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Changing Crop Diversification in Satara District

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Abstract: *Agricultural regionalization is a very important fact to farmers in taking decision for crop cultivation. In this paper a detail study has been done to find out pattern of crop diversification in (1980-81 and 2010-11) from Satara District Maharashtra. The objective to study the changing crop diversification in Satara district. For this study the secondary data and information will be collected through government agencies. For crop concentration calculation the index of crop Diversification, Bhatia's method is used. Hence the study will help in understanding the degree of areal strengths and significant of individual crop to advocate suitable assurance as well as some strategies for well defines production of a particular crop. Satara district is basically an agricultural dominated area of Maharashtra and most of the people of this district are engaged in agriculture activity for livelihood.*

Keywords: Agriculture, Regionalization, Crop Diversification

I. INTRODUCTION

Crop diversification is a concept, which is opposite to crop specialization. The farmers try to grow several crops in their holdings in an agricultural year. The level of crop diversification largely depends on the geoclimatic, socio-economic condition and technological development in a region. In general, higher the level of agricultural technology, lesser the degree of diversification. Moreover, the richfarmers prefer to specialize in agricultural enterprise while the poor and subsistent farmers are generally more interested in the diversification of crop. The main advantage of agriculture regionalization lies in the fact that it help in the formulation of agricultural plans which may go a long way in reducing the regional disparities and inequalities. The agriculture regionalization may be done with the help of cropping pattern, crop combination, crop concentration, crop diversification, agricultural productivity and efficiency."(Hussain M, 1996)

Crop diversification has great relevance in agricultural land use planning. It refers to growing of varieties of crop either in a region or in the same field, the keener the competition the higher the magnitude of diversification. In fact, it refers to farming system in which multiplicity of crop characteristic is the agricultural landscape of a real unit. In the diversified farming, there is hardly any scope for spacialisation, and there is poor magnitude of commercialisation. In specialized farming, on the other hand yields are high and the farming is market oriented.

Studies on crop diversification give an idea about knowledge of diversification to be taken place for proper land use planning for economic development.

Objective:

- The crop diversification helps in understanding the cropping pattern adopted by the farmer of a particular region, whether traditional or market oriented. The main objective of this paper
- To show the pattern or level of crop diversification, whether subsistence or economically viable.

Data Sources and Methodology:

The study was conducted in Satara district of Maharashtra. The present study based on the secondary data and information will be collected through village revenue offices, taluka revenue offices, Satara district statistical office, Department of Agriculture Satara District Socio-economic Review of Satara District, District census Handbook, etc. Besides this some literature will be referred to from agricultural journals, books, and reports.

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The index of multiple cropping can be used formeasuring the diversity of cropping.Tounderstand the degree of crop diversification in Satara district.Thedifferent tahsils, Bhatia's (1965) method of cropdiversification is applied here, in the similar way to calculate the cropdiversification with the help of following formula based on the gross cropped area.

$$\text{Index of crop diversification} = \frac{\text{Percent of sown area under 'X' crops}}{\text{Number of X crops}}$$

Where 'X' crops are those crops that individually occupy 10percent or more of the gross cropped area in the area understudy.

The Study Area:

Satara district has typical landscape due to the variation in relief, climate and vegetation. The variation of relief ranges from the pinnacles and high plateau of the main Sahyadri range having heights over 1,200 meters above mean sea level to the subdued basin of Nira river with an average height of about 600 meters above mean sea level. The climate ranges from the rainiest in the Mahabaleshwar region which has an average annual rainfall of over 6000 mm to the driest in Man, Phaltan, Khandala and Khatav tahsil where the average annual rainfall is about 500mm.

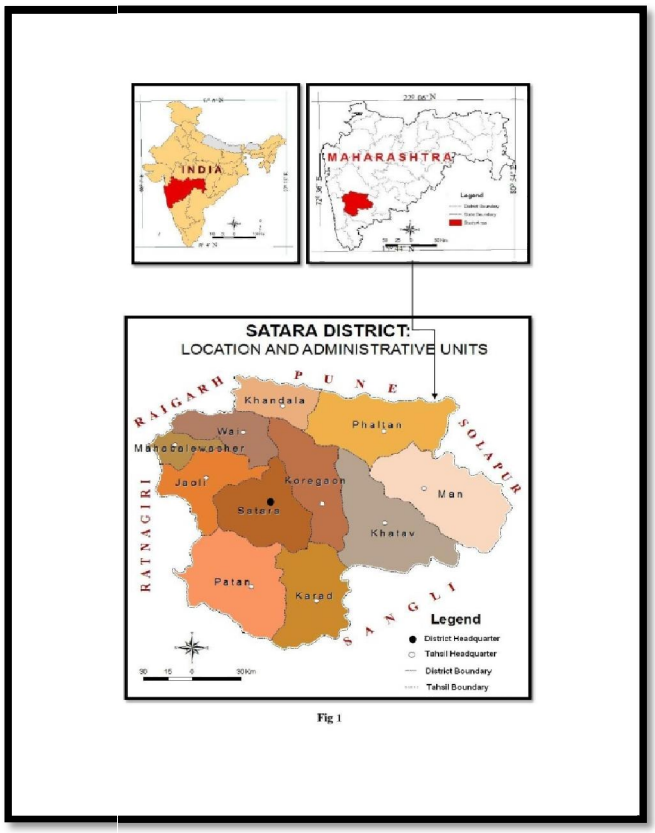

Fig 1

Satara district lies at the Western limit of the Deccan plateau in southern Maharashtra state. The district can be divided into two broad types of landforms. (i) The hill ranges of the Sahyadri and Mahadeo hills and (ii) The river basins of Krishna, Nira, Man and Yerla. There are four distinct river basins in the district. The Krishna drains the major portion to the south, the Yerla drains the mid-east portion also to the south, The Man drains the eastern parts to join the Bhima River outside the district and the Nira drains the northern portion of the district. The district lies between 17° 05' and 18° 11' north latitudes and 73° 33' and 74° 54' east longitudes. It is surrounded by Pune district to the north, Solapur

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district to the east, Sangli district to the south and Ratnagiri district to the west. It also has a small boundary of about 24 km. with Raigarh district in the north-west. Satara district consists of eleven talukas covering 1727 villages occupying an area of 10,480.0 sq.km. Most of the people found in this district are engaged in traditional subsistence agriculture. However, commercial agriculture is also noticed. (Source: Satara district census handbook Satara, district 1991)

Pattern of crop Diversification

It has already been emphasized that the Satara district has been famous for intensive cultivation due to dense population. Agriculturall and is put to multiple cropping because of the advantage of productive soil and irrigation facilities. The region produces Rice, Jawar, Wheat, Bajara, Oilseeds, Pulses and Sugarcane. Sometimes most productive piece of land produces three crops in a year. Scientific use of agricultural land necessitates more work and provides employment to more inhabitants in Satara district.

Table 1: Diversification of Crop in Satara district. (1981-2011)

Name of Tehsil	1980-81			2010-11		
	No of crop group in diversification	No. of crop grown in component areal unit	Crop diversification index	No of crop group in diversification	No. of crop grown in component areal unit	Crop diversification index
Mhabaleshwer	2	59.52	29.76	1	21.59	21.59
Wai	1	52.21	52.21	2	67.43	33.71
Khandala	2	70.1	35.05	2	39.47	19.735
Phaltan	1	56.27	56.27	3	30.35	10.16
Maan	2	84.03	42.02	2	40.8	20.4
Khatav	2	58.77	29.39	2	39.01	19.5
Koreguon	2	66.38	33.19	1	31.71	31.71
Satara	3	67.69	22.56	1	44.06	44.06
Javli	2	41.44	20.72	2	78.31	39.15
Patan	2	34.69	17.35	2	44.55	22.27
Karad	1	34.17	34.17	3	76.25	25.41
Distict	2	55.38	27.69	2	54.25	27.13

Source : Compiled by Author.

On the basis of the values computed by Bhatia's method for cropfor diverse tahsils in Satara district both for 1980-81 and 2010-11, itmay be stated that higher the value of index, lower is the diversificationof the crop. (Table 1)The regional pattern of crop diversification may be grouped in three categories as given under:

i) Area of high diversification: below 32 percent.

ii) Areas of Medium diversification:32-54 percent.

iii) Areas of low diversification: Above 54 percent.

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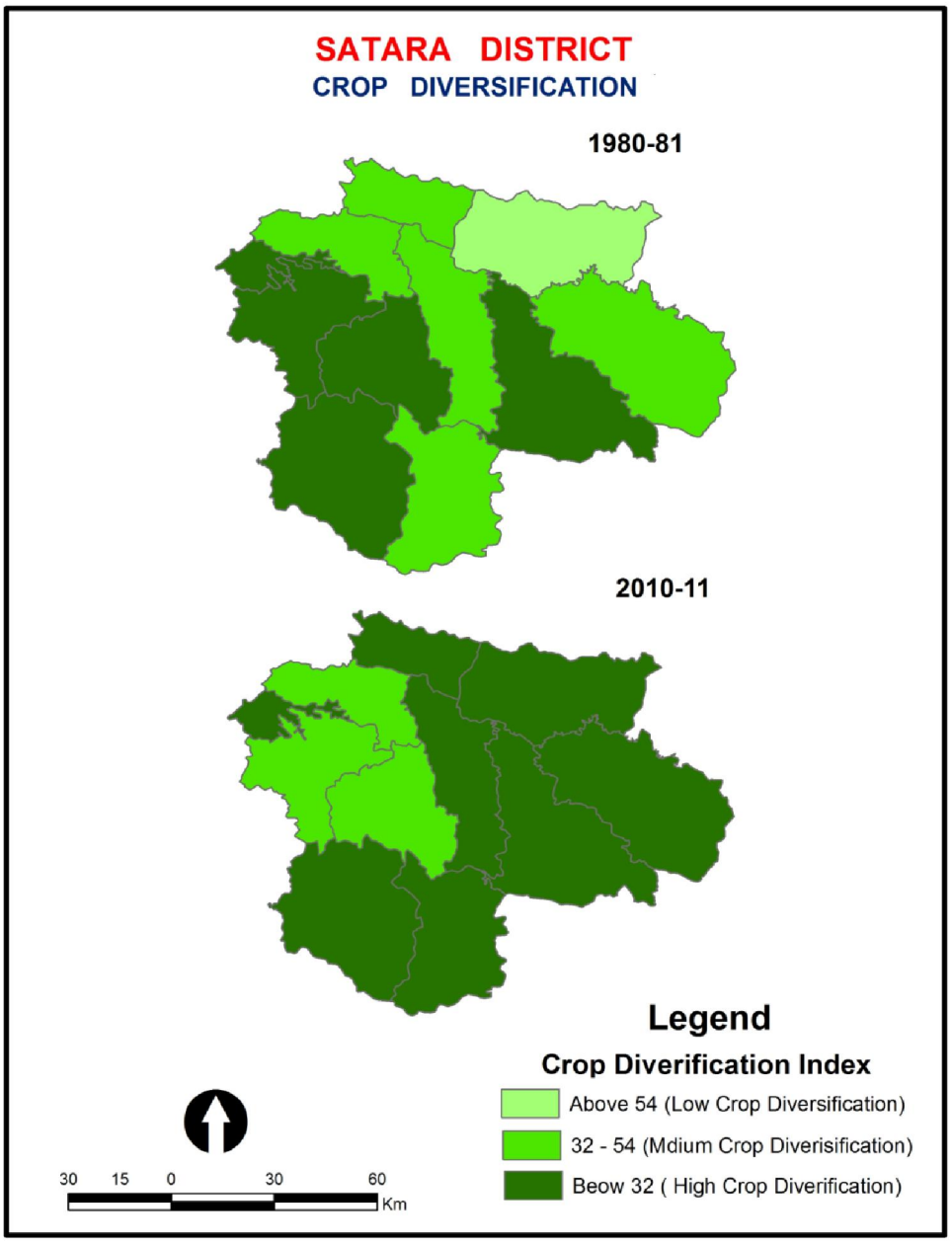

(Fig.2.2)

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II. ANALYSIS THE RESULT

The relationship between density of individual crop and the corresponding density for the study area as a whole has been studied. Table 1 is showing the district wise crop Diversification index in Satara District tehsil wise cropDiversification (1980-81 to 2010-11) in the region is as follows-

Crop diversification during the year 1980-81 was found in 27.69 and 2010-11 found in 27.13 percent its slight increase in year 2010-11. (Fig.no1.2, Table no1) revealed areas under crop diversification during the year 1980-81. It revealed the high concentration of diversification found in Mahabaleshwer, Javli. Satara, Patan, Khatav, tehsils. Moderate area under Bajra concentration found in Khandala, Javli, patan tehsils. Low concentration of Bajra found in Eight tehsils namely Mahabaleshwar, Wai, Satara, Koregaon, Phalton.

During the year 2010-11 into study region situation was slightly different, high concentration of diversification are found inKahndala, Maan, Khatav Tehsils.because due to over irrigation farmers enhance nitrogen in the soil and to replenish the soil fertility and alsofarmers grow several crops to meet the family requirement. Whileremaining all tahsils represented low diversification of crop in the regionunderstudy because the region is classified as semi-arid region receivingless rainfall, so farmer cultivated monoculture crop i.e. cereals.

South parts of the study regiondue to high irrigation facilities, cultivated more than one crop in the fieldon the other hand remaining all tahsils represented values above 54 percent, hence, fall in low diversification category of crops. (Fig. 1.2)

III. CONCLUSION

The pattern of diversification according to Bhatia's technique selected only those crops that individually occupy 10 percent or more of gross s long term impact on their resources. Productivity of land, use of other resources etc. the study of crop diversification can be also important.

Moreover proper agricultural planning in proper planning of area and cropping choice for the utilization of resource in best possible way need to be designed for better agricultural output.

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