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A Study of Crop Diversification in Shirur Tehsil, Pune District, Maharashtra State, India

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Abstract:

Agriculture is considered as the most important of all the economic activities of man. Agriculture is related to domesticated plants and animals as activity to satisfy man's needs. Crop diversification it is the just reverse of crop specialization. The farmer in developing countries try to grow several crops in their fields. The level of crop diversification largely depends on the geoclimatic, socioeconomic condition and technological development in a region. In general, higher the level of agricultural technology, lesser the degree of diversification. It is due to this reasons that reach farmer prefers to specialize in one kind of crop, while poor and subsistent famers are generally more interested in the diversification of the crops. Later on, Tree (1938), Crop diversification means raising variety of crops from arable land. The remarkable feature of such study is that the increase in number of crops is indicative of intensification and diversification. It is based on many factors, but the extent of irrigation facilities along with the characteristics of rainfall and conditions of soils are the most important ones.

Clean (1930) initially applied this concept in order to identify the degree of diversification and concentration in manufacturing field, Bhatia in 1965 applied crop diversification technique in India to understand crop cultivation. This technique provides a method for generalizing relation between the relative strength and number of crops grown in study region. In this formula, he has considered the cropped area for computing crop diversification. He considered only those crops that individually occupy 10 percent or more of occupied area in regional unit. Bhatia's formula was modified by Jasbir Singh (1976).

Keywords: Agriculture, Crop Diversification, Climate, technology

Introduction:

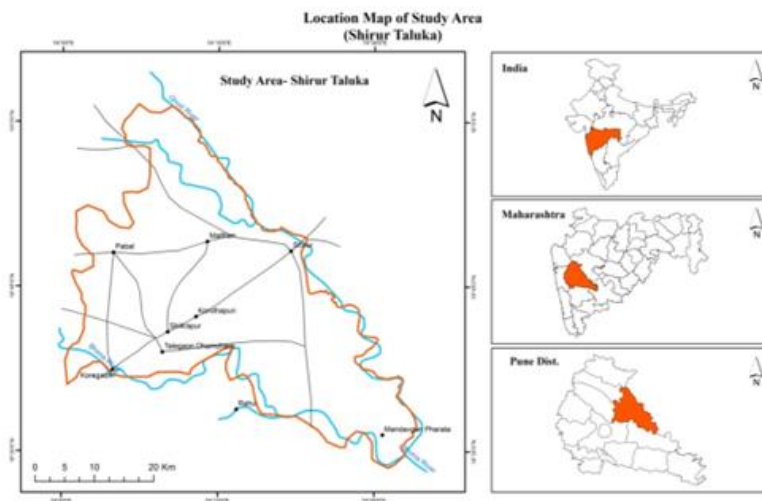
Agriculture is considered as the most important of all the economic activities of man. Agriculture is related to domesticated plants and animals as activity to satisfy man's needs. Crop diversification it is the just reverse of crop specialization. The farmer in developing countries try to grow several crops in their

fields.

The level of crop diversification largely depends on the geoclimatic, socioeconomic condition and technological development in a region. In general, higher the level of agricultural technology, lesser the degree of diversification. It is due to this reasons that reach farmer prefers to specialize in one kind of crop, while poor and subsistent famers are generally more interested in the diversification of the crops. Gibbs-Martin (1974) and Horence (1942) have used this concept of diversification for computing measurement of diversification of employment in industry. Crop diversification means raising variety of crops from arable land. The remarkable feature of such study is that the increase in number of crops is indicative of intensification and diversification. It is based on many factors, but the extent of irrigation facilities along with the characteristics of rainfall and conditions of soils are the most important ones.

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Study Area:



The absolute geographical location of study area can be expressed as from 18°.49'.00" N to 19°.34'.00" N latitude and 74°.22'.00" E to 75°.03'.00" E longitude. The tahsil comprises of 118 villages and one urban center. The Shirur Tahsil lies in

the eastern part of Pune district of Maharashtra The town Shirur is also known as Ghodnadi. Shirur has a significant historical and cultural reference. The area of Shirurtahsil extent form north to south 24 km and 50 km from east to west. The study area is included in Survey of India Topographic Index Numbers 47J/1, 47J/2, 47J/5, 47J/6, 47J/10 and 47J/11 on 1: 50,000. This tehsil is confined by Ahmednagar District to east and north-east, Ambegaontahsil to north-west and Haveli tahsil to South. Its total area occupied was 1552 sq.km.

Objectives.

1. To study of Physical background of study area.
2. To study the Crop Diversification in study area.

Methodology:

The following methodology was adopted Crop Diversification:

In order to identify spatial pattern of crop diversification in present study, the method (Bhatia 1965) has been adopted. The crops having less than ten percentages have been excluded from computation. This modified formula expresses as:

$$\text{Index of Crop Diversification} = \frac{\text{Percentage of sown area under 'x' crops}}{\text{Number of 'x' crops}}$$

Where,

'x' crops are those which individually occupy ten or more than ten percent of crop to net sown area in the villages.

5.5.2 Application and Results (Crop Diversification):

A variety of crops can be grown, and it is here that the farmer tends to diversify the cropping pattern with the result that most of the crops grown occupy only a small proportion of the sown area. ShirurTahsil has been divided into four circles for the study purpose. The crop diversification index indicates highly variation in cropping pattern from circle wise as well as village wise. The index values were arranged to determine the distinguish four degrees of crop diversification. These classes are made on the basis of Bhatia’s methods during 1965 as follows:

Table No. 5.17 Crop Diversification in Shirur Tahsil of 2011 year

2001 Crop Diversification						
Class	Diversification	Shirur	Shikarapur	Pabal	Nahvara	2001
15	Very High	7	0	0	0	7
15-20	High	12	6	1	6	25
20-25	Moderate	5	9	9	6	28
25-30	Low	0	10	9	16	35
>30	Very Low	3	1	6	3	13
Total		27	26	25	31	108

Source: Computed by Researcher

Table No. 5.18 Crop Diversification in Shirur Tahsil of year 2011 year

2011 Crop Diversification						
Class	Diversification	Shirur	Shikrapur	Pabal	Nahvara	2011
15	Very High	8	2	1	0	11
15-20	High	14	13	5	8	40
20-25	Moderate	3	9	13	10	34
25-30	Low	0	2	4	3	11
>30	Very Low	3	2	2	5	12
Total		28	28	25	26	108

Source: Computed by Researcher

Figure No.-5.21 Crop Diversification 2001

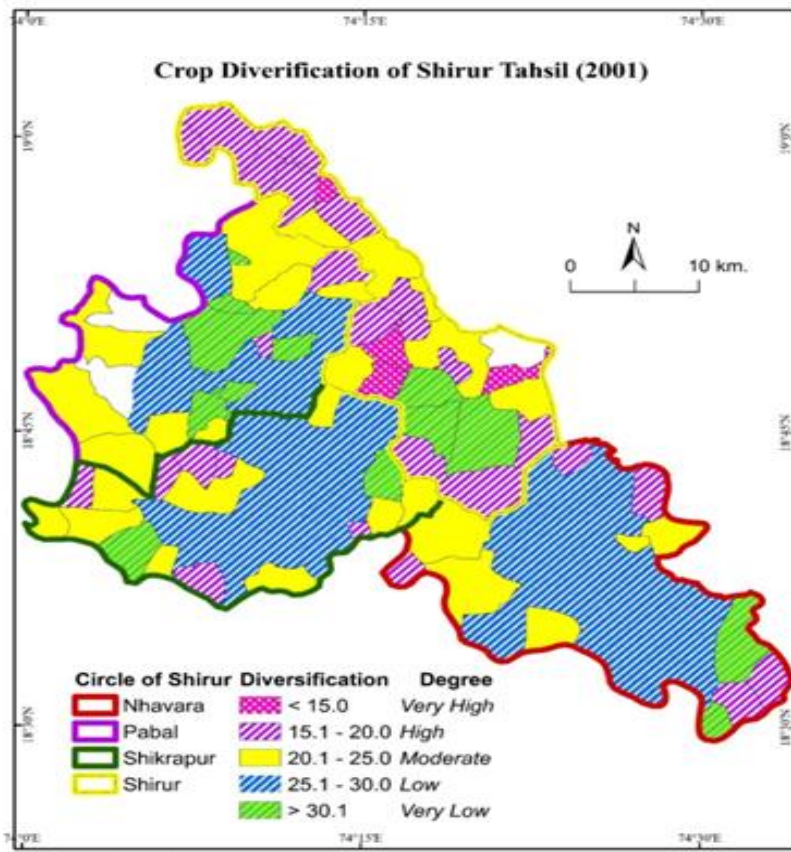
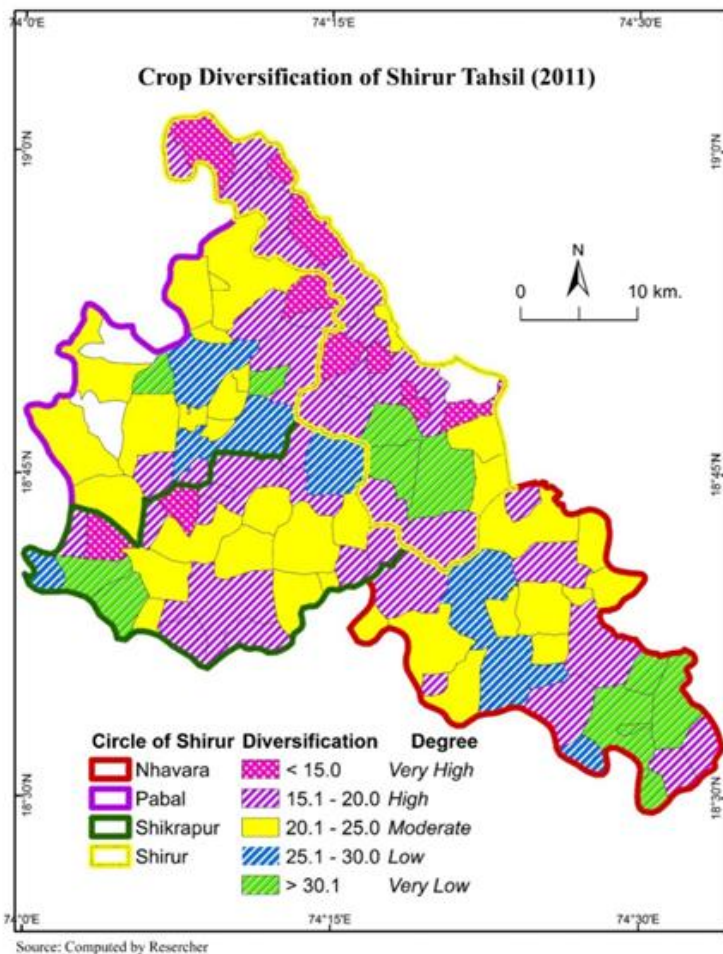


Figure No.- 5.22 Crop Diversification 2011



5.5.2 .1 Very High Crop Diversification:

Very High crop diversification is found largely in Shirur circle comparatively to all other circles. In 2001, seven out of the seven village were from Shirur circle in vary high crop diversification. Whereas Pabal circle and Nhavara circle and Shikrapur Circle did not have even a single village in this category. 2011-12 witnessed eight villages from Shirur circle two village from Shikrapur circle and one village from Pabal circle in very high crop diversification category.

The very high crop diversification index is found in Shirur circle because this area has facilities relatively lowland area of Ghod river and so suitable for high irrigation. The topography of these parts of ShirurTahsil is comparatively suitable for agricultural. The slope of this activities circle is relatively gentle and hence this area has high diversification index vice-versa the Pabal circle, Nahavra having high

topographic variation. The area also has upstream region of Ghod river and hence less irrigation facility available in this part. Such as Pimparkhed, Takalihaji, Nimgaon Dude. etc. and Jategaon Bk., Pimpalejagatap in a Shikrapur circle has high diversification.

5.5.2 .2 High Crop Diversification:

High crop diversification is observed in Shirur circle comparatively to all other circles. Out of 25 villages they were Shirur circle 14 villages and Pabal circle had one village, Nahavra circle six village, Shikrapur circle six villages having in the class of high crop diversification from years of, 2001-02. The 2011-12 Out of 40 villages in Shirur circle 14 villages, Shikrapur Circle 13 villages, Pabal Circle five villages and Nahavra circle eight villages having in the class of high crop diversification from years.

The high crop diversifications were significantly increased. It shows that improvement in the index value of region. Nahavra and Pabal circles did not shows not much changes in this index value because Shirur circle already had very high crop diversification index. Nahavra circle also showed improvement in regional facility due to this facility. The index values as well as area under this index value were increased.

5.5.2 .3 Moderate Crop Diversification:

The Moderate diversification index is mainly observed in more villages in Shirur circle, Nahavra Circle, Shikrapur circle and Pabal circle area. But the Moderate crop diversification shows decreasing trend from year 2001-2002 to 2011-12. Out of 28 villages. They had Shirur circle 5 villages and Pabal circle nine village, Nahavra circle 5 village, Shikrapur circle 9 villages having in the class of high crop diversification in 2001-02. In 2011-12 Out of 34 villages in Shirur circle three villages, Shikrapur Circle nine villages, Pabal Circle 13 villages and Nahavra circle 10 villages were in the class of moderate crop diversification from years. Shikrapur circle showed relatively no change in 2001-2 to 2011-12. Some villages showed no change in crop diversification index because of effects of mountains topography.

5.5.2 .4 Low Crop Diversification:

The Low diversification index is mainly observed in more villages from Nahavra Circle, Shikrapur circle and Pabal circle area. But the low crop diversification shows decreasing trend from year 2001-2002 to 2011-12. The Out of 35 villages. Shirur circle had zero villages and Pabal circle nine village, Nahavra circle had 16 village, Shikrapur circle had ten villages having in the class of low crop diversification from years of 2001-02. The 2011-12 out of 11 villages in Shirur circle zero villages, Shikrapur Circle two villages, Pabal Circle four viilages and Nahavra circle 3 villages having in the class of high crop diversification from years. Shirur circle shows relatively no change. 2001-2 to 2011-12 some village's shows mostly change in crop diversification index because of effects of mountains topography and this area is less accessible from major highways and roads.

5.5.2 .5 Very Low Crop Diversification:

The Very Low diversification index is mainly seen in more villages in Nahavra Circle in 2011 years. Pabal circle is very low crop diversification showing decreasing trend from year 2001-2002 to 2011-12. Out of 13 villages. Shirur circle had three villages and Pabal circle six village, Nahavra circle three village, Shikrapur circle one villages having in the class of very low crop diversification from years of 2001-02. The 2011-12 out of 12 villages in Shirur circle three villages, Shikrapur Circle two villages, Pabal Circle two villages and Nahavra circle five villages having in the class of very low crop diversification from years. Shirur circle showed relatively no change in 2001-2 to 2011-12 some village's showed mostly change in crop diversification index because of effects of mountains topography, water facility and this area is less accessible from major highways and roads.

Conclusion:

A variety of crops can be grown, and it is here that the farmer tends to diversify the cropping pattern with the result that most of the crops grown occupy only a small proportion of the sown area. Shirur Tahsil has been divided into four circles for the study purpose. The crop diversification index indicates highly variation in cropping pattern from circle wise as well as village wise. The index values were arranged to determine the distinguish four degrees of crop diversification. These classes are made on the basis of Bhatia's methods during 1965 as follows:

Very High crop diversification is found largely in Shirur circle comparatively to all other circles. In 2001, seven out of the seven village were from Shirur circle in vary high crop diversification. Whereas Pabal circle and Nhavara circle and Shikrapur Circle did not have even a single village in this category. 2011-12 witnessed eight villages from Shirur circle two village from Shikrapur circle and one village from Pabal circle in very high crop diversification category.

High crop diversification is observed in Shirur circle comparatively to all other circles. Out of 25 villages they were Shirur circle 14 villages and Pabal circle had one village, Nahavra circle six village, Shikrapur circle six villages having in the class of high crop diversification from years of, 2001-02. The 2011-12 Out of 40 villages in Shirur circle 14 villages, Shikrapur Circle 13 villages, Pabal Circle five villages and Nahavra circle eight villages having in the class of high crop diversification from years.

The Moderate diversification index is mainly observed in more villages in Shirur circle, Nahavra Circle, Shikrapur circle and Pabal circle area. But the Moderate crop diversification shows decreasing trend from year 2001-2002 to 2011-12. Out of 28 villages. They had Shirur circle 5 villages and Pabal circle nine village, Nahavra circle 5 village, Shikrapur circle 9 villages having in the class of high crop diversification in 2001-02. In 2011-12 Out of 34 villages in Shirur circle three villages, Shikrapur Circle nine villages, Pabal Circle 13 villages and Nahavra circle

10 villages were in the class of moderate crop diversification from years.

The Low diversification index is mainly observed in more villages from Nahavra Circle, Shikrapur circle and Pabal circle area. But the low crop diversification shows decreasing trend from year 2001-2002 to 2011-12. The Out of 35 villages. Shirur circle had zero villages and Pabal circle nine village, Nahavra circle had 16 village, Shikrapur circle had ten villages having in the class of low crop diversification from years of 2001-02. The 2011-12 out of 11 villages in Shirur circle zero villages, Shikrapur Circle two villages, Pabal Circle four vilages and Nahavra circle 3 villages having in the class of high crop diversification from years.

The highly identified in crop diversification because of the number of favorable conditions for these crops from the above observation. The development in irrigation facilities, soil productivity, will change the existing high crop diversification from years.

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