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PATTERN OF SUGARCANE CONCENTRATION INPHALTAN TAHSIL SATARA DISTRICT (MAHARASHTRA).

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#### ABSTRACT

Sugarcane is an important commercial crop in India. It is a tropical plant and has been known in India from earliest times and its reference is found in Atharva Veda. India is the fourth major sugar producing country in the world, after Russia, Brazil and Cuba. Indian sugar industry has radically contributed in accelerating industrialization process and also in bringing socio-economic changes in under-developed rural areas. About 4.5 crore farmers are engaged in Sugarcane cultivation in India. Sugar factory (Co-operative, Private and Public) has been instrumental in initiating a number of entrepreneurial activities in rural India. In Maharashtra, about 9, 36,498 hectares of land is under Sugarcane cultivation and it is mostly concentrated in western Maharashtra. Total annual production of Sugarcane in Maharashtra is 91 million tonnes (2010-11). In Phaltan Tahsil, total land under Sugarcane production is 6046 hectares and there are two key sugar factories (2010-11). The first sugar factory, New Phaltan Sugar Works, was established in 1948 and the other one is Shriram Sahakari Sakhar Karkhana Limitedwhich was established in 1957. The increase in Sugarcane cultivation has resulted in major socio-economic reforms in Phaltan Tahsil. In this paper, an attempt has been made to study the Sugarcane concentration pattern in Phaltan Tahsil during the period 1991 to 2011.

**KEYWORDS**: SugarcaneCultivation, Pattern, Concentration, Index.



# **1.INTRODUCTION:**

Sugarcane is an important commercial crop in India. It is widely grown is different parts of the country. At present, India is the fourth major sugar producing country in the world, after Russia, Brazil and Cuba. The Sugar industry occupies an important place among other organized industries in India. Sugar industry has been instrumental in resource mobilization, employment generation and creating social infrastructure in rural areas. At present there are 693 registered sugar factories,

which are mostly in co-operative sector. Maharashtra is the second largest Sugarcane producing state in the country. The potential of Maharashtra has been shown by the steady growth in area and production over the years. However, the unceasing decline in productivity in recent decades is a cause of great concern. Sugarcane is also the second most important cash crop covering less than three per cent of the total cropped area of the State. It utilizes more than 60% of the total water available

#### PATTERN OF SUGARCANE CONCENTRATION INPHALTAN TAHSIL SATARA DISTRICT (MAHARASHTRA).

for irrigation in the state. In Maharashtra, there are 173 sugar factories in Co-operative sector and 23 sugar factories are in Private sector. The farmers constitute the bulk of shareholders of the factories, which are mostly in cooperative sector; therefore sugar industries can provide number of growth centres in rural Maharashtra. In PhaltanTahsil, 6046 hectares of area is under Sugarcane cultivation and it has 4 sugar factories (2011). In PhaltanTahsil, Phaltan and Sakharwadi are leading Sugarcane producers.

#### **STUDY AREA:**

PhaltanTahsil of Satara District is selected for purpose of study because the topic under investigation is influenced by many considerations. Firstly, the researcher belongs to PhaltanTahsil and hence is familiar with study area. Secondly, the study area falls in drought prone region of Deccan trap of Maharashtra state, receiving annual average rainfall between 450-500 mm and it is distributed unevenly in study area. Thirdly, irrigation is a dominant factor in study area having considerable impact on land use of Phaltan Tahsil. The Banganga River and the Banganga canal, the Nira River and the Nira right bank canal, wells and tube wells are the main sources of irrigation in study area. Fourthly, this area has not been so far studied in depth from the land-use point of view. PhaltanTahsil, covering the part of the Nira river basin, is one of the economically prosperous Tahsils of Satara district in southern Maharashtra. It lies between 17058'North to 1805'North latitude and74020' East to 74040'East longitude. It has a total geographical area of 1028 square kilometres with128 villages and one urban settlement (2011 Census). This area is bounded by the Nira River in north side. The region attains 750 metres height (M.S.L.) with northward slopping land drained mainly by the Banganga River, a right bank tributary of the Nira River.

Medium black and deep black soil appears within study area. The soil fertility encourages growth of various crops like Sugarcane, Jowar, Bajara, Onion and Vegetables. According to 2011 Census, the area has total population of 3, 42,667 and out of these, 1, 76,250 are males and 1, 66,417 are females. The density of population is 333 persons per square kilometre. State highway, major district and other roads are major routes of transport besides broad-gauge railway route in Phaltan Tahsil. Phaltan is the administrative head quarter of this Tahsil (Fig.-1).



#### Location Map of PhaltanTahsil

Figure – 1

#### **OBJECTIVES:**

The present study was undertaken with the following objectives:

1. To study the growth of area of sugarcane cultivation.

2. To identify circle-wise areas of Sugarcane concentration on the basis of Bhatia's method.

### DATA BASE AND METHODOLOGY:

The study was conducted inPhaltanTahsil of Satara district during the period 1991-2011. The present study is based on secondary data collected from District Statistical Office, Department of Agriculture (PhaltanTahsil), Season and Crop Reports published by the Department of Agriculture (1991 to 2011), Socio-economic Review of Satara District, District Census Handbook; Maharashtra State Agricultural Statistical Information etc. were also scanned for setting relevant information. Simple Statistical method has been used to compute individual crop area concentration and Bhatia's method (1965) is used for the calculation of the Location Quotient.

### SUGARCANE CULTIVATION IN PHALTANTAHSIL:

Sugarcane cultivation in PhaltanTahsilis considered as the core agricultural activity in eastern Satara District. PhaltanTahsilis the leading Sugarcane producer in Satara District and it covers 18.11% of total land in the District. Phaltan, Barad, Vidani and Padegaon circles cover vast hectares of area for Sugarcane cultivation(Table-1).

(Area in nectares)												
Years	Phaltan Circle		Vidani circle		Barad circle		Taradgaon circle					
	Area	Percent	Area	Percent	Area	Percent	Area	Percent				
1991	890	7.79	1250	9.73	2490	18.60	1120	6.75				
2001	910	7.86	713	5.87	1585	12.17	817	5.09				
2011	987	8.43	1414	11.06	2605	18.68	1040	6.27				
Total	2787	24.08	3377	26.66	6680	49.45	2977	18.11				

#### Table-1 Phaltan Tahsil:Circle-wise area of Sugarcane Cultivation (Area in hectares)

Source: Season and Crop Report Phaltan Tahsil

From the above table, it can be seen that Barad and Vidani circles are major leading Sugarcane producers in the Tahsil. They together contribute29.74% of area under Sugarcane cultivation. Agriculture is the main activity in the Tahsil and more than 70.46% of the total area is being used for agricultural activities. The monsoon period starts in the month of June with the maximum precipitation in July and August. The NiraRiver is the main river in the Tahsil and its main tributary is the BangangaRiver, which also originates near Sitamaihill, flows in north direction.

Phaltan is the 4th largest Tahsil in Satara district in terms of agricultural area (64,419 hectares). In 2001, the total area under irrigation in this Tahsil was 34,027 hectares (17.34%) but in 2011 it come down to 34120 hector (14.78per cent). Over the period of time, it is observed that the area under irrigation has increased in PhaltanTahsil. Overall, there has been a change in the irrigation pattern in the span of 20 years. This remarkable change is due to change in farmer's attitude and implementation of some minor and major irrigation projects by the Government.

### Concentration of Sugarcane cultivation:

The pattern of crop concentration reveals the variation in the intensity of crop in the given region at a particular point of time (Jadhav, 1984). The crop concentration patterns are studied in order to differentiate the areas of high and low densityof individual crop in the different parts of the region.Location Quotient (LQ) measures the degree to which aspecific region contains more or less concentration of a crop (Gupta&Hiran, 1973 and Das, 1990). In order to determine the circle-wise concentration of crops, Bhatia's method wasused for the calculation of the Location Quotient. Thefollowing formula is used to work out the concentration of Sugarcane cultivation in PhaltanTahsil.

# Formula-

Where,

LQi = Location Quotient of Sugarcane cultivation in the Tahsil.

Xij = Area under Sugarcane in the circle.

Xj = Total cropped area in the circle.

Yi = Total circle area under Sugarcane cultivation in the Tahsil.

Y = Total cropped area of the Tahsil.

#### Table-2 PhaltanTahsil: Circle-wise Sugarcane crop concentration (Area in hectares)

Sr.	Circles	1991	Index	2001	Index	2011	Index
No			value		value		value
1	Phaltan	890	0.71	910	1.04	987	0.76
2	Vidani	1250	0.91	713	0.77	1414	1.00
3	Barad	2490	1.79	1585	1.62	2605	1.72
4	Taradgaon	1120	0.63	817	0.66	1040	0.56

Source: Computed By the Researcher

Bhatia's Location Quotient is present in the form of concentration Index Table-2. By using the above equation, the circle wise Index value was calculated at Tahsil level. If the Index value is more, then the concentration of that particular crop in the unit area (Tahsil) is high and vice-versa. In 2011, Barad circle and Vidani circles showed very high concentration area under Sugarcane cultivation. This can be attributed to reasons such as optimization of water use to maximize production, technological innovations like use of sprinkler and drip irrigation, development of high yielding seeds, chemical fertilizers and better perennial crop management.Barad, Vidani andPhaltan circlesshow high Sugarcane concentration. Taradgaon circle lies in the western part of Tahsil which is drought prone area having scarcity of water supply, erratic monsoon etc resulting in very low level of concentration (0.56).Sugarcane crop grows best in areas with temperature 20? in winter season and 35? in summer season. Sugarcane is planted mainly in traditional method i.e. in furrows or in trenches.

### **CONCLUSION:**

Sugarcane cultivation is largely controlled by the physical, socio-economic conditions prevailing in the district. Regional disparity in the proportion of Sugarcane area to total cropped area is mainly related to the availability of consistent supply of water. Sugarcane cultivation is affected due to shortage of water, scarcity of monsoon (rainfall) and uneven rainfall distribution, low yield and high cost of cultivation, poor price in the market. After development of high yielding variety of seeds like Co-86032, Co-265 and improved of canal water supply, there has been a vital increase in Sugarcane production in northern and central regions of the Tahsil. But still in some parts, mostly western, the farmers facevarious problems like poor quality fertilizers, shortage of fertilizers, manures, weeding, and water scarcity, poor post-cultivation activities like Sugarcane cutting and labour problems especially during crushing time.

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