

Decadal Variation in Crop Intensity in Kolhapur District (Maharashtra)

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Introduction

India is an agrarian economy. Large share of population is engaged in agriculture. Cropping pattern is affected by physiography, climate and soil characteristics of region. In recent years the cash crops dominate over the food grains. Increasing area under cash crops can improve the return of farmer but other side decreasing area under food grain creates problems like scarcity of food grains, high selling price in market and high pressure on soil by taking production of cash crops.

Cropping intensity is defined as the number of crops a farmer grows in a given agricultural year on the same field. Cropping intensity determined the variation and utilization of land for various crops. Kolhapur district is one of the developed districts of Maharashtra state in concern with the agriculture. Present paper tries to identify the decadal variation in the cropping intensity of Kolhapur district.

Study region

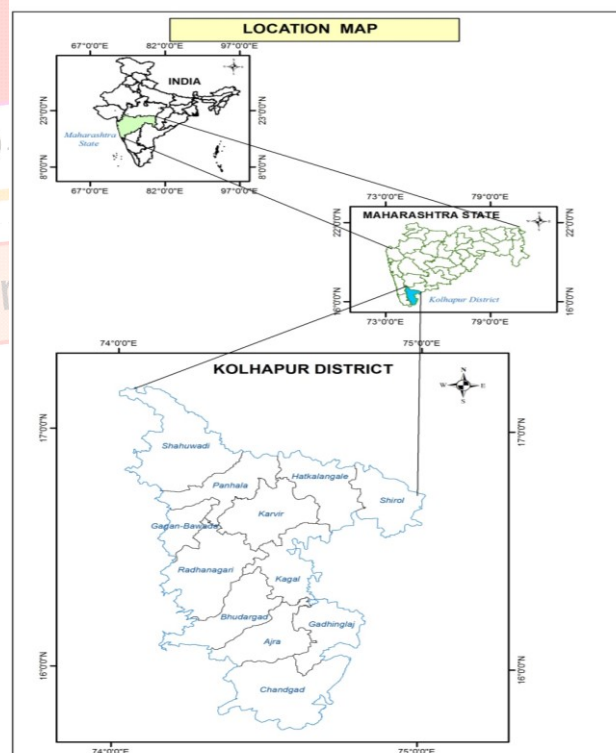
Kolhapur district is located in the south most part of Maharashtra Kolhapur district is situated in the southwestern part of Maharashtra. It lies between 15° 43' North to 17° 10' North latitude and 73°40' East to 74° 42' East longitude. Total area of Kolhapur district is 7692 Sq.km which occupies 2.62% area of total area of Maharashtra state. Kolhapur district comprising the Valleys of Warna, Panchaganga and their tributaries has a fertile & productive land.

• Physiography and Climate

The transitional geographical location of the district between Konkan coastal low land to the west and Deccan plateau to the east presents a variety in the geographical environment. General slop of the district is towards east and south-east. The general

altitude of district of 1000 mts. to the west and 600 mts. to the east. The district has two main physiographic divisions i.e. western hilly region and western hilly region consist of Panhala, Shahuwadi, Gaganbavada, Radhanagari, Bhudargad, Ajara and Chandagad tahsils. The eastern plain region includes Shirol, Hatkanangale, Karvir, Kagal tahsils. The study region has developed drainage pattern. The rivers like Panchaganga, Warana, Dudhganga, Vedaganga, Hiranyakeshi and their tributaries play an important role in the development of agricultural in the study region.

The Kolhapur district has temperate climate. It receives rainfall mainly from south-west monsoon and intensity of rainfall decrease from west to east. The mean temperature of the district lies between 40^oc to 16^oc in winter months. It exceeds more than 38^oc in summer especially in April.



Map No.1

Objectives of the study

1. To study the decadal variation in cropping pattern of Kolhapur district.
2. To understand the change in agricultural intensity in Kolhapur district.

Data source and Methodology

Present research work is based on secondary data. Data is collected from the following sources Socio economic review of Kolhapur District (2012-13) and (2022-23), Agricultural Department of Kolhapur District.

Here an attempt has been made to study tahsil wise decadal variation in cropping pattern measured by following formula

$$\text{Percent of variation} = \frac{\text{New value} - \text{Old value}}{\text{Old value}} \times 100$$

For calculation of cropping intensity following formula has been used.

$$\text{Crop intensity} = \frac{\text{Gross cropped area}}{\text{Net sown area}} \times 100$$

For the delineation of crop intensity tahsil is selected as basic unit. Crop intensity is limited for the decade of 2012-13 to 2022-23. Results are presented with the help of map.

Decadal Variation in cropping pattern.

Cropping pattern is largely depends upon the physical factors. Kolhapur district has great variation in its physiography, climate and soil. Therefore, district has great variation in crops also. In last decade the value of cash crops growing up rapidly hence the farmers tend to cultivate cash crop than the food crops.

Table No.1

Decadal variation in cropping pattern (2022-23)

Crops	Area in % 2012	Area in % 2022	Change
Cereals	29.501	30.4851	3.34
Pulses	5.39866	2.47711	-54.12
Sugarcane	18.6896	41.0499	119.64
Spices	0.91738	0.11691	-87.26
Fruits	2.93409	4.75688	62.12
Vegetable	1.05565	1.11159	5.30

Fiber crops	0.11351	0.15432	35.95
Oil Seeds	23.0725	18.5342	-19.67
Medicinal Plants	0.78374	0.20226	-74.19
Other Non food	17.5339	1.11183	-93.66

Source: Socio economic review of Kolhapur District (2012-13 and 2022-23)

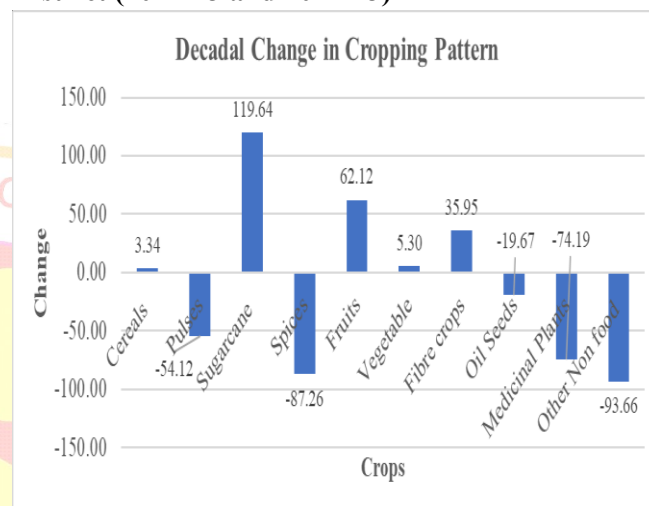


Fig.No.1

Table No.1 indicates the decadal change in the cropping pattern. Area under sugarcane records remarkable change in last decade. In 2012-13 the 18.68 % of total cropped area is under the cultivation of sugarcane but in 2022-23 it rises to 41.04% of total cropped area. Area under sugarcane is records 119.64% change in last decade. Following to sugarcane the area under fruits (62.12%) and fiber crops (35.95%) also records positive change in their cultivated area. On other hand the Spices (-87.67), pulses (54.12%), medicinal plants (74.19%) and oilseeds (19.67%) records negative change in last decade.

From above table it reveals that the dominance sugarcane as single cash crop effects on the area under other crops.

Cropping Intensity

Every agricultural practice has a aim to get good returns from agricultural products. For that farmer takes more than one crop in single year in same area. It increases his income. Study region has variation in its physiography, soil and rainfall. It implicates in its cropping pattern.

Table No. 2. reveals that the cropping intensity of district is decreases from 126.48 to 107.74 percent during the period of 2012 to 2022. In

the year of 2012 -13 Gaganbavada tahsil records higher crop intensity.it is 301.26. Following to that Ajara tahsil (150.95) Karvir tehsil records (134.39). Heavy rainfall uneven physiography and availability of nearest market farmers take a seasonal crop rather than the annual crops.

Table No.2

Tahsilwise Decadal variation in crop intensity

Tahsil	2012-13			2022-23			Change
	Gross cropped area in Hec.	Net Sown area in Hec.	Crop Intensity	Net Sown area in Hec.	Net Sown area in Hec.	Crop Intensity	
Shahuwadi	47426	56007	118.09	25703	26716	103.94	-14.15
Panhala	29374	33672	114.63	31220	34864	111.67	-2.96
Hatkanangale	48992	60005	122.48	48605	55755	114.71	-7.77
Shirol	41667	48631	116.71	31628	34528	109.17	-7.54
Karvir	47152	63369	134.39	38183	40557	106.22	-28.18
Gaganbawada	10471	31545	301.26	6288	6590	104.80	-196.46
Radhanagari	31921	38824	121.63	28805	29371	101.96	-19.66
Kagal	46819	54555	116.52	44716	49693	111.13	-5.39
Bhudargad	26912	35322	131.25	29231	30083	102.91	-28.34
Ajara	30708	46353	150.95	25300	25821	102.06	-48.89
Gaghinglaj	42312	47671	112.67	37151	42017	113.10	0.43

Chandgad	51331	59622	116.15	49472	51020	103.13	-13.02
Total	455085	575576	126.48	396302	427015	107.75	-18.73

Source: Socio- Economic Abstract of Kolhapur District.

Tahsilwise Decadal variation in crop intensity

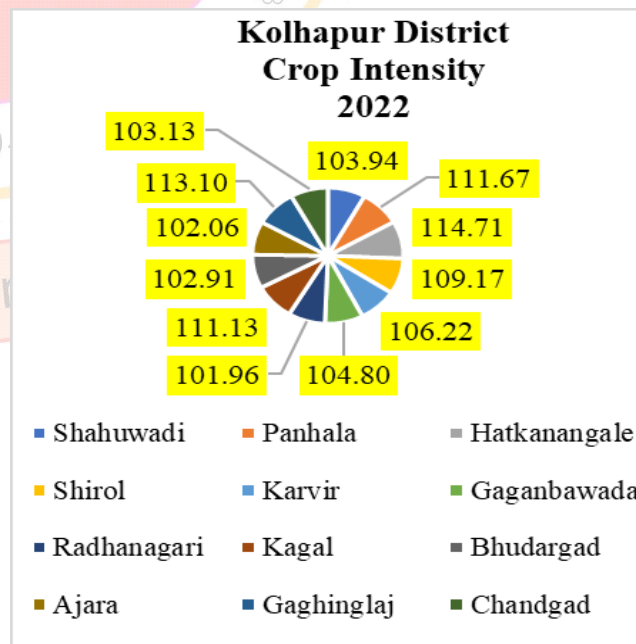
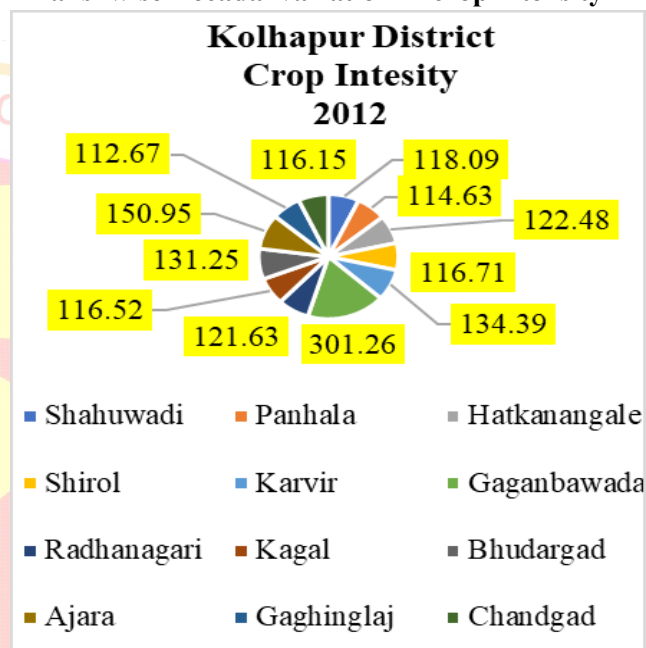


Fig. No 2

On the other hands the tahsil of Gadhinglaj (112.67), Chandagad (116.15) Panhala (114.63) Shirol (116.71) records lowest crop intensity as

compared to other tehsils of district. Dominance of sugarcane which is annual crop reduce the crop intensity of this tahsils.

In the year 2022-23 the crop intensity shows remarkable decrease in all tahsils of district except Gadhinglaj (0.43). The highest crop intensity was recorded in Hatkanangale (114.71) Gadhinglaj (113.10) and in Panhala tahsil (111.67). On the other hands the lowest crop intensity was observed in Ajara (102.06) Bhudargad (102.91) and Chandagad (103.13). The dominance of annual crops reduces the crop intensity in all tahsils as compared to the 2012 -13.

The changes in last decade from 2012 to 2022 the crop intensity was decreases throughout the district. The highest change was observed in Gaganbavada tahsil which is (-196.46). It means that the seasonal crops have reduces and this area occupied by the annual crops like sugarcane. Following to Gaganbavda, Ajara (-48.89) Karvir (-28.18) Bhudargad (-28.34) shows highest negative change in crop intensity. Other hand Panhala (-2.96) Kagal (5.39) Shirol(7.54) Hatkanangale (-7.77) Kagal records lower negative change in crop intensity

Conclusion

Kolhapur district is agricultural developed district of Maharashtra. Kolhapur district is well known for its diversity in physiography, climate and its cropping pattern. In recent years industrial development in the district effects on the agricultural scenario. The cropping pattern shifts from seasonal crops to the annual crops.

The decadal change in cropping pattern indicates that the only area under Sugarcane, Fiber crops and fruits shows positive change. Area under Sugarcane increased by (119.64), Fruits (62.12), Fiber (35.95) vegetable (5.30) and Cereals (3.34). On the other side the area under other crops from abovesaid shows negative change. It includes Spices (-87.26) Pulses (-54.12) and Medicinal plants (-74.19). Overall impression of this change is the area under food crops replaced by cash crops.

The decadal change in crop intensity shows that the intensity of crop decreased from 126.48 to 107.75. Gaganbavada, Ajara, Bhudargad and Radhanagari tahsils shows negative change whereas the only tahsil of Gadhinglaj shows positive change

in crop intensity. From above study it concludes that the cropping system of Kolhapur district shifted from food crops to cash crops.

References

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