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CHAPTER -II

THE REGION

2.1 INTRODUCTION:

2.1.1. LOCATION:

The Solapur district lies entirely in the Bhima-Sina-Man basin up to the borarder of Karnataka. The Solapur district is bounded by 17.16 to 18.32 north latitudes and 74.42 E to 76.15 east longitudes. The east-west extension of the Solapur district is 200 kms. And north-South stretch of the Solapur district 150 kms. The Solapur district is fairly well defined to its west as well as to its east by the inward looking scarps of phaltan range and the Osmanabad palteau respectively.

The Shape of the district resembles flying eagle. The proportion of the area of the Solapur district as compare to Maharashtra State is about five (5%) percent. The proportion of area of the Solapur district in the Pune division is twenty (20%) percent. (Fig.2.1)

2.2 PHYSIOGRAPHIC DETERMINANTS AND SUGAR INDUSTRY

The Solapur district is located along the western flank of the Sahyadrian ranges in Maharashtra. It is mre or less like a plateau region, except two hill portions in Barshi and Karmala talukas. It is a tableland with an average height of
550 meter's (1700 to 1800 ft.) above mean sea level. Besides this, the area lies in the composite basin of the Bhima, Nira, Man and Sina.

Physiographic determinants of the study region is simple. It is also known as the Maharashtra plateau. Except some small hilly and river basin and majority part of the district comes under plateau region. In river basins also increasing the sugarcane production. All sugar factories located in sugarcane area as like Malshiras, and Pandharpur talukas. The distribution of the sugar industry is related to the physiographical situation of the region.

The Solapur district is more or less flat or undulating except north & eastern part of Barshi, central part of Madha & Karmala, western part of the Malshiras & Southern part of the Sangola talukas, which are hilly parts. The Ramling hill spreads from north-west to south-east of Barshi taluka. It is on the border of Osmanabad & Solapur districts. It has 600 mts. height above the mean sea level. The central Karmala & central Madha have two small hills named as 'Vaghoba' & 'Bokadi' respectively. The heights of these hills are 600 to 650 mts. respectively. The Phaltan range runs from west part of the Malshiras talukas to southern side of the Sangola taluka; locally it is called as Mahadeo range.
The region under study has major eastern portion under flat topography and thus the development of sugar industry is also largely confined to western parts of Solapur district.

Except these features remaining area of the district looks like a tableland. Generally, the shape of this district narrows down to the south-eastern part (Fig. 2.2) The slope of the district is towards south-east because main river flows from north-west to south-east across the district.

2.3 **DRAINAGE PATTERN AND SUGAR INDUSTRY**

The Solapur district is by five major rivers viz. Bhima, Sina, Nira, Man & Bhogawati (Fig.No. 2.3) Among them Bhima & Sina are the most important rivers in the Solapur district. Bhima is the major tributary of the Krishna river, which flows outside the Solapur district. Bhima river runs from south-east of the Pune district & enters into Solapur district Bhima river runs from south-east of the Pune district & enters into Solapur district near the Jinti village of the Karmala taluka. Its course in the Solapur district is of 288 kms long. Nira & man are the right bank feeders of this river & Sina, Bhogawati & Bori are the left bank.

In Solapur district Malshiras, Madha & Pandharapur taluka Bhima, Nira and Sina these river basins also increasing area under sugarcane and thus maximum sugar industry
located Bhima, Nira and Sina basin river because the canal system provides irrigation facilities and about 50,000 acres of land of this taluka is irrigated by this canal co-operative sugar factories in the district have also tried to increase the irrigation in their operational area by promoting the lift irrigation schemes.

Bhima river transease about 180 k.m. in Solapur district and has a minimum discharge of fifty cusees of water besides hma. The Sina and Bori are also suitable river for, lift irrigation schemes feeders of the Bhima river. This river is locally called as Chandrabhaga because the shape of the course near Pandharpur is like a crescent (Fig.No. 2.3) Sina is another important river, which flows towards south-east in this district. This river originates from 'Torna' village in Ahmednagar district & enters the Solapur district near Aljapur village of the Karmala taluka. It has 180 kms. Course in the Solapur district. It flows through Karmala, Madha, Mohol & South-Solapur talukas of the Solapur district. This river meets Bhima near the Kurul village.

Nira is the third important river of the Solapur district. It is right bank tributary of the Poona district. It flows from north-east through Pune district & enters the Solapur district near Akluj village of Malshiras taluka only. It joins to Bhima
river near the village Sangam on the border of Malshiras taluka.

Man is the fourth major river of the Solapur district. It is also a tributary of Bhima river. It originates in the Man taluka & enters in the Solapur district in the northern part of the sangola taluka. It drains for 80 kms. Sytretch of the Solapur district. This river joins the Bhima river as sarkoli village of Pandharpur taluka.

Bhogawati is the fifth major river of the Solapur district. It originates in the Ramling hills in the Barshi taluka. It drains through the south-east part of the Solapur district. It runs for 64 kms. in Barshi & Mohol talukas of the Solapur district. It meets the Sina near Mohol village.

2.4 CLIMATE:

The climate of this district is on the whole agreeable and characterized by general dryness in the major part of the year. Climatically there seasons in the district namely summer, rainy and winter. The summer season starts from March to middle June, rainy season from June to October and the winter season from middle of the October to the end of the February.
Generally, the climate is dry and healthy during the hot winter season and tends to become chilly during rainy season. Particularly in winter, it is refreshing with bright sunshine. In the summer season the dust storm and hot winds are experienced. The temperature also rises up to 45°C. There are a number of important elements of the climatic condition. These are as follows.

i) **RAINFALL** :-

The entire district falls in rain shadow area. The rainfall is scanty all over the district. Large rainfall occurs from the south-west monsoons. Its cover the period from mid June to end of September. The records of the rainfall in the district are available from nine stations for the period ranging from 1955 to 1984. The details of the annual rainfall from various stations are given in the table No. 2.1.

( Table No. 2.1 )

**Normal Rainfall From Various Stations In The Solapur District.**

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Name of the Station</th>
<th>Rainfall in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Solapur</td>
<td>677.7</td>
</tr>
<tr>
<td>2</td>
<td>Barshi</td>
<td>657.4</td>
</tr>
<tr>
<td>3</td>
<td>Madha</td>
<td>581.7</td>
</tr>
<tr>
<td>4</td>
<td>Karmala</td>
<td>504.0</td>
</tr>
<tr>
<td>5</td>
<td>Pandharpur</td>
<td>611.1</td>
</tr>
<tr>
<td>6</td>
<td>Sangola</td>
<td>537.0</td>
</tr>
<tr>
<td>7</td>
<td>Malshiras</td>
<td>514.0</td>
</tr>
<tr>
<td>8</td>
<td>Akluj</td>
<td>448.8</td>
</tr>
<tr>
<td>9</td>
<td>Akkalkot</td>
<td>689.2</td>
</tr>
<tr>
<td></td>
<td><strong>District Average</strong></td>
<td><strong>548.3</strong></td>
</tr>
</tbody>
</table>

**Source**: The Gazetteers of India, Solapur District.
Fig. No.: 2.5
Normal Rainfall From Various Stations in the Solapur District
The average annual rainfall of the district is 548.3 mm (23.00). The rainfall in the district varies from 448.8 mm at Akluj near the western border of the district to 689.2 mm at Akkalkot near the south-eastern border of the district. Generally, the rainfall decreases towards the western part of the district. (Fig No. 2.4)

Boardly speaking the district can be divided into three rainfall zones- eastern zone, comprising Barshi, north-Solapur, south-Solapur & Akkalkot taluka has comparatively fifty eight rainy days. The central zone comprising Mohol, Mangalwedha, eastern part of the Pandharpur & Madha taluka has comparatively forty nine rainy days, & western zone comprising scanty area of Karmala, Sangola, Malshiras taluka & the western part of the Madha & Pandharpur has also comparatively thirty seven rainy days. (Fig.No. 2.5)

iii) TEMPERATURE :-

Temperature is the major important factor representing the climatic condition. The temperature of the Solapur district recorded by two meteorological observatories, one is at Solapur & second one is at Jeur. (Fig.No. 2.6 & 2.7) The data of Solapur station is available for a longer period. The records of both the observatories may be taken as fairly
Fig. No. 2.6
Mean Daily Temperature
Solapur Station

- ■ Mean Daily Maximum Temperature
- ✗ Mean Daily Minimum Temperature
Fig. No. 2.7
Mean Daily Temperature
Jeur Station

Temperature in °C

January February March April May June July August September October November December

M O N T H S

- Mean Daily Maximum Temperature
- Mean Daily Minimum Temperature
representative of the meteorological conditions in the district in general.

Generally, the temperature of the district is moderate & even, except the hot months in March, April & May. The highest temperature is experienced in May & lowest in December. Mean daily maximum temperature is 39.9 °C and (mean daily) Minimum temperature is 14.8 °C (Table No. 2.2.)

Winter season start by the end of November, when temperature, especially night temperature begins to fall reoidly. December is the coldest month with mean daily maximum temperature 29.39 °C & mean daily minimum temperature 24.8 °C. The period from middle February to the end of May is one of the continuous increase of temperature. May is the hottest month with the mean daily maximum temperature 25.1 °C. The heat during the summer season is intense & maximum temperature may sometime go up to about 44 °C.
<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Month</th>
<th>Solapur</th>
<th>Jeur</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean daily Max. temp.</td>
<td>Mean daily min. temp.</td>
</tr>
<tr>
<td>1</td>
<td>January</td>
<td>30.4</td>
<td>15.3</td>
</tr>
<tr>
<td>2</td>
<td>February</td>
<td>33.2</td>
<td>17.1</td>
</tr>
<tr>
<td>3</td>
<td>March</td>
<td>36.8</td>
<td>20.8</td>
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<tr>
<td>4</td>
<td>April</td>
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</tr>
<tr>
<td>6</td>
<td>June</td>
<td>34.7</td>
<td>23.3</td>
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<td>7</td>
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<td>31.3</td>
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<td>October</td>
<td>32.1</td>
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<tr>
<td>11</td>
<td>November</td>
<td>30.4</td>
<td>17.2</td>
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<td>12</td>
<td>December</td>
<td>29.3</td>
<td>20.1</td>
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<tr>
<td></td>
<td>Annual</td>
<td>33.3</td>
<td>20.3</td>
</tr>
</tbody>
</table>

**Source:** Gazetteer of India, Maharashtra State. Solapur District. P.32 & 33.

### 2.5 SOILS:

Soil is one of the basic factors of their indentification of the population concentration of a particular region. The Soils of the Solapur district can be divided into three classes i.e. light soil, locally known as Malran, Medium black soils & black soils. The Malran soils are shallow, coarse & contain/28n partially decomposed parent material. They occur in hilly slope, severally eroded, the depth of such soil is up to 23 cms. This soil occurs in western foot hill of Malshiras taluka, Sangola & central part of Madha & Karmala talukas. (Fig.No.2.8)
The medium black soil is comparatively wide spread in the district. The depth of this soil varies from 23 cm. to 45 cms. The texture of the medium black soils varies from silty loam, to clayloam. They contain a fairly large amount of lim nodules. Such types of soils occur in central part of the district & eastern part of the Barshi, Mangalwedha & Akkalkot. (Fig.No. 2.8)

The black soil exceeds 45 cms. Depth & the clay content increase with depth. The black soil occur in the courses of the river basins.. The eastern part of the district has black soil & majority part of the Barshi, Akkalkot & sough Solapur talukas have black soil. (Fig.No.2.8)

The district has a limited area under forest. There are a few scrub & scanty forest with patches in Barshi & Malshiras talukas. The forests, a little over half a century ago, were under the administration of forest division of the Solapur district. But owing to the pressure of population, both human & bovine, forest lands have been denuded of vegetation & soils.

Only dry thorny dry deciduous & common scrubs types of vegetations have spread in the district. These vegetations do not carry much importance from the view point of economic development. Barshi & Malshiras talukas have
small patches of scrubs & forest. The common gresses like Bonjrut, Bhalekusal, Pavanya, Sheda etc. are found in this district.

2.6 **GEOGRAPHICAL REGIONS** :

Through the district as a whole forms a broad basin occupied by Bhima river in the middle & rising to higher elevations towards the edges substantial regional & local variations exist in topography, underlying rocks, terrain, soil conditions & water supply, all of which are reflected in human reponse expressed though the human habitations, cropping economy & the cultural landscape. Accordingly, one may recognize the following briad divisions of geographical regions in the district.

2.6.1 **WESTERN FOOTHILL REGION** :-

This region comprises of southern part of Malshiras & western Sangola, forming scrap slope of Phaltan range from north-east to south-west in southern part of Malshiras taluka & forms north–south in Sangola taluka. This region descends from an elevation of over 600 mts. To 500 mts. & is followed by left of coalescing debries cones. The area is rough broken ground, fairly dissected by a large number of ephememeral stgreams aesenaing down the scarp slope &
draining into Nira & man. The hill slopes are generally barren. The soil stony & barren & much of it is fit only for cattle grazing.

The entire region is dotted with very few villages at an average distance to 6 to 8 kms. away from each other. These villages are generally found along the stream banks at lower edges of the foothill slope where a number of streams descend from the hill slopes & assure the village sites of a fairly reliable water supply.

2.6.1 NIRA BASIN :-

The region encompasses only Malshiras taluka & western central part of the district. It has 500 to 600 mets. Elevation, sloping northwards. The soil of this region is fairly deep in ther river basin & it tends to become open gray barad away from river basin. Since the introduction of canal & other means of irrigation, agriculture in this area has undergone revolutionary changes both in terms of cropping patterns & in terms of agriculture production. Malshiras taluka records the highest percentage under irrigation within the district about 60 percent approximately because of barren hill slopes & foothill deposits which are uncultivable wastes; occupying the southern part of the taluka.
2.6.2 **MAN BASIN :-**

If extend over whole Sangola taluka, half of the Mangalwedha & south Pandharpur. The climate of this area is driest in the district. The meager rainfall of about 45 cms, is also not reliable. The soil tends to be poor, shallow and gravelly on the plateau surface. However, along the stream it becomes fairly black and deep.

2.6.3 **BHIMA VALLEY -**

The Bhima Vally region lies in western Karmala, eastern Malshiras, Pandharpur and part of the Mangalwedha. It occupies the central part of the district. The Soil of this region is medium black murmad. The rainfall of this region increases downwards of the river basins.

2.6.4 **CENTRAL UPLANDS :-**

This region lies in the central part of Karmala and Madha talukas. It has an elevation about 650 mts. Above the mean sea level, rising through fairly steep slope about 50 mts. Relative elevation. The plateau is somewhat higher in elevation and somewhat reguurf in the north. It has generally stony plateau soils, gray to red barad and red soils.

2.6.5 **SINA-BHOGAWATI VALLEY :-**

This region occupies eastern and central part of the district, eastern part of Karmala, western part of Barshi,
eastern part of Madha, central part of Mohol and north and south Solapur talukas.

2.6.6 AKKALKOT PLAINS :-

The plains lie at an elevation of 400 mts. Above mean sea level. They descend down to the Sina valley in the west, while in this section, the area, as a whole is bare of trees. It has fairly assured water supply especially from wells as well as from assured rainfall also. Soils are mainly black and mixed murmad. The irrigated lands are mainly devoted to sugarcane, rice and Rabi Jawar.

SUMMARY:

We have seen location, hysiology, Drainage, Climate conditions, Soils, Vegetation and Geographical regions of the Solapur district, which are important foundation factors of the sugarcane & sugar industries of the region. Physiography of the study region is simple. It is also known as the Maharashtra plateau. Except some small hilly and river basins and majority part of the district comes under plateau region. The river basins also influence the foundation of the sugarcane and sugar industries in this region. The distribution of the sugar industry is related to the physiographical situation of the region.
The region under study has a major estern portion under flat topography and the development of sugar industry is also largely confined to western parts of Solapur district. Hence it supports high concentration of sugar factories while the western part of the district. Bhima and Nira basin. The central part of the Madha taluka Bima & sina river joined bogada (Jod Calwa) thats why sina river basins largely irrigated area.

The Central part of the district was relatively flat topography support medium concentration of the sugarcane & sugar factory in this district.

There are five rivers flow in the Solapur district as like Bhima, Nira, Sina, Bhogawati and Man. These rivers also influence the bases of the sugarcane production. Bhima and Sina basins are of prime importance in this district. Bhima drain central part of the district. This part has comparatively more concentration of sugarcane area & sugar factory. Bhima & Nira basin have relatively maximum area under sugarcane crop. Hence the major sugar factory situated in Malshiras talukas.

The soil climate condition (temperature, rainfall, humidity) and water requirements these are the basic requirements for the sugarcane cultivation. The sugarcane
cultivation in the Solapur district is mainly in the along the Ujani Dam area (back-water area) and basin of Bhima, Nira and Sina river & well irrigation facilities. The western part of district has mainly canal irrigated area. Soil is an important factor for the distribution of sugarcane crop. The region under study has black and loamy soil in eastern part and murmud soil in western part of district.

As a result relatively significant concentration of cane cultivations is confined to the western up-land districts followed by central of district.

There are seven major geographical divisions. These geographical divisions carry different cropping pattern. The basin, Sina basin, and Bhima basin have mainly concentration of sugarcane area. While the Malshiras, Karmala, Pandharapur and Madha these western part of regions highly irrigated area. Thus sugarcane production is mostly high.

Finally from the above discussion and the natural division of the Solapur district we come to conclusion that to carry a detailed study of the sugarcane cultivation and spatial development of sugar industries and to examine the factors in the present environmental conditions we can divided the whole district region.
This brief introduction of the factors forming the bases for sugarcane and sugar industries distribution in the study region is made in this chapter with a view point to present a broad canvass of reasoning.
REFERENCE

1) Maharashtra State Gazeteers - pp 1 to 33 & 245 to 260 Solapur District (1977)

2) Majid Husain (1994) - Industrial Geography pp. 25 to 63

3) T.C. Sharma (1977) - Economic and commercial Geography of India. pp.325 to 334


9) S.J. Jadhav, A.D. Kulkarni - 'Special number on Co-operative sugar industry in Maharashtra' Second State level conference of sugar Factories in Maharashtra - 1993 op. cit. p.3.5

10) Baviskar B.S. (1980) - 'The politics of Development-Sugar Cooperatives in Rural Maharashtra'

12) Govt. of India - Indian Sugar Committee Report' 1920


