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A Study of Changes in Cropping Intensity in Jalgaon District

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Introduction:

Cropping intensity is depends upon how many times same field has been cultivated in a year. It means, within a year more than twice the same area has been cultivated. Cropping intensity is the ratio between gross cropped area and net sown area. It shows the level of agricultural development. The index of intensity of cropping is 100 when one crop in one agricultural year is sown. If two crops are grown it becomes 200. Thus, the more are the crops in a piece of land in a year the higher would be the intensity of cropping. There are only two ways to satisfy the increasing food and other demands of the country's rising population—either expanding the net area under cultivation or intensifying cropping over the existing area. The net sown area of the country has risen by about 20 percent since independence and has reached a point where it is not possible to make any appreciable increase. Thus, raising the cropping intensity is the only viable option left.

Objectives:

The main objective of present research work is to study cropping intensity and changes therein.

Area Under Study:

Jalgaon district comes under Nasik division of the northern part of Maharashtra state. It was initially known as East Khandesh. It covers the total area of 11765 sq. km. (11, 63,898 hectares) comprising of 15 tehsils and 1491 villages. It lies between 20^{o} 15' to 21^{o} 30'North latitude and 74^{o} 55' to 76^{o} 28' East longitude. According to 2001 census the total population of the district is 4229917. The total area of the district is 11765 sq. km. which is about 3.82 percent of the total area of Maharashtra state.

Materials and Methods:

The present study is based on secondary source of data. The secondary data is the available from directorate of Economics and Statistics of Maharashtra, District statistics office of Jalgaon District, Census handbooks, Agricultural census etc. The methods applied includes bar diagram, pie chart, Graphs, Maps, Statistical analysis, cropping intensity etc. Following formula used for calculating the cropping intensity:

$$\text{Index of Cropping Intensity} = \frac{\text{Gross Cropped Area}}{\text{Net Sown Area}} \times 100$$

Results and Discussion:

Thus, higher cropping intensity means that a higher portion of the net area is being cropped more than once during one agricultural year. This also implies higher productivity per unit of arable land during one agricultural year. For instance, suppose a farmer owns five hectares of land, and gets the crop from these five hectares during the kharif season and, again, during the rabbi season he raises a crop from three hectares. He, thus, gets the effective produce from eight hectares, although he owns only five hectares physically. Had he raised crop from five hectares totally, his cropping intensity would have been 100 percent, while now it is 160 percent.

Table No. 1 - Jalgaon District: Changes in Cropping Intensity (2009-2019)

Sr. No.	Tehsils	Crop Intensity		Changes in Cropping Intensity (2009-2019)
		2009	2019	
1	Chopda	107.68	120.97	13.29
2	Yawal	104.55	108.71	4.16
3	Raver	116.11	144.90	28.79
4	Muktainagar	114.79	114.13	-0.66
5	Bodwad	104.22	104.52	0.31
6	Bhusawal	109.64	107.13	-2.51
7	Jalgaon	111.94	121.83	9.89
8	Erandol	119.09	113.32	-5.77
9	Dharangaon	105.48	112.76	7.28
10	Amalner	104.93	107.54	2.61
11	Parola	101.28	102.72	1.44
12	Bhadgaon	120.04	108.25	-11.79
13	Chalisgaon	102.39	102.33	-0.06
14	Pachora	103.43	106.37	2.95
15	Jamner	101.17	108.28	7.11
Jalgaon District		**107.10**	**111.73**	**4.63**

Source: Socio-economic Abstract of Jalgaon District, 2009 and 2019

Table 1 and Fig. 1, show that there have been many changes in the crop intensity in the study area between 2009 and 2019. In 2009, Jalgaon district had noticed 107.10 cropping intensity that has been increased up to 111.73 in 2019. It means in last decade cropping intensity of Jalgaon district has been increased by 4.63 due to increase in gross cropped area. On tehsils level in 2009, highest copping intensity observed in Bhadgaon tehsil by 120.04. Followed by Bhadgaon tehsil, Erandol (119.09), Raver (116.11), Muktainagar (114.79), Jalgaon (111.94) tehsils because of high irrigated area, uses of fertilisers, mixed cropping, cultivation of fast-growing varieties.

Overall, in Jalgaon district observed 111.73 cropping intensity in 2019. In 2019, highest cropping intensity observed in Raver tehsil by 144.90 due to development of irrigation facilities, inner cropping in Banana crop etc. Followed by Raver tehsil, Jalgaon, Chopda, Muktainagar, Erandol, Dharangaon etc. tehsils have high cropping intensity in 2019.

Table No. 1 - Jalgaon District: Category wise Changes in Cropping Intensity (2009-2019)

Index	Category	Year 2009 (Tehsil)	Year 2019 (Tehsil)
Bellow 105	Very Low	Yawal, Bodwad, Amalner, Parola, Chalisgaon, Pachora, Jamner	Bodwad, Parola, Chalisgaon
105-110	Low	Chopda, Bhusawal, Dharangaon	Yawal, Bhusawal, Amalner, Bhadgaon, Pachora, Jamner
110-115	Medium	Muktainagar, Jalgaon	Muktainagar, Erandol, Dharangaon
115-120	High	Raver, Erandol	--
Above 120	Very High	Bhadgaon	Chopda, Raver, Jalgaon

Source: Tabulated by Researcher

Very low cropping intensity observed in Yawal, Bodwad, Amalner, Parola, Chalisgaon, Pachora and Jamner tehsils in 2009. Among them Bodwad, Parola and Chalisgaon tehsils remain in this group while Yawal, Amalner, Pachora and Jamner tehsils shifted from this group to other categories due to rabbi crops like wheat, gram and maize has increased in these tehsils.

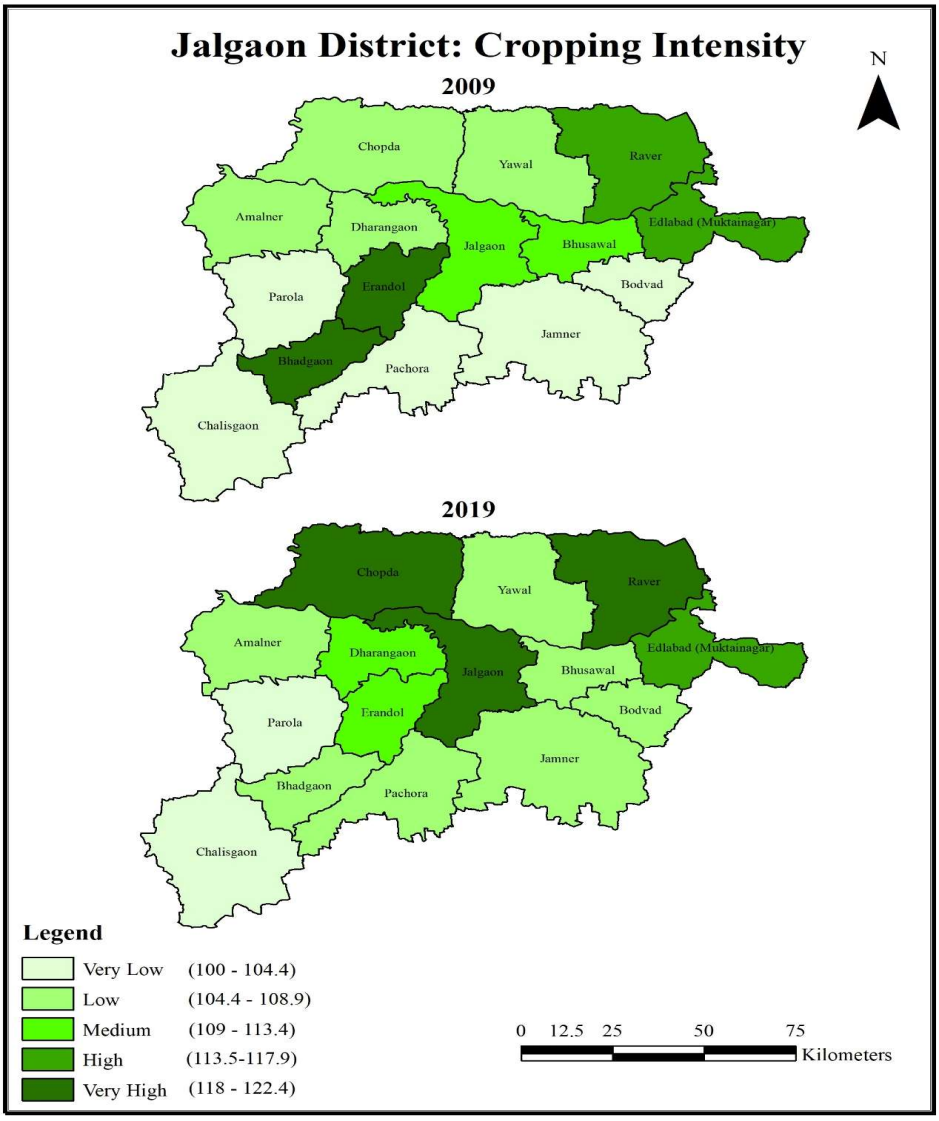

Fig. No. 1

Chopda, Bhusawal and Dharangaon tehsils have low cropping intensity in 2009. But in 2019 number of tehsils increased up to 06 (Yawal, Bhusawal, Amalner, Bhadgaon, Pachora and Jamner tehsils) due to increase in grossed cropped area. In categories of Medium and Very high increased number of tehsils due to irrigation, fertilizers, crop rotation, mixed cropping, fast growing varieties etc.

Conclusion:

The present study discloses that increasing population and its pressure increase the cultivated area, net sown area, double cropped area, multi cropped area and deduct fallow land, waste land, forest area, and grazing and pastureland etc. because of the increasing demand of the growing population, hence increase the cropping intensity. Urban population expert more pressure on the land due to their high and complex

demands than the rural one so that land use is more intensive and non-agricultural like industrial plants, hotels, shopping malls and under the other infrastructural facilities so that cropping intensity is relatively low in urban centers like Jalgaon, Jamner, Yawal, Raver, Dharangaon, Bhusawal, chalisgaon etc. Other hand in Bhadgaon, Muktainagar and Bodwad have decrease double cropped area, gross cropped area due to lower down the irrigation area. In 10 tehsils of Jalgaon district has noticed positive changes in cropping intensity because of irrigation, fertilizers, crop rotation, mixed cropping, modern mechanises, fast growing varieties etc.

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