

## **CHAPTER III**

### **PROFILE OF SATARA DISTRICT**

#### **3.1 Introduction**

The study area is one of the district of Maharashtra States. Satara District is situated in the Nira and Krishna basin and lies between 17<sup>0</sup>s' to 18<sup>0</sup>11' north latitudes and 73<sup>0</sup>33' to 74<sup>0</sup>54' east longitudes and cover an area of 10484.89 sq km. This area is 3.4 percent of the Maharashtra state.

The Satara District lies in southern Maharashtra. The Satara district has component shape with an east-west stretch of about 144 km and south-North 120 km. the Satara district is boarded by Pune district on the whole of the northern side, by the Sangli district on the south-east; Solapur district on east and Ratnagiri district on the west. The district administratively consist 11 tehsils namely Phaltan, Man, Khatav, Koregaon, Satara, Karad, Patan, Jaoli, Mharableshtar, Wai and Khandala. For administrative purpose satara district divided into four sub-divisions Mahabaleshtar, Satara, Phaltan and Patan.

#### **3.2 Administrative units**

The Satara District consists of 11 tehsils namely Phaltan, Man, Khatav, Koregaon, Satara, Karad, Patn, Jaoli, Mharableshtar, Wai and Khandala. Administration is divided into four sub-divisions Mahabaleshtar, Satara, Phaltan and Patan.

Mahabaleshtar, Karad, Satara, Wai, Phaltan these are the important urban places of Satara District, Satara is an important historical, educational and Commercial District.

According to the 2011 census; District includes 1719 inhabited villages. The Study region has 30.04 lakh population and out of total population 3, 23,236 scheduled caste, Comprising of 1, 61,703 males and 1, 61,533 females.

**Table 3.1****Satara District: Administrative Units**

<b>Sr. No</b>	<b>Name of sub divisions</b>	<b>Name of Tahsil</b>	<b>Area sq.km</b>	<b>No of Villages</b>	<b>No. of Towns</b>
1	Satara	Satara	876.2	205	5
		Jaoli	869	153	1
2	Koregaon	Koregaon	957.9	138	2
3	Wai	Mahableshwar	378.9	110	2
		Wai	622.6	126	2
		Khandala	523.72	65	1
4	Phaltan	Phaltan	1179	125	2
5	Man-Khatav	Man	1449	104	1
		Khatav	1218	139	0
6	Karad	Karad	1084.8	216	5
7	Patan	Patan	1320.9	338	1
	<b>Satara District</b>		<b>10480</b>	<b>1719</b>	<b>22</b>

**Source:** District socio-economic review of Satara 2013

**3.3 Histroy of the Satara district**

During the tenure of chhatrpati Shahu Maharaj Satara remained the Capital town of Maratha Empire. Satara district has rich heritage. Several great warriors, kings, Saints and great personalities create their historical evidence in the history. Inscriptions as old as 200 B.C observed that probably the oldest known place in Satara is karad it was mentioned as Karhakada. It is also believed that pandavas lived in the 13<sup>th</sup> year of exile at wai in Satara district, it was known as ‘Viratnagari’. The Mauryam empire in the Deccan was followed by the rules of “Satvahans’ for about two centuries, Satara also was ruled by chalukyias of Badami and was later by Rashtrakutas, Silaharas and Yadav of Devgiri the Bahamanis, Adil Shahi, Muslim Rule, Shivaji, Shahu, Ram Raja and Shahu – II Pratapsinh. During the period of 1296; first Muslim invasion of the Deccan took place. Muslim ruled over Satara till 1707. The Nijam Shahi Dynasty came to an end in the period of 1636.

Rashtrakutas is the oldest ruling Dynasty of Satara from 350-375 CE king manak ruled at Satara and made his capital maanpur (Now Man in Satara district) a type of parallel government known as prati sarkar came into existence during the independence struggle under the leadership of Krantisinha Nana Patil., the people of Satara; ousted the British officials and took power into their hands. The word Satara came in to existence from the seven hills surrounding the city. Saat meaning seven in Marathi and tara meaning hill, thus forming the word 'Satara'. The seven hills are Ajinkyatara, Sajjangad, Yawateshwar, Jarandeshwar, Nakdicha Dongar, Kitilicha Dongar and pedhyacha Bhairoba. In 1948 the Satara district consists of 11 subdivisions these sub divisions are Jaoli, Karad, Khanapur, Walwa, Wai and Bijapur was transferred to Belgum district. In 1864 Pandharpur tehsil was transfer to solapur district and Tasgaon tahsil was transferred to Satara District. In 1949 a new Phaltan tehsil was formed. Satara district was bifurcated into north Satara and South Satara in the Year 1949.

### **3.4 The face of Satara district**

The face of study area constitutes the physical environment which determines population characteristics. Population characteristic influence by different relief features drainage, its geology and climate soils, vegetation, slope and industries.

#### **3.4.1 Physiography**

Widely, Satara district is divided into four physiographical divisions they are as follows. Physiographic division includes area with the altitude of 900 to 1200 m. and above.

##### **1) Sahyadri hilly region**

The major portion of the Sahyadri ranges runs in west side of the Satara District. There are Mahabaleshwar, wai, Jaoli, Patan.

##### **2) Easten hilly region**

Khatav and Man tehsils are included in eastern hilly region

### 3) **Knishna river basin region**

Krishna river basin comes under the central part of the district. Krishna and its tributaries spread over the Karad, wai, Satara and Koregaon tehsil.

### 4) **Nira river basin region**

The Nira River running in the northern boundary of Satara district in which Khandala and Phaltan tehsils are included.

#### **A) The Sahyadrian System**

The Sahyadrian system is the main range of Sahyadri, which has a total length of 196 km. Sahyadrian system stretches out from north to south to the western boundary of the district within Satara limits. Sahyadrian system includes several hill stations i.e. Mahabaleshwar (1436m), Makarandgad (1229m), Yevateshwar (1340 m), and Pratapgad (1074m) there are some saddles in the Sahyadrian system, which provide the location for ghat routes. Along these ghats there are many passes, Kumbharli pass, Ambinali Pass, Tivara Pass, Mala Pass, Per Pass etc. In these passes Kumbharli pass and Ambinali pass is major pass route joining plateau to Konkan.

#### **The leading spurs of the Sahyadries**

There are five spurs pass east and south-east from the Sahyadri namely Kamalgad, Viratgad, Hatagegad-Arle, Bamnoli-Gherategad range and Bhaivargad-Kandur range.

##### 1) **Kamalgad**

Kamalgad starts from Sahyadries near 8 km north of Mahabaleshwar. Kamalgad divide water between Valchi on the north and Krishna on the south.

##### 2) **Viratgad**

It passes south east to about 30 km and ends near Viratgad. It creates water divide between the Krishna on the northeast and the Kundali on the south west.

##### 3) **The Hatagegad –Arle**

It passes about 50 km up to Arle and creates water divide between Kundali on the northeast and Venna on the southeast.

#### **4) Bamnoli range**

Bamnoli range Satara from Mahabaleshwar plateau and stretches southward about 60 km. It divides the water between Venna in the north – east and Koyana River in the Southwest. There are three spur in the Bamnoli range.

##### **A) Satara spur**

This spur starts from Kelghar and runs about 24 km up to Satara and then 20 km eastward to Varne it creates water divide between Venna on the northeast and Urmodi on the southwest.

##### **B) The Kelvali- Sonapru Spur**

This spur is irregular in shape. It starts near kelvali and runs about 20 km to Nagthane. It creates water divide between Urmodi on the northeast and the Tarali on the southwest.

##### **C) Jaoli-Vasantgad spur**

This spur leaves main Bamnoli Gheradategad range about 15 km south of kelvali and runs to vasntagad. It creates water divide between Krishna and the Mand on the north side and the Koyna on the Southwest.

#### **5) The bhairavgad – Kondur range**

This spur is actually belongs to the Sangli District. But several branches from this spur covered the southwestern corner of the Satara district.

It is found from above analysis; the physiography of the western part of the Satara district is entirely hilly and interrupted by well developed river valleys.

##### **B) Mahadeo hills**

Mahadeo hills run eastward and southeast direction. Mahadeo hills stretch in an irregular line towards east. It has three sub-ranges.

##### **1) The chandan – vandan spur**

This starts at Harli and runs towards south direction 20 km to Chandan and Vandan fort and from then about 16 km further up to Mahuli. This spur creates water divide in between the Vasna valley on the east and Krishna valley on the west.

## **2) Vardhan gad**

This range starts from village mol and runs towards south direction through the entire length of the district. This spur creates water divide between Vasana, Vangna and other direct tributary of river Krishna on the west.

## **3) The mahimangad**

This spur starts from the starting point of the vardahngad and runs toward southeast direction of Sangli district. It create water divide between the Yerla valley on the southwest and Man valley on the northeast.

## **4) Man plateau**

Man plateau lies between shikhar shinganapur range and main mahadeo range.

### **3.4.2 Relief Divisions**

On the basis of altitude above mean sea level, district can be divided in following three relief divisions.

#### **a. Hills and Ghats**

This physiographic division includes area with the altitude of 900 to 1200 m. and above major area under this division covers the western part of the district form the tehsil Mahableshwar to Patan. This area comprise of scarps of Sahyadri and steep ballistic walls. A large area of this division is covered by thick forest. Proportion of area under cultivation is small due to the hilly topography

#### **b. Foot hill zone**

The central and eastern part of the Satara district area having height between 600 to 900 meters covered this division. This division occupies 29.12 percent area of the Satara district. Form the main ranges of Sahyadri and Mahadeo several hill ranges run to the east and south-east direction. This relief division covers relatively uniform area in all parts of the Satara district, except Mahabaleshwar tehsil. The eastern part is covered by the scrub and grasslands and the central part of this division occupied deciduous forests.

### **c. Plain area**

This physical division includes an attitude below 600 meters; major portion of this division is covered by the river valleys and tributaries of Satara district. Medium deep black soil prevailing in this division this division is agriculturally well developed having large population.

### **3.4.3 Drainage**

The Drainage Pattern of any geographical area is influenced by socio-economic life of society. It is necessary to study drainage pattern to bring out change in the consumption pattern. The variation in the relief characteristics of Satara district has influenced the drainages pattern. There are many rivers such as Koyana, Krishna, Venna, Uasana, Kudali, Tarali, Urmodi, Yerala, Nira, Manganga and many other smaller tributaries drain in the Satara district. The Physiography of the district is responsible for separation of two drainage system in the study area. These two basins are Krishan Basin and Bhima basin.

#### **A) The Krishna river basin**

On the basis of Physiography Satara district is divided into two divisions by the Mahadeo range. The Krishna basin is the main and important drainage of the Satara district. Krishna river has its originate source at just north of the hill station of Mahabaleshwar at the height of about 1500 meters and it flows toward south direction. Kudali, Urmodi, Venna, Vasana, Yerala, Koyana and Tarali are tributary feeders. Total length of Krishna River is 176 km of which about 36 km lies in Satara district. From its originating source at Mahabaleshwar, Krishna River runs toward east direction about 24 km and reach at Wai, at about 3 km south of Panchwad, Kudali Joins Krishna. After meeting Kudali tributary, the Krishna River continues to flows towards South-direction through the Satara Sub-division and joins the Venna River near Mahuli sangam. At Koregaon the Krishna join the Vasna, from left; near Mangalpur and then in the South of Satara Sub-division it joins the Urmodi near Venegaon. In Karad teshil the Krishna River flows nearly toward South direction. In this course it joins the Tarali near Umbraj and Koyna near Karad. From Karad it runs for about 50 km and then enters the limits of the Sangli

district. The Krishna River is not navigable in the Satara district because the channel is too rocky and rapid. The banks are 8-10 m high. In some parts of basin the river bed is sandy and rocky.

### **Main feeders of river Krishna in Satara district**

#### **1) River Kudali**

River Kudali is a small feeder of Krishna basin. River Kudali originate near Kedambe in Jaoli and runs towards southeast direction, in between Vairatgad spur and the Hatgegad-Arle spur for about 20 km. it receives to Krishna River near Panchwad.

#### **2) River Venna**

River Venna originate at the Mahabaleshwar Plateau and run in to the vend valley formed by the Hatgegad-Arle range and Satara ranges. It runs through this valley in towards south eastern direction for about 40 km and meets the Krishna near Mahuli sangam. Recently a dam has been constructed on the river Venna near Vennanagar to check the floods and store the water to form the reservoir which supports tourism development, agriculture in the western part of the Satara district.

#### **3) River Urmodi**

The Urmodi River originates near Kas village from the Jaoli teshil and flow in southeast direction along the valley flanked by the Satara range and Kalvali Sonapur range. Urmodi River receives Krishana River near Vanegaon. The Urmodi is a minor feeder of Krishna Riversmall dam has been constructed across Urmodi river near Kas village for supplying drinking water to Satara city from water of Kas.

#### **4) River Tarali**

Tarali River is a small river in the Krishna basin. Tarali River originates near Tarali village and run in south-east direction along the valley flanks. The river runs along with a southeastern cources of about 35 km and receives Krishna near Umbraj. A small dam has been constructed on the Tarali River for irrigation purpose.

### **5) River Koyna**

River Koyna is the largest tributary of Krishna basin, Koyna originates on the western side of Mahabaleshwar plateau. Its length is 130 km in Satara district. Koyna River flows nearly southward through a deep valley with the main line of the Sahyadri and the Bamnoli Gheradalegad branch of Sahyadri. This valley reported highest rainfall in Satara district. The Koyna River joins the Solshi River from the left and the river Kendati from the right side near to Bamnoli. Near Helvak after running of 60 km the river turns toward east direction. Afterward the river joins the river Kara from the north and the river Morna and river Vang from south. Koyna River receives the Krishna River near Karad. Shiv-sagar dam has been constructed on the Koyna River, keeps huge water storage in the narrow valley, which has helped to irrigate the land in southern Satara. Thus Koyna River has become the life line of Western Maharashtra because the Koyna hydro-electricity project has been generated on the Koyna River.

### **6) River Vasna**

River Vasna is a small tributary of Krishna. It originates in the Mahadeo range near Solshi and runs towards south direction along a valley flanked by Chandan-vandan range and the Vardhangad range. It flows toward south direction about 30 km and receives Krishna River.

### **7) River Yerla**

River Yerla originates in Sokanath hills and runs along a valley flanked by the Vardhangad and the Mahimangad ranges. It flows for about 23 km through Khatav taluka of Satara district.

## **B) The Bhima Basin**

The drainage system of Satara district is shared by Bhima river system.

### **Main feeders of river Bhima in Satara district**

Nira and Manganga rivers are two chief tributaries of Bhima River, draining northern and eastern part of Satara district.

### **1) River Nira**

River Nira originate in the Sahyadri ranges near Bhor in Pune District. Nira runs along the northern boundary of the Satara district. The Nira River has been occupied great economic importance because of Vir and Bhatghar Dam, from which Nira right and leftbank canals supply water to Phaltan and Khandala tahsils of the Satara District.

### **2) Manganga river**

Manganga River rise in seetabai hill near Kulkajai village in Man tehsil. The total range of Manganga River is 160 km out of which about 56 km lies in Satara District. In Satara district the river flows in south-east direction touching the villages Kulkjai, Malavadi, Andli, Bidal, Dahiwadi, Gondawale bank, and Mhaswad. The river banks are highly eroded and the river bed is sandy. The river Manganga receives to Bhima at Sarkoli village in Pandharpur tahsil. The Bhima basin comes in rain shadow area because of scanty of rainfall, scarcity of water, comparatively high temperature in summer season and infertile soils, this area is not suitable for agriculture.

### **3.4.4 Climate**

The climate of the Satara district is monsoon type. Climate of Satara district plays an important role and influences on settlement of consumption pattern and agriculture. The climate of Satara district is considered as one of the important geographical population and economics activity of the man.

Various elements of climate like temperature, rainfall, humidity and wind affect the human life. Among them temperature and rainfall exert more influence on the consumption pattern and distribution of population. The climate varies considerably in different part of the Satara district. The seasons should have considerable uniformity in the entire parts of the Satara district.

### **3.4.5 Temperature**

June to September is rainy season of the Satara district. Monsoons arrive in the Satara district around second week of June. The rainiest months are July and August; rainfall is widely distributed during the rainiest months.

Rainy season reported lower temperature than cool season. Climatic conditions start changing from the end of month September. Temperature starts to rise, wind direction is mainly from north-east and east; and day is quite warm. Temperature continuous rise from March and month of May is generally reported as a hottest month of the year. There is an appreciable drop in temperatures with the onset of the monsoon. Temperature again rises in October with the retreat of monsoon. During the month of December the mean temperature remain low 35<sup>0</sup>c is the average annual temperature varies from 34<sup>0</sup>c to 36<sup>0</sup>c during the summer season the month of December and January are slightly severe and quite fair and the temperature varies from 10<sup>0</sup>c to 12<sup>0</sup>c. The month December and January recorded coldest month of the year. Early in the morning, fog is the common climate phenomena of this winter season. 6000 mm is the average rainfall in the Satara district. The western part of Satara district reported highest rainfall which is more than 6000mm while the eastern part of the Satara District receives lowest rainfall which is less than 500 mm. The amount of rainfall in the Satara District goes on decreasing from west to east. It is possible to divide the district into three broad regions on the basis of rainfall. The central area has a regular rainfall. The eastern belt is irregular and uncertain which receives lowest rainfall. During the southwest monsoon season from June to September receives about 85% of the annual rainfall in the Satara district. Month of July reported as a rainiest month. Some rainfall occurs in the form of thunderstorm during the pre and post monsoon months. In the month of May the mean maximum temperature recorded in Mhaswad 37.2<sup>0</sup>c, 33.50c at Karad and 31.5<sup>0</sup>c at Mahableshwar.

The western mountains tehsils namely Mahableshwar, Patan, Wai and Jaoli recorded 2500 mm to 6000mm rainfall. This western mountains tehsils can be called heavy rainfall zone. In this area, the rainfall decreases rapidly from western part towards the eastern side. The central plain Tehsils namely Satara Karad and western part of Koregaon have been recorded moderate rainfall tehsils, which receives 1000mm to 2500mm precipitation. Rainfall decreases towards west to east in the central plain zone.

The north eastern part of the Satara district namely Phaltan, Khandala, Man, Khatav and eastern part of Koregaon tehsil recorded 500 to 1000 mm.

rainfalls and lies in the eastern low rainfall zone. Eastern part of the Satara District recorded as drought prone area, which lies in the rain shadow area, Eastern Part of Man, Khatav and Phaltan tehsils recorded rainfall below 500 mm. these drought prone areas suffer from shortage of drinking water.

Seasonality is an important feature of the rainfall in the Satara District. The Satara District received 70 to 90 percent of the mean annual rainfall during south west monsoon periods from June to September. Rainfall is very less throughout the District during the cool season from October to January maximum rainfall over 8 percent is received and distribution is unequal during the hot season. In hot season the rainfall occurs with thunderstorms and heavy rain or hails.

The above explanation of seasonal distribution of rainfall revealed that the rain is insufficient in the north eastern parts and adequate in central and western part of the Satara district.

### **3.5 Soils**

The Variation in soil may result in variation in consumption pattern due to local variation in land use and in turn of population distribution. Condition of soil and agricultural development are closely associated with consumption pattern. Relief nature of Parent rocks, climate and vegetation influence the nature of soil. The higher fertility of soils is good for agricultural and therefore regions having more consumption. Population densities and consumption is low due to thin layer of soil over slopes. Crop growth depends upon soil structure, colour, thickness and texture organic matter, inorganic matter and water in the soil are necessary for the agriculture. The development of soil depends upon climate, land utilization, physiographic, parent material and living organism. The variation in soil colour, texture, fertility, organic matter, inorganic matter and water in the soil may result in local variation land use and in turn of consumption pattern.

#### **3.5.1 Coarse shallow soils**

The coarse shallow soil is present in the off shoots of the Sahyadri and Southern flanks of Mahadev ranges. This type of soil is found in the forest in

Mahableshwar, Jaoli, Patan and western part of Satara tahsil. The coarse shallow soil also occurs in central and eastern part of the Satara District. The soil is extremely poor and shallow in the Man tahsil, Khatav tahsil and eastern part of the Phaltan tahsil.

### **3.5.2 Laterite soils**

Laterite soils presents in Mahableshwar Patan, Jaoli and western part of Satara tahsil. The laterite soil is of reddish colour, due to presence of excessive iron oxide, shallow in depth. Tambadi mati is the local name of laterite soil. Lateritic soil is classified as deep and medium laterite soils.

### **3.5.3 Deep laterite**

The deep laterite soil is present in Koyana river villages. Deep laterite soils are suitable for cultivation. The deep laterite soils is present in the upper reaches of all the right bank tributaries of Krishna. Rice is the major crops cultivated in this zone.

### **3.5.4 Medium deep laterite**

Medium deep laterite soils are present in the river valley and plateau top and covered long area. Medium deep laterite soil is most useful for agricultural.

Laterite soil covers 2500 sq km in the Satara District. These soils zone is mainly under rice and ground nuts production.

### **3.5.5 Black soils**

Black soil is present in central northern and eastern part of the Satara district. This soil occupied 7972 sq area of the Satara district. The colour of this soil varies from brown to dark black and occurs in various depths. The Black soils are classified in two categories i.e. deep and medium black soils.

### **3.5.6 Deep black soils**

The deep Black soil is present in closely to river of Krishana, Verla and Nira Valley. This soil covered central part of Wai, Satara, Karad and

northern part of Phaltan tehsil. High water holding capacity is present in deep black soils. This kind of soil contain less nitrogen but high percentage of phosphate and potash as well as high percentage of calcium carbonate.

### **3.5.7 Medium black soils**

Medium black soils covered all region of Satara district except Mahabaleshwar tehsil these types of soils occurs in less amounts in the Patan and Jaoli tehsil. As compare to deep black soils the medium black soils are thinner and less fertile and cover central part of Satara district. Due to less fertility these soils require irrigation facilities.

### **3.6 Settlement pattern**

Our country is dominated by agrarian economy and most of the population is concentrated in rural settlements. The studies of settlements are necessary to discuss the consumption pattern of particular region.

Settlement covered some space at a particular point of time. Study of settlement form is the necessary theme of human activities. Distribution pattern of settlement is influenced by physioigraphy and agricultural practices.

Seven urban settlements are prevailing in the Satara district namely Karad, Wai, Phaltan, Mahableswa, Satara, Patan, Koregoan. These all urban settlement are administrative centre. Major market center are Karad, Wai and Phaltan; Satara is a major industrial center. Mahableshwar is health resort centre, where as Patan and Koregoan are another important urban centers.

According to 2011 census there are 1721 rural settlements in the Satara District. The table shows tahsil wise distribution of urban and rural settlement. Jaoli, Khatav and Man are also administrative center of tehsil large size of rural settlement is found in the river Krishna and Nira basin and small size of rural settlement is prevailing in the eastern part of the Satara district. Western hilly ranges also cover small number of rural settlement. The western part of Satara district observe compact settlement pattern. Agricultural settlements are found in large number of villages. Thus above explanation observed more settlements in the Satara District.

### **3.7 Transport network**

Population concentration and urbanization are closely linked with transport activities. Development of transportation facilities play important role in increasing the capacity of the region to the support the population.

Transportation also plays a significant role in influencing consumption Expenditure pattern of population. Due to ease of transportation, population densities are high in low-lying flat areas and costal plains and population density is very low in hilly area. Due to transportation facilities mobility of commodity, person increases, transport facilities expand and commerce and minimize the difficulties of movement. Urban growth is concentrating in large cities and town due to development of the modern transport system.

The Satara district has relatively good network of transport. 10451.14 km is the total length of the Satara district, average density of Satara district per 100 sq km as 99.61 km.

The national highway No.4 having a length of 124 km passes through the Satara district and Satara-Mahableshwar-Mahad, Phaltan-Miraj, Pune-Mahableshwar-Mahad, Mahableshwar-Pandharpur and interstate Vijapur-Chiplun highway passes through the Satara district. From north to south about 124 km Pune-Bangalore broad gauge railway line passes through the Satara district. Lonand, Wather, Satara, Koregaon, Rahimatpur, Masoor, Karad are the important railway stations on this railway line from north to south.

### **3.8 Occupational structure**

In economic Life occupational structure of any area is more important. The working class people play a significant role in development of the region. In the Satara District, 69.89 percent population is engaged in agricultural activities and around 30.09 percent population engaged in mining, manufacturing, maintenances, construction, trade and commerce, transport and other activities.

### **3.9 Forest**

Forests play an important role in the consumption pattern of society. Greenery, wildlife attracts people from crowded cities; so forest affect consumption pattern of society. Satara district covered 1277.92 sq km forest is reserved; 47.90 sq.km forests is protected. 50.04 sq km forest come under unclassified forest Eastern part of Satara district covered by the sparse to scanty vegetation, where as relatively dense vegetation prevailing in western part of Satara district. It consist of trees, herbs and shrubs, grassed covered valley plain, vegetation comprise of tree such as Mango, Jambhul, Bamboo, Jackfruit, herbs, shrubs, weeds and grasses are mostly covered the valley flats, gently sloping ground and on the flat ridges. The sparse vegetation of xerophytes and dry deciduous type vegetation covered eastern parts of Satara district.

The five types of vegetation are prevailing in the Satara district. These are sub-tropical hill forest, Semi-evergreen forest, moist mixed deciduous forest, dry mixed deciduous forest and dry teak forest etc.

#### **A) Sub – tropical hill forest**

Sub-tropical hill forest is present in Mahabaleshwar, Patan, and Man tehsil. This area received rainfall is up to 2500 mm, Phyllanthus, syzygium, monecydon, actinodaphne, terminalia these types of species available in this area.

#### **B) Semi – evergreen forest**

This forest is present in Mahabaleshwar, Patan and Man tehsils of Satara district. This area received rainfall more than 2000 mm, Cassia, fistula, diospyros, gmelia aborea, actinodaphne angustifolia these type of species available in this forest.

#### **C) Moist mixed deciduous forest**

This forest is found in lower part of Man and Patan tehsil. As well as it is found in western part of Satara and Khandala tehsil. This area is received rainfall between 1250 to 200 mm.

#### **D) Dry mixed deciduous forest**

This forest is observed in the central part of the Satara district. The western part of Karad and Satara tehsil is occupied by this type of forest. This area reported rainfall between 750 to 1500mm.

#### **E) Dry teak forest**

This type of forest is found in Man ranges in Ghotil, Kalgaon, Salve, Dara and Kaner villages. This area receive rainfall less than 750 mm. Kasali, Pavana, dongari, marvels are type of grasses found in this area. Maytens, rhus, mysorensis and eupharbia, neriifolia such type of species found in this forest. Timber, fire-wood and char coal are produced by this forest.

### **3.10 Industries**

The agriculture is the main occupation in the Satara district. Due to heavy monsoon rice is the prime product of the western part of Satara district. The sugar factories are situated in the river basin due to major production of sugar cane in the river basin. The sugar factories are located in Satara district. These factories are located in Phaltan, Karad, Yashwant nagar, Bhunij. Shendre, Marali (Patan), Sakharwai, Chimangaon, Songaon and Rether Budruk etc.

Some oil mills are located in the Satara district due to major production of groundnut and other oil seeds. These oil mills are located at tehsil places such as karad, Koregaon, Satara and Phaltan. Twenty–seven agricultural processing centers located in Satara district.

Another major subsidiary occupation of the people is dairy industry. There are 855-co-operative milk collection centers in the Satara district as well as 22 fisheries co- operative societies. Due to governmental facilities, poultry industries are also growing up in Satara District. There are 1114 micro enterprises, 2049 small scale enterprises 14 medium scale Enterprises, 56 large scale enterprises prevailing the Satara district. Micro scale enterprises generate 11331 employment, small scale enterprises generate 29833 employment medium scale enterprises generate 1360 employment and large scale enterprises generate 15592 employment in Satara District. Different types of

industries are situated at Satara, Karad, Phaltan, Shirwal, Wai and other places.

### **3.11 Land use and cropping pattern**

Land use and cropping pattern has got importance in the consumption pattern of the Satara District. Consumption pattern and human activities are depending on land use, socio-economics picture and the status of community indicates by land use pattern.

The total geographical area of Satara district is 1058243 hectares about 58.28 percent area is under cultivation out of the total geographical area. The economy of the Satara district is depending upon the land under cultivation; so the agricultural activity in the Satara district is very important. Western part of Satara district cover 24.20 percent forest on the other hand eastern part of the Satara district covered very low area. Barren and fallow land is observed in the eastern part of the Satara district and non-agricultural land and grazing land is observed in Satara district.

In the Satara district agriculture is the most important occupation of the people and about 71.3 percent of working population is directly engaged in agricultural activities. The economy and consumption pattern mainly depend on agriculture. The cropping patterned of Satara district has been changed due to increase in production of cash crop. While production of food crop decreased. Rice, Jowar and Pulses are the main food crops of Satara district central part of the Satara district produce jowar and wheat while eastern part of the district produce bajra, jawar and pulses.

About 61.17 percent area is found about 11.5 percent area is observed under pulses. About 5.9 percent area observed under sugarcane and 10.3 percent areas is found under oil seeds. Due to the irrigation facilities sugarcane production is increasing in the Satara district.

More cultivated land is observed in the central part of the Satara district (63.91%). Karad tehsil found highest cultivated land about 82.53 percent and Mahabaleshwar recorded lowest cultivated land.

The lowest percent of cultivated land is found in the tehsil khandala (40.10%), Mahabaleshwar (29.93%) and Patan (49.75%).

Another category of land use pattern is cultivable waste land. This type of land covers 11.62 percent of total geographical area. Man tehsil recorded highest percent of cultivable waste land. It covers 23.71 percent and it is higher than district average. Karad tehsil observed the lowest percent (1.60%) of cultivable waste land. It is found that the lowest group of percent is in Mahabaleshwar (6.66%), Khatav (5.80%), Koregaon (5.40%) and highest in Satara (11.63%) and in Khandala (10.51%)

One more category of land is land not available for cultivation. This type of land is under settlements, roads, railways, rivers, canals, barren land and uncultivable land such land covered 11.47 percent of the total geographical area. It is revealed that Satara (14.66%), Khandala (17.47%), Man (16.75%), Phaltan (11.50%) have observed high percent than the Satara district average. Khandala tehsil recorded the land not available for cultivation in the Satara district and Mahabaleshwar (3.76%) tehsil observed very low percent.

Last category is under forest category 13 percent in average land is found under forest. The Mahabaleshwar (59.65%) tehsil observed high percent land under this category, due to high rainfall and hilly region, the growth of vegetation is high. The evergreen monsoon forests are observed in the Mahabaleshwar tehsil. Jaoli (22.76%), Wai (20.62%) and Patan (19.74%) have observed high percent forest than the whole Satara district.

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