent land is under the cereal crops. Oilseeds rank second, which occupied 19.00 per cent of the total land. Sugarcane is third major crop covered an area
15.43 per cent. Pulses and other crops occupied 5.92 per cent each out of the total cultivable land.

In respect of cereals Shahuwadi rank first, which occupied nearly 72.23 per cent cultivated land out of their total cultivable area. Very less area of Gadhinglaj tahsil is under cereal crops (33.88 %). Remaining all talukas of the study area, like as Panhala, Chandgad, Ajara, Bhudargad, Bavada and Radhanagari have occupied land nearly 50.98 per cent, 51.25 per cent, 54.85 per cent, 63.20 per cent, 55.41 per cent and 65.39 per cent respectively by the cereals out of their total agriculture area.

Land under pulses is more in Ajara taluka (9.37 %), followed by Gadhinglaj (7.44 %), Shahuwadi (6.69 %), Bhudargad (6.59 %). While Chandgad taluka got only 1.60 per cent and very marginal land (0.35 %) is seen in Bavada taluka.

The number of drainage systems and along with rich fertile soils, irrigation facilities as well as favourable environment etc. influenced on the sugarcane cultivation. Therefore, sugarcane is an important cash crop in the study area. The taluka-wise area under sugarcane shows that 39.12 per cent area of Bavada tahsil is under sugarcane crop, followed by Shahuwadi (12.21 %), Panhala (24.88 %), Radhanagari (14.40 %), Bhudargad (13.53 %), Gadhinglaj (11.80 %) and Chandgad (21.73 %), while taluka report less area under sugarcane.

The second economical crop of the study area is oilseeds. The dominance of oilseeds is found in Gadhinglaj (41.81 %). The oilseeds have occupied nearly 21.13 per cent land of Ajara taluka. Shahuwadi, Panhala, Bavada, Radhanagari, Bhudargad and Chandgad talukas of the study area
cultivated oilseeds on 7.32 per cent, 14.78 per cent, 0.32 per cent, 11.77 per cent, 13.73 per cent and 9.98 per cent respectively.

2.11 POPULATION CHARACTERISTICS

Man is producer and consumer of the various economic resources. The rate in which economic resources of an area are utilised and it is determined by the number of human beings in that area (Singh, 1983). On the earth, surface human beings are the most important factors, their characteristics and diminution. Human beings are also modifying their environment but total environment situation depends upon the quality and quantity of the population (Jadhav, 2000).

Table 2.4: Population Characteristics – 2001

<table>
<thead>
<tr>
<th>Talukas</th>
<th>Area</th>
<th>Population</th>
<th>Density</th>
<th>Sex Ratio</th>
<th>Literacy</th>
<th>Population in Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Urban</td>
</tr>
<tr>
<td>Shahuwadi</td>
<td>1040.91</td>
<td>176859</td>
<td>170</td>
<td>1044</td>
<td>56.92</td>
<td>3.11</td>
</tr>
<tr>
<td>Panhala</td>
<td>567.29</td>
<td>238383</td>
<td>420</td>
<td>921</td>
<td>64.45</td>
<td>1.45</td>
</tr>
<tr>
<td>Bavada</td>
<td>281.58</td>
<td>32525</td>
<td>116</td>
<td>969</td>
<td>51.01</td>
<td>-</td>
</tr>
<tr>
<td>Radhanagari</td>
<td>890.10</td>
<td>188107</td>
<td>211</td>
<td>946</td>
<td>62.11</td>
<td>-</td>
</tr>
<tr>
<td>Bhudargad</td>
<td>642.85</td>
<td>144910</td>
<td>225</td>
<td>995</td>
<td>63.29</td>
<td>-</td>
</tr>
<tr>
<td>Ajara</td>
<td>547.51</td>
<td>121430</td>
<td>222</td>
<td>1082</td>
<td>60.36</td>
<td>13.93</td>
</tr>
<tr>
<td>Gadginglaj</td>
<td>479.75</td>
<td>216257</td>
<td>451</td>
<td>1016</td>
<td>62.85</td>
<td>11.73</td>
</tr>
<tr>
<td>Chandgad</td>
<td>930.01</td>
<td>180781</td>
<td>194</td>
<td>1033</td>
<td>57.46</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>5380.20</td>
<td>1299252</td>
<td>242</td>
<td>997</td>
<td>61.00</td>
<td>3.10</td>
</tr>
</tbody>
</table>

*Source*: Census of India, 2001

36
2.11.1 POPULATION DENSITY

The table 2.4 shows that the distribution of population varies from taluka to taluka in the study area. The population is less than 200 persons per sq km is found in Shahuwadi, Bavada and Chandgad talukas. The talukas like Ajara, Bhudargad and Radhanagari had 200 to 400 persons per sq km but population density is high in Panhala and Gadhinglaj talukas, which is more than 400 persons per sq km. The population distribution of the hilly area of Kolhapur district is influenced by the topography, fertile soil, availability of power resources and industrial and tourism centres.

2.11.2 SEX RATIO

The sex ratio is also an important aspect of the population. The sex ratio directly influences on birth rate and indirectly influences on the supply of labour. Considering these aspects, here attempt has been made to study the sex ratio of the study area. The sex ratio of the study area is 997 females per 1000 males. Low sex ratio, which is less than 950 to 1000 females per 1000 males are seen in two talukas of the hilly area of Kolhapur district. These talukas are Bhudargad and Bavada. Gadhinglaj, Chandgad, Ajara and Shahuwadi talukas are having more than 1000 sex ratio.

2.11.3 LITERACY

Literacy is a significant factor in the overall development of an area. The literacy rate of the study area is about 61 per cent. Low literacy rate has observed in Bavada, which is less than 55 per cent. Moderate literacy rate is found in Chandgad and Shahuwadi talukas, but more than 60 per cent these rate is observed in Panhala, Gadhinglaj, Ajara, Bhudargad and Radhanagari talukas.

2.12 URBAN AND RURAL POPULATION

Distribution of urban and rural population is very poor and uneven. The study area is having only 3.10 per cent urban population, while 96.90 per cent
population resides in rural environment. Panhala (1.45 %), Shahuwadi (3.11 %), Gadhinglaj (11.73 %) and Ajara (13.93 %) talukas have shown urban population. These talukas have also 98.55 per cent, 96.88 per cent, 88.27 per cent and 86.07 per cent rural population respectively. Talukas like Chandgad, Bavada, Bhudargad and Radhanagari show 100 per cent rural population.

2.13 OCCUPATIONAL STRUCTURE

The general occupational structure of the population shows that the area is backward, the population is engaged mostly in primitive occupation. More than 73.00 per cent of working population is engaged in primary sector whereas, there is only about 3.00 per-cent working force in secondary. This indicates the economic weakness of the population.

Table 2.5 : Occupational Structure (2001)

<table>
<thead>
<tr>
<th>Talukas</th>
<th>Primary</th>
<th>%</th>
<th>Secondary</th>
<th>%</th>
<th>Tertiary</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shahuwadi</td>
<td>64940</td>
<td>70.82</td>
<td>3126</td>
<td>3.41</td>
<td>23631</td>
<td>25.77</td>
</tr>
<tr>
<td>Panhala</td>
<td>83319</td>
<td>65.40</td>
<td>3799</td>
<td>2.98</td>
<td>40287</td>
<td>31.62</td>
</tr>
<tr>
<td>Bavada</td>
<td>14724</td>
<td>81.48</td>
<td>419</td>
<td>2.32</td>
<td>2927</td>
<td>16.20</td>
</tr>
<tr>
<td>Radhanagari</td>
<td>80173</td>
<td>75.85</td>
<td>3895</td>
<td>3.69</td>
<td>21628</td>
<td>20.46</td>
</tr>
<tr>
<td>Bhudargad</td>
<td>62737</td>
<td>78.42</td>
<td>2061</td>
<td>2.58</td>
<td>15203</td>
<td>19.00</td>
</tr>
<tr>
<td>Ajara</td>
<td>47067</td>
<td>75.53</td>
<td>2270</td>
<td>3.64</td>
<td>12981</td>
<td>20.83</td>
</tr>
<tr>
<td>Gadhinglaj</td>
<td>83264</td>
<td>72.11</td>
<td>3782</td>
<td>3.28</td>
<td>28426</td>
<td>24.61</td>
</tr>
<tr>
<td>Chandgad</td>
<td>75844</td>
<td>78.16</td>
<td>2495</td>
<td>2.57</td>
<td>18696</td>
<td>19.27</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>511768</strong></td>
<td><strong>73.38</strong></td>
<td><strong>21847</strong></td>
<td><strong>3.14</strong></td>
<td><strong>163779</strong></td>
<td><strong>23.48</strong></td>
</tr>
</tbody>
</table>

*Source : Kolhapur District Census Handbook, 2001*

According to the table 2.5, the study area mainly dominated by primary activities (73.28 %), while the situation of secondary activities (3.14 %) is seen
very poor. Besides that, 23.48 per cent population is engaged in the tertiary activities. On an average, all the talukas of the study area are having almost same kind of situation.

2.14 IRRIGATION

The irrigation played significant role in transforming the rural landscape of the study area. The development in lift irrigation, wells, canals, etc. sources played vital role in changing the cropping pattern of the hilly area of Kolhapur district. Moreover, the entire economy has been influenced by the development of irrigation from last four decades, which in turn brought some prosperity to the area. The table 2.5 shows in detail about the land under irrigation and the sources of irrigation.

The irrigation is regarded as an integral part of sound infrastructure and is one of the basic ingredients of agricultural activities. The availability of adequate irrigation facilities transforms the subsistence agricultural landscape gradually into commercial one making agrarian economy market oriented (Pawar, 1989).
The table 2.6 shows the irrigated area of the hilly area of Kolhapur district. Very less and negligible area comes under the influence of other sources of irrigation. These other sources are directly or indirectly related to the rivers. The other sources of irrigation are included in river irrigation. Though, the river is considered as combined river and other sources of irrigation. The scenario of the study area shows that 25.08 per cent land is irrigated out of the total cultivable land. In it 57.31 per cent (river) and 42.69 per cent (wells) are occupied by irrigated land.

The tahsil-wise distribution of irrigated land shows that Ajara taluka had 67.79 per cent river irrigation and got rank first. Panhala (67.06 %), Bhudargad (62.27 %), Shahuwadi (59.86 %), Chandgad (56.85 %), Radhanagari (55.72 %), Bavada (55.17 %) and Gadhinglaj (37.46 %) land under river irrigation.
Gadhinglaj taluka of the study area has got more importance for well irrigation because it covers nearly 62.54 per cent irrigated land. The land under well irrigation is from Bavada (44.83 %), Radhanagari (44.28 %), Chandgad (43.15 %), Shahuwadi (40.14 %), Bhudargad (37.83 %), Panhala (32.94 %) and Ajara (32.21 %) out of their total irrigated land.

The total irrigated land with proportion to total cultivated land is very less observed in Chandgad (12.19 %), Ajara (14.37 %), Panhala (14.45 %), Shahuwadi (23.93 %) and Gadhinglaj (24.75 %) but in the other talukas like Bavada (60.33 %), Radhanagari (31.63 %) and Bhudargad (25.67 %) irrigated land is higher than the study area.

REFERENCES

Agricultural Department, Zillah Parishad, Kolhapur

Census of India, Kolhapur District, 2001 (CD)


Deshpande, C. D. (1971) : 'Geography of Maharashtra', N. B. T., India, New Delhi, pp.35-48

Forest Department of Kolhapur District, 2009

Gazetteer of Kolhapur District, 1999, pp.3-17


Raman, B. S. (1994) : 'Regional and Economic Geography of India' --?--

Singh, G. (1983) : 'Geography of India' --?

Socio-Economic Review of Kolhapur District, 2005-06, 2006-07 and 2007-08