

## **Changing Cropping Pattern in Karad Tahsil: A Geographical Investigation**

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### **Abstract**

Agricultural land use of cropping pattern is necessary. They from the base of agro-based industries cropping pattern simply means the proportion of area under different crops at a point of time. Karad tahsil is selected as study region. In the Karad tahsil 216 villages are observed the Present investigations. For the present investigation, data regarding area under different crops has been compiled from Socio- Economic Review and District Statistical Abstracts of Satara district, 2009-10 and 2017-18. When we include Sugarcane, fruits and vegetables, Oil seeds & total food grain. The total food grain crops have occupied about 19.02% in the year 2017-18. The share of food grain crops decreased by 22.85% of the study region. The share of Sugarcane has increased by above 10% in the study region and also Oilseeds crop area increased.

**Keywords-** Sugarcane, Pavatha, foodgrain

### **Introduction:-**

The agro-based industries were depending upon the raw material came from agriculture. Hence the study of general land use. Agricultural land use of cropping pattern is necessary. They from the base of agro-based industries cropping pattern simply means the proportion of area under different crops at a point of time. where changes in cropping pattern refer to change in proportion of area under different crops at two different times. Whereas changes in cropping pattern refer to change in proportion of area under different crops at two different times. Such changes, throw governed by ecological situation socioeconomic and technological factors also determine which at the feasible crops the farmers will choose. A review of change in cropping pattern in karad tahsil during the 2009-10 to 2017-18 is briefly presented in table 1.1

**Objective: -**

1. To Study the Changing Cropping Patterns in Study Region.
2. To Study the Factor affecting Cropping pattern in Study Region.

**Study region: -**

Karad tahsil is selected as study region for the present investigation. In karad tahsil over all 216 villages is our study area.

Geographically karad tahsil is located 17 to 74 32' North latitude and 73 58' to 74 16' East longitude. It has an average deviation of 566 m. It lies at the confluence of Krishna and koyna river. There confluence is called preety sangam, mening confluence of love.

It's maximum time up to 41 c and minimum time is 15 c. Annual rainfall is 70 mm. The total area of karad is 566 m. The study area has a well-developed drainage pattern. by Krishna, koyna ,uttar mand ,tarali and their tributeries .

The river valley is occupied by typical black soil basalt is the main stone in the region. Agriculture is most important occupation of people in this region.

**Database and Methodology: -**

For the present investigation, data regarding area under different crops has been compiled from social- economic review and district statistical. Abstracts of karad tahsil, 2009-10 and 2017-18.

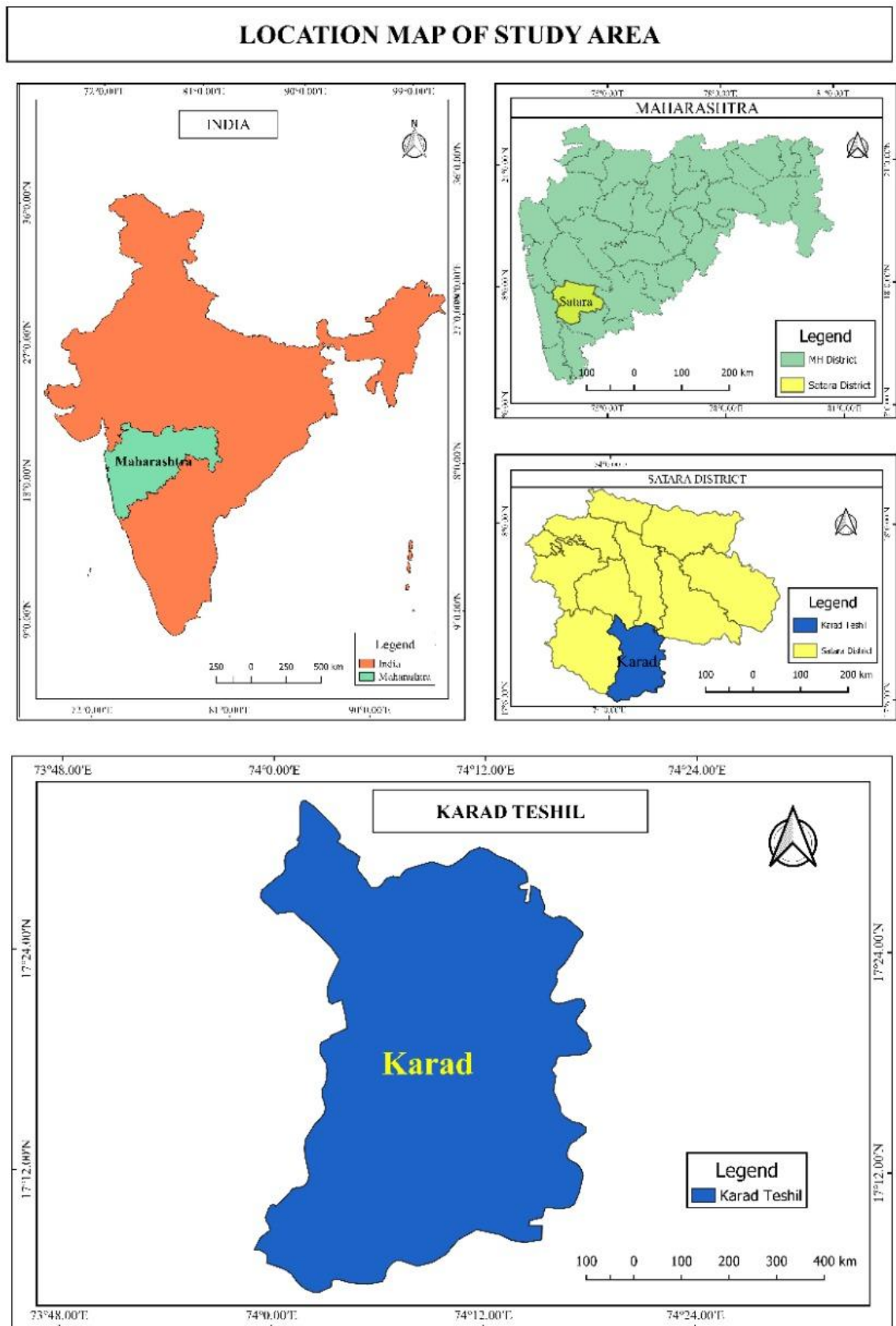
Simple percentage of area under different crops has been computes of both comparative periods and changes in this period have been observed.

**Results and Discussion: -**

Cropping pattern and changes: -

The area under study grows a variety of crops. However, food grain constitutes a major producer of agricultural land (19.2) but comparatuailey 2009-10 year the oil seeds or sugarcane major produce crop of agricultural land

The Sugarcane is cash crop. Sugarcane is occupied 26.97% of total cropped area. Another cash crop Soya bean is shares 18.25% area. The main food grains rice, wheat, jowar, and Pulses are there.



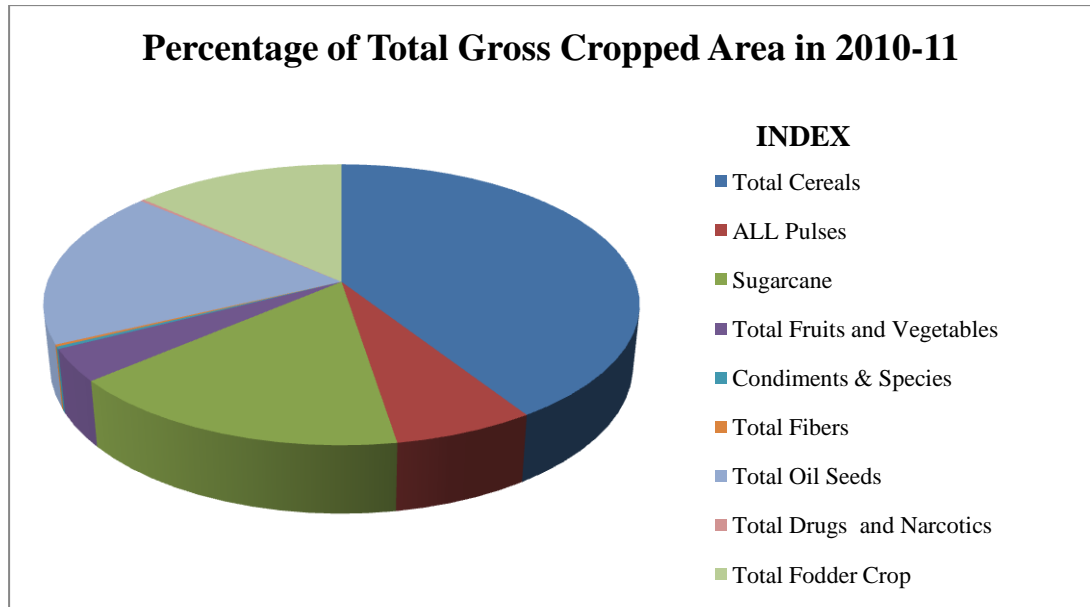
**Table No: - 1.1**

| Sr.no | Crops                            | 2009-10         | 2010-11       | 2017-18         |               | Change in % there in |
|-------|----------------------------------|-----------------|---------------|-----------------|---------------|----------------------|
|       |                                  | Area in Hectare | % of G.C.Area | Area in Hectare | % of G.C.Area |                      |
| 1     | Rice                             | 9295            | 9.75          | 1542            | 1.5           | -8.25                |
| 2     | Wheat                            | 5637            | 5.91          | 1494            | 1.45          | -4.46                |
| 3     | Jowar                            | 17111           | 17.95         | 13745           | 13.28         | -4.67                |
| 4     | Bajara                           | 3957            | 4.15          | 49              | 0.047         | -4.103               |
| 5     | Maize                            | 2675            | 2.8           | 1622            | 1.56          | -1.24                |
|       | <b>Total Cereals</b>             | <b>38937</b>    | <b>40.86</b>  | <b>18632</b>    | <b>18.01</b>  | <b>-22.85</b>        |
| 1     | Gram                             | 2690            | 2.82          | 371             | 0.358         | -2.462               |
| 2     | Tur                              | 605             | 0.63          | 449             | 0.43          | -0.2                 |
| 3     | Moog                             | 646             | 0.68          | 388             | 0.37          | -0.31                |
| 4     | Urad                             | 501             | 0.52          | 2               | 0.001         | -0.519               |
|       | <b>All Pulses</b>                | <b>6270</b>     | <b>6.59</b>   | <b>1239</b>     | <b>1.19</b>   | <b>-5.4</b>          |
|       | <b>Total Foodgrains</b>          | <b>45207</b>    | <b>47.44</b>  | <b>19871</b>    | <b>19.2</b>   | <b>-28.24</b>        |
| 1     | Sugarcane                        | 15534           | 16.3          | 27907           | 26.97         | 10.67                |
| 1     | Total Fruits and Vegetables      | 3551            | 3.72          | 8297            | 8.02          | 4.3                  |
| 1     | Condiments & Species             | 260             | 0.27          | 107             | 0.103         | -0.167               |
|       | <b>Total Foodcrops</b>           | <b>64552</b>    | <b>67.75</b>  | <b>56182</b>    | <b>54.3</b>   | <b>-13.45</b>        |
| 1     | <b>Total Fibers</b>              | <b>218</b>      | <b>0.22</b>   | <b>8</b>        | <b>0.007</b>  | <b>-0.213</b>        |
| 1     | Groundnut                        | 10974           | 11.51         | 10273           | 9.93          | -1.58                |
| 2     | Sunflower                        | 280             | 0.29          | 0               | 0             | -0.29                |
| 3     | Safflower                        | 119             | 0.12          | 106             | 0.1           | -0.02                |
| 4     | Soyabean                         | 5806            | 6.093         | 13015           | 12.58         | 6.49                 |
|       | <b>Total Oil Seeds</b>           | <b>17547</b>    | <b>18.41</b>  | <b>23423</b>    | <b>22.65</b>  | <b>4.24</b>          |
| 1     | <b>Total Drugs and Narcotics</b> | <b>210</b>      | <b>0.23</b>   | <b>0</b>        | <b>0</b>      | <b>-0.23</b>         |
| 1     | <b>Total Fodder Crop</b>         | <b>12754</b>    | <b>13.39</b>  | <b>23837</b>    | <b>23.04</b>  | <b>9.65</b>          |

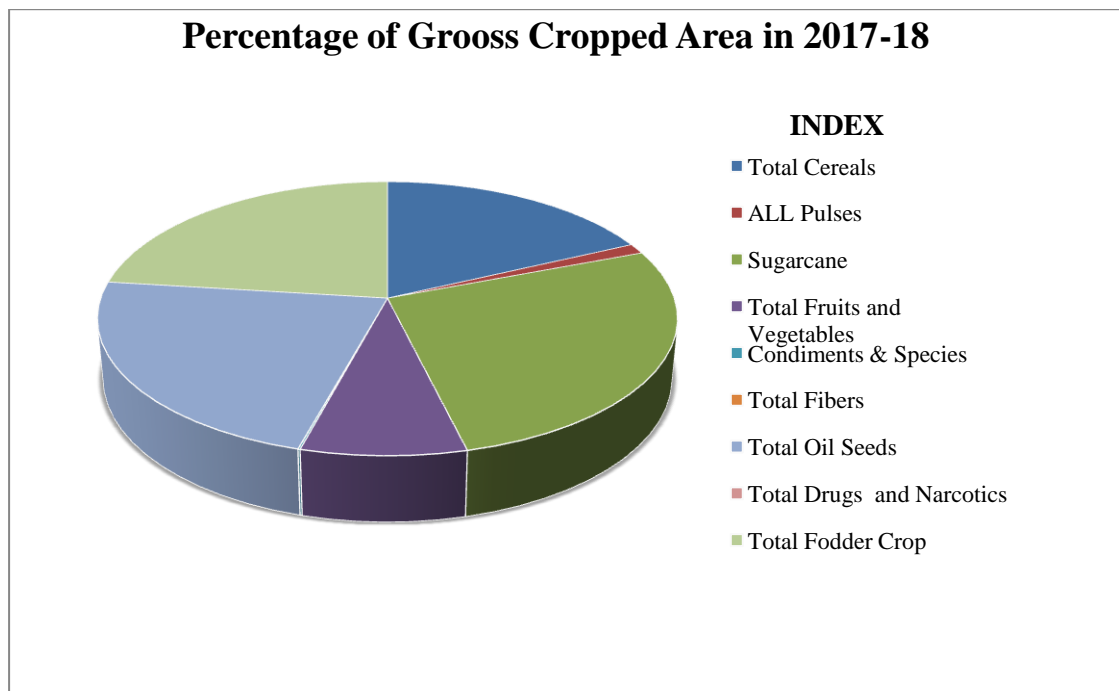
|  |                           |              |            |               |            |          |
|--|---------------------------|--------------|------------|---------------|------------|----------|
|  | <b>Gross Cropped Area</b> | <b>95278</b> | <b>100</b> | <b>103450</b> | <b>100</b> | <b>-</b> |
|--|---------------------------|--------------|------------|---------------|------------|----------|

**SOURCE-** Socio-economic abstract 2009-10 & 2017-18

**Fig No.1.1**



**Fig. No.-1.2**



**1.Total Cereals –**

During the period of investigations table 1.1 shows that the majority of the villages have lost their area under total cereals. More than half of the villages of the study region recorded a tremendous decrease in the area under total cereals. These villages were distinctly irrigated but now the farmers of these tahsils shift cereals by cash crop like sugarcane in the study area.

### **1) Rice:-**

Being tropical monsoon crop rice requires temperature of 21<sup>0</sup> c during sowing and 37<sup>0</sup> c during harvesting. It requires high rainfall or assured irrigation facilities. Rice occupies about 1.5 percent of total cropped area having more variation at village level. As comparative 2009-10 to rice production decreasing year by year. In the year 2009-10 about 9.75 percent area occupies rice crop. But in that tahsil increasing cash crop so rice production is decreases. In the Karad Krishna and Koyna river basing area Rice productive area. In Karad Rethere basmati and indrayani rice is famous in all over Maharashtra. Koparde haveli, Nadshi, Rethere br, Karad, Masur etc. this villages are rice production is very high.

### **2) Wheat: -**

Wheat is a rabbi crop and it requires winter temperature between 10<sup>0</sup>c to 15<sup>0</sup>c. It can be grown in areas where rainfall is less than 500 mm with the help of irrigation as such in the region the post monsoon rainfall is not sufficient optimum production.

Wheat occupies only in the year of 2017-18 only 1.45 % the gross cropped area of the study region. Wheat is produced in every village of the study region. But it is taken substantially in Krishna basin area of the study region. Negative changes were recorded in the area under wheat cropping in study region. During the period of investigation below 4.46% negative change was recorded in the study region.

As comparatively 2009-10 the production of wheat will be decrease in Karad tahsil in the year 2009-10 5.91% gross cropped area occupied wheat cereals in study region

### **3) Jowar:-**

Jowar is grown both as kharif and rabbi crop. It can stand drought to a considerable extent and growth both as dry as well as an irrigated crop. It is a staple food in the region and also used as fodder. The spatial pattern of jowar is a reflection of topography, Climate and irrigation facilities.

During the year of 2017-18 it has lost 13.28% of its area under cultivation and during 2009-10 out of the total gross cropped area 17.95% found in jowar cultivation. These tahsil have river basin area and high proportion water in soil and unfavorable condition of climate therefore the area under jowar is limited.

The Karad tahsil northern part of Shamgow, Kival, Masur, Chikali in this village jower production is high because irrigation facilities are not developed.

The negative changes have been recorded in Area under jowar cultivation during the period investigation. In the study region below 4.67 % negative changes was found in area under jowar.

#### **4) Other cereals: -**

Other cereals are also significant in the study region Bajara and maize is also significant crop in this study region.

In the year 2009-10 Bajara cereals occupied 4.15% area in the karad tahsil after that in the year 2017-18 Bajara crops decreasing production. The negative changes have been occurred in an area under Bajara cultivation. Below 4.103% percent negative change Bajara Cereals was recorded in Karad tahsil.

Maize is only cereal crop which has been very low negative changes recorded in Karad tahsil because of many small industry scale industries started. this industry raw material is Maize. Below 1.24% Negative change was recorded in study region.

#### **2) Pulses: -**

Pulses are important in the cropping pattern of the study region. They are grown in both rabbi and Kharif season occupying about 1.19 percent of the gross cropped area.

The Region Produces varieties of pulses. However Principal pulses are gram, Mung, tur, urad, wal, math etc. they are mainly practiced as an intern cropping and largely rain fed. Total below 5% negative change was recorded in the area under pulses has decreased by 6.59% to 1.19% during the period of investigation. Such decline is mostly related to the adoption of HYI Jowar, Wheat, Sugarcane replacing pulses.

**1) Gram-** In the Karad tahsil gram is important industrial crop. Which provides raw important chain in rotation system of crop from the point of view of soil management. It shares about 0.35% gross cropped area of the study region. (2017-18) In the year 2010-11 gross cropped area occupied 2.82% of the study region. Below 2% negative change has found in the area under gram.

**2) Tur-** Below 0.2% negative changes was recorded in the area under tur. The tur production will be the decreased in year 2017-18. It shares about 0.63% gross cropped area of the study region.

**3)Moog-** Below 0.031% negative changes were recorded in the area under moog. It shares about 0.37% gross cropped area of the study region (2017-18)

**4)Urad-** Urad shares about 0.001% (2017-18) gross cropped area of the study region. More than 0.52% Negative changes were recorded in the area under urad crop.

### **3) Sugarcane:-**

Krishna basin is known as 'sugar Bowl' of Maharashtra since long, where on Karad one of the leading and well known market of jiggery in India is located (Jadhav 1984) sugarcane premier cash crop has occupied 26.97% of total cropped area

In the Karad tahsil four co-operative or private sugar factories are associated. The impact of sugar factory in this area is increasing sugarcane crop. The fertile alluvial soil, vicinity of market, well developed network transportation, suitability of moisture and temperature conditions are suitable for sugarcane crop. It ranks first crop by occupied area in tahsil.

The period under investigation has witnessed phenomenal growth in the area under sugarcane which rose from 15534 hectares (16.30%) to 27907 hectares (26.97%) The significant increase over 10% of the cultivation area is confined to center Karad tahsil villages.

Sugarcane is only crop which has been highest positive changes recorded in Karad tahsil 11 percent positive changes were recorded in study region. Development of Karad tahsil major role is sugarcane crop.

### **4) Total Fruits and Vegetables: -**

Varieties of fruits and vegetables are grown in the study region together sharing about 8.02% during (2017-18). There were only mango and banana fruits are grown up in the study region. The negative changes have been occurred in an area under fruit cultivation during the period of investigation in the study region. Below 2% negative changes were found in area under fruits. Karad tahsil is not favorable condition for fruits plantation climate, soil is not good for fruits so fruits production is year by year decreased. There were many fruit vegetables are grown in the study region. There were types old brinjal, tomato, bottle gourd, pumpkin cucumbers, lady finger etc. taken in the study region. The pod vegetables like fresh bean, cluster bean, dabbbean, pavata, shavaga are grown in the study region. In the year 2017-18 total gross cropped area 8.73% found in vegetables cultivation. Positive change of the area



under total fruits & vegetables was recorded during the period of investigation. Above 4.3% positive change was noted in Karad tahsil.

**5)Oil seeds: -**

Oilseeds grown in the region largely include groundnuts, sunflower safflower and soyabean etc. which together constitute about 22.65 percent of the gross cultivated area (2017-18) out of the total area under oilseeds soyabean alone shares about 50% area.

The area under groundnut has decrease from 10974 to 10273 hectare during the last ten years. Below 2 percent negative changes was found in Karad tahsil as soon as the irrigation facilities are made available but particularly groundnut is replaced by crops like sugarcane, wheat and vegetables.

The area under Soyabean has increases from 5806 to 13015 hectare during last ten years. Soybeans is looks like a cash crop this crop has shown significant growth in areal extent topography and climatic condition well done in region. Soybeans crop more than 6% positive changes was found in Karad tahsil. Sugarcane farming is facing many problems. As a result sugarcane growers have selected Soybeans as an alternative crop to sugarcane.The sunflower and safflower is below 1% negative change was found.

**6) Total fodder crop: -**

Apart from agriculture animal husbandry is the major occupation in Karad tahsil. Therefore, fodder crops are grown in large quantities here. As same time, with rising inflation, animal husbandry was seen as a secondary business. Therefore, fodder crop in Karad tahsil seems to have increased by 13.39 to 23.04% in the last ten years. Positive change of the area under fodder crop was recorded during the period of investigation. Above 9.65% positive change was noted in Karad tahsil.

**Conclusion: -**

They were many changes look place in the land use pattern of study region during the period of investigation. The net sown area of the tahsil was increased from 95278 to 103450 hectares' table 1.1 indicates crop wise general cropping pattern of the study region. The sugarcane is dominant crop in the study region sugarcane is more than half area occupied in the study region. After the sugarcane crop soyabean, groundnuts this oil seeds

are occupied more than area of Karad tahsil. In the Karad tahsil well developed drainage pattern irrigation facility so that's why farmers grown these cash crop in farm. In the karad tahsil sugarcane is also increased that main reason behind to decreased food grain production. After the sugarcane (10.67%), Soybeans (6.49%), vegetables (4.03%), fodder crop (9.65) are increased area under cultivation in last ten years. But the monotonous cropping pattern result in last degradation.

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