

Research Note

Journal of Extension Education

Vol. 31 No. 3, 2019

DOI: <https://doi.org/10.26725/JEE.2019.3.31.6353-6356>**Pattern of Crop Diversification in Tirunelveli district of Tamil Nadu****L. Mohammed Ghouse¹ and S. Nazreen Hassan²****ABSTRACT**

Crop diversification is considered a significant component for achieving higher output growth, higher farm income, employment generation, sustainability of natural resources and poverty alleviation. Understanding the pattern of crop diversification is important for improving agricultural production and for the well being of farmers. This paper analyses the pattern of crop diversification in Tirunelveli district of Tamil Nadu. A non - experimental research design was used for this study. A sample size of 120 respondents was fixed for the study using proportionate random sampling technique. It was found that the cropping pattern of crop diversification in the district has slightly been changed and had increased in two decades. It was also found that there was only slight variation in the categories of crop diversification index among the respondents from the years of 2007-2008 to 2017-2018. Significant steps have to be taken to improve the crop diversification among the farmers.

Keywords: *Crop diversification; Cropping pattern; Tirunelveli; Simpson's index of diversification*

Tirunelveli district is predominantly an agricultural district with a total geographical area of 675850 ha. The total cropped area in the district as 206858 ha (30.61 per cent) and the net area sown was 175087 ha (25.91 per cent). The demand for food and agricultural production has been raised due to high population and income growth, as the natural resources too deployed, crop diversification is the main course of future growth of agriculture. It ensures employment opportunities for the small farmers as well as for agricultural labourers throughout the year. It provides the farmers with viable options to grow different crops on their land around the year. Diversification of crops helps the farmer

to avoid risk and uncertainty due to climatic and biological vagaries. To increase the sustainability in agriculture and to improve the agricultural production, crop diversification serves as a viable solution. In this paper an attempt was made to study the pattern of crop diversification in Tirunelveli district of Tamil Nadu.

METHODOLOGY

The study was conducted in Tirunelveli district of Tamil Nadu which was purposively selected. The sample size for the study was 120 farmers identified from the selected six villages from three blocks of the district. Proportionate Random Sampling method was

¹ Research Scholar and ² Assistant Professor, Agricultural College & Research Institute (TNAU), Killikulam

used to select the respondents. Simpson's index of diversification (SID) was used to find out the pattern of crop diversification.

$$SID = 1 - \frac{\sum X^2}{(\sum X)^2}$$

(Where X is the percentage of total cropped area under an individual crop)

The value of indices has been classified into four groups ranging from High, Medium, Low and Very Low diversified crops. The range was given by Beejata (2012).

FINDINGS AND DISCUSSION

Crop diversification refers to the competition among the growing crops in a region. The keener the competition, the higher the magnitude of crop diversification, and the lesser the competition, the greater will be the trend towards crop specialization or monoculture farming. The pattern of crop diversification was studied using Simpson's

index of diversification (SID) throughout Tirunelveli district of Tamil Nadu over the years and is listed in Table 1.

It could be seen from the table that crop diversification tends to move in an increasing trend throughout Tirunelveli district of Tamil Nadu. The results indicates that the farmers are moving from crop specialization to crop diversification over the years of 1997-1998 to 2008-2009 but it has only slight variation over the years of 2003-2004 to 2015-2016. This implies that the cropping pattern of crop diversification overall in the district has slightly been changed.

Crop diversification index (CDI) over the years among the respondents in Tirunelveli district of Tamil Nadu was studied for different range of Crop diversification Index.

Table 2 explains the category-wise changing pattern of crop diversification from 2007-2008 to 2017-2018 among the respondents. It could be seen from the table that the low category of crop diversification index covers a larger number of respondents (45.0 per cent) from among the total respondents during 2007-2008. During 2017-2018 50.8 per cent of the total respondents had low category of Crop Diversification Index (CDI). This table shows a 5.8 per cent increase in the low category of CDI. 38.4 per cent of the respondents had high level of CDI during the years of 2007-2008 but during the years of 2017-2018 it fell to 33.4 per cent showing a decrease in 5.0 per cent of CDI. Very low CDI was observed in 0.8 per cent decrease of the respondents during the years of 2007-2008 was observed and it had no

Table 1.
Pattern of Crop Diversification Index
throughout the district over years

| Sl. No. | Years | Crop diversification index |
|---------|---|----------------------------|
| 1. | First six years (1997-1998 to 2002-2003) | 0.67 |
| 2. | Second six years (2003-2004 to 2008-2009) | 0.73 |
| 3. | Third six years (2009-2010 to 2015-2016) | 0.73 |

Table 2.
Pattern of Crop Diversification among the Respondents

| Sl. No. | Range | Categories | Distribution of respondents based on CDI | | Variation |
|---------|-------------|------------|--|-----------|-----------|
| | | | 2007-2008 | 2017-2018 | |
| 1. | Above 0.65 | High | 38.4% | 33.4% | -5.0% |
| 2. | 0.55 - 0.65 | Medium | 15.8% | 15.0% | -0.8% |
| 3. | 0.45 - 0.55 | Low | 45.0% | 50.8% | +5.8% |
| 4. | Below 0.45 | Very low | 0.8% | 0.8% | 0.0% |

change even during the years of 2017-2018. The table clearly indicates that there was only slight variation in the categories of crop diversification index among the respondents from the years during 2007-2008 to 2017-2018. Significant steps need to be taken to improve the crop diversification among the farmers in order to mitigate the price risks and loss due to vagaries in weather conditions.

Crop diversification, in spite of being the solution to mitigate risks involved in farmers, faces certain field level constraints also. The major constraints reported by farmers at field levels were listed and ranked for further interpretations of the study (Table 3)

It is evident from the table that most of the farmers felt that middlemen intervention is the major constraint faced in the study area

Table 3.
Constraints associated with Crop Diversification

| Sl. No. | Constraints | Percentage | Rank |
|---------|---|------------|------|
| 1 | Middlemen intervention | 81.69 | I |
| 2 | Damage by wild animals | 75.00 | II |
| 3 | Inadequate institutional support in the form of credit or subsidy | 74.10 | III |
| 4 | Inadequate transport facilities for farm produce | 73.30 | IV |
| 5 | Lack of proper channels for marketing | 53.30 | V |
| 6 | Lack of appropriate price for farm produce | 51.60 | VI |
| 7 | Poor economic status of farmers inhibiting accessibility to various resources | 45.80 | VII |
| 8 | Incidence of Pests and diseases | 44.10 | VIII |
| 9 | Low yield due to inconsistencies in climate and rainfall | 35.00 | IX |
| 10 | Lack of awareness about Government schemes | 26.60 | X |

followed by damage by wild animals since the fields were in the foothills of Western Ghats. Inadequate institutional support in the form of credit or subsidy and inadequate transport facilities were identified by more than 70 per cent of the farmers. Around half of the farmers consider lack of proper channels for marketing and lack of appropriate price for farm produce. The reason could be that the produce through crop diversification was in small quantities and the economic condition of the farmers could not afford to access the facilities. Lack of awareness about Government schemes was also one of the reasons for the above mentioned constraints faced by the farmers.

The overall assessment showed that the Crop Diversification Index (CDI)

of the district was in the increasing trend during the period of 1997-1998 to 2008-2009 with only slight variation from 2003-2004 to 2015-2016. On the other hand CDI among the respondents had only slight variations from the years of 2007-2008 to 2017-2018 which is not healthier for crop diversification. It is evident that government should take measures to promote crop diversification. Providing credit / subsidy facilities to the farmers can facilitate crop diversification among small and marginal farmers. Removal of the middle men intervention and strengthening of marketing channels through group effort would popularize crop diversification among small and marginal farmers.