

# AN EVALUATION OF CHANGING CROPPING PATTERN IN MAHARASHTRA

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## Abstract

The current study aims to identify changes in Maharashtra cropping patterns. Additionally, this essay will offer some recommendations for enhancing the Maharashtra cropping pattern. From 2000-01 to 2015-16, or a period of five years, the secondary data was gathered. The analysis was carried out in two phases: the first from 2011-12 to 2012-13, the second from 2013-14 to 2014-15 which spans five years from 2011-12 to 2014-15, to show the absolute and relative changes in Maharashtra cropping pattern. The analysis shows that during the entire reference period, the gross sown area of the state expanded from 3935.18 (000ha) to 6707.09 thousand hectares. Maharashtra is mostly a food grain producing state, according to the study; in TE 2014-15, food grains constituted up 42.60% of the state's gross cropped area (GCA), while oilseeds accounted for 7.62%. Among food grains, cereals made up around 23.74% of a GCA, whilst pulses made up 17.45% of the same. The most important crop grown in the cities of Sangli Kolhapur, Raygad, Ratnagiri, and Sindhudurg is rice, which accounts for around 2.41% of the GCA. In an effort to boost their revenue, farmers are progressively focusing more on commercial crops. It is shown that the farming pattern further emphasizes the agricultural diversification of the state, shifting from less profitable or impoverished crops to more profitable or commercial ones.

## INTRODUCTION

Cropping pattern refers to the percentage of an area that is planted with various crops at a given moment, how this distribution has changed through time, and the variables that have an impact on this change in distribution (Puri).<sup>1</sup> The cropping pattern varies over both time and space. It is crucial to observe crop patterns because they show how agricultural land use is changing and give evidence of these changes. A change or shift in the cropping pattern indicates a change in the percentage of the land planted to various crops, and this proportion is greatly influenced by the facilities available in the specific agro-climatic zones. Agro-climatic, technological, and institutional factors all have a significant role in how a cropping pattern changes. To be more precise, the cropping pattern advantage in connection to agro-climatic circumstances, which show that output is influenced by soil and climate variables.(G.S.)<sup>2</sup> Other elements that influence cropping pattern include the growth of the marketing infrastructure and consumer demand trends. As a result, cropping pattern, which indicates agricultural commercialization, is crucial in determining the level of agricultural productivity. Many scholars have used the cropping pattern as an index to gauge the level of commercialization of agriculture. The percentage of land under any given crop to gross planted area is referred to as the cropping pattern index. The transformation of cropping patterns from market-oriented crops to subsistence crops.<sup>3</sup>(ouseef Ahmad Dar)The study looks at how Madhya Pradesh's agricultural practices have changed over a fifteen-year period, from 2000-01 to 2015-16. Four stages of the study were carried out, and the results showed both absolute and relative changes.

## RESEARCH FINDINGS

### Objectives

To examine the changing and relative status of cropping patterns in Maharashtra.  
Give some suggestions for crop improvement in Maharashtra.

This study includes both variables and relative variables.

Change =  $Y_n - Y_0$

Where,  $Y_n$  = current year price field.  $Y_0$  = Base year area value

$Y_0$  = Base year area value

Relative change =  $\frac{Y_n - Y_0}{Y_0} * 100$

$Y_0$

Where,  $Y_n$  = Base year  $Y_0$  Area value = Different crops and crops for this year Field value.

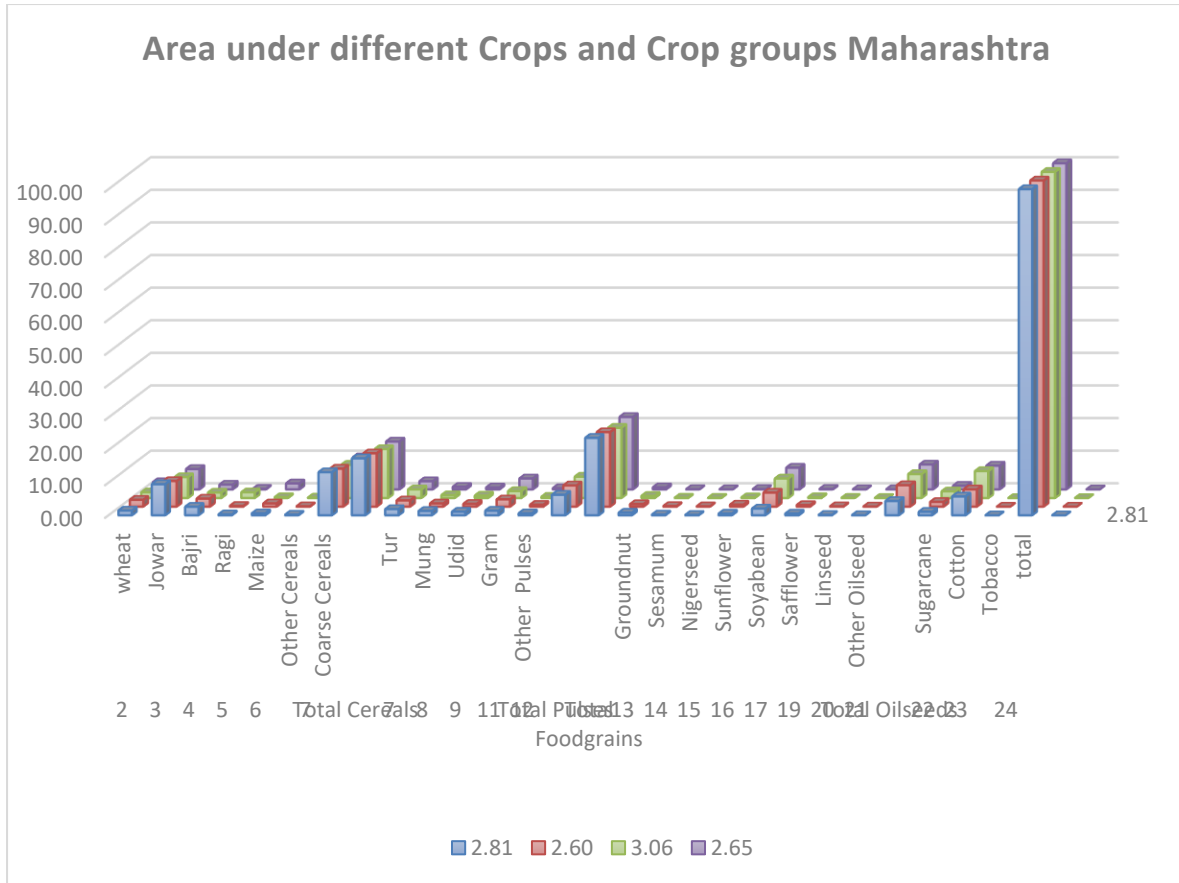
### Sources of Data and Time Period:

The data is secondary in nature and has been collected mainly from Maharashtra Agricultural Statistics (by Department of Agriculture of Maharashtra), <https://krishi.maharashtra.gov.in>, 2016 Agricultural Economic Survey and other published and unpublished data to prove cropping patterns in the state changing. The second data was collected over a fifteen-year period over a 16-year period from Year 2000 to 2015. The analysis is carried out in four phases: the first phase from 2000-01 to 2005-06, the second phase from 2005-06 to 2010-11, the third phase from 2010-11 to 2015-16 and the fourth phase >Sixteen years spanning from 2000-01 to 2015-16 to show absolute and relative changes in cropping patterns in Maharashtra

**Table No.1 Area under different Crops and Crop groups Maharashtra (000ha)**

NO	Crops	2000-01		2005-06		2010-11		2015-16	
		Absolute	%	Absolute	%	Absolute	%	Absolute	%
1	Rice	15.14	2.81	15.29	2.60	15.44	3.06	15.35	2.65
2	wheat	7.76	1.44	12.31	2.09	8.78	1.74	12.72	2.20
3	Jowar	51.37	9.53	46.18	7.85	32.29	6.40	36.16	6.25
4	Bajri	13.99	2.59	14.52	2.47	8.38	1.66	8.37	1.45
5	Ragi	1.51	0.28	1.36	0.23	8.77	1.74	0.93	0.16
6	Maize	3.26	0.60	5.8	0.99	1.3	0.26	10.53	1.82
7	Other Cereals	1.08	0.20	0.69	0.12	0.67	0.13	0.84	0.15
	Coarse Cereals	71.21	13.21	68.55	11.65	51.42	10.20	56.83	9.82
	<b>Total Cereals</b>	94.11	17.45	96.15	16.33	75.64	15.00	84.9	14.67
7	Tur	10.17	1.89	11.23	1.91	13.33	2.64	14.36	2.48
8	Mung	7.11	1.32	5.73	0.97	4.33	0.86	4.44	0.77
9	Udid	5.88	1.09	4.9	0.83	3.64	0.72	3.38	0.58
11	Gram	7.56	1.40	13.08	2.22	10.75	2.13	19.29	3.33
12	Other Pulses	3.16	0.59	3.34	0.57	1.92	0.38	2.11	0.36
	<b>Total Pulses</b>	33.88	6.28	38.28	6.50	32.97	6.54	43.58	7.53
	<b>Total Foodgrains</b>	127.98	23.74	134.43	22.84	108.61	21.54	128.48	22.19
13	Groundnut	4.29	0.80	4.5	0.76	3.23	0.64	3.55	0.61
14	Sesamum	1.18	0.22	1.05	0.18	0.46	0.09	0.33	0.06
15	Nigerseed	0.56	0.10	0.54	0.09	0.37	0.07	0.14	0.02
16	Sunflower	2.71	0.50	3.6	0.61	1.03	0.20	0.59	0.10
17	Soyabean	11.05	2.05	25.21	4.28	30.1	5.97	38.41	6.63
19	Safflower	2.87	0.53	2.79	0.47	1.31	0.26	0.76	0.13
20	Linseed	0.69	0.13	0.68	0.12	0.31	0.06	0.14	0.02
21	Other Oilseed	0.24	0.04	0.26	0.04	0.21	0.04	0.16	0.03
	<b>Total Oilseeds</b>	23.59	4.38	38.62	6.56	37.02	7.34	44.09	7.62
22	Sugarcane	5.78	1.07	8.49	1.44	10.22	2.03	6.33	1.09
23	Cotton	31.05	5.76	31.07	5.28	41.67	8.27	42.12	7.28
24	Tobacco	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
	<b>total</b>	539.18	100.00	588.65	100.00	504.17	100.00	578.9	100.00
	Net area sown	539.18	13.70	588.65	9.87	504.17	7.03	578.9	8.63
	Area more than once	3396	86.30	5378	90.13	6663	92.97	6129	91.37
	Gross sown area	3935.18	100.00	5966.65	100.00	7167.17	100.00	6707.9	100.00

Compendium of Agriculture Statistics 2009-2010, Maharashtra up to 2010 data and <https://krishi.maharashtra.gov.in/> from 2010-11 to 2015-16, Directorate of Economics & Statistics, DAC&FW (Agricultural Statistics at a Glance (2001-2011) and (2012-2017)



The area under cultivation of various crops and crops in Maharashtra is shown in Table 1. Data shows that the total area under cultivation in the state increased from 3935.18 thousand hectares to 6707.9 thousand hectares by the time expiry. In the last year of the implementation period, the net cultivation area increased from 539,180 hectares in the first year to 578,900 hectares. The area doubled from 3396 (000 hectares) in 2000-01 to 6129 (000 hectares) in 2015-16. Total yield in real terms fell from 1.3382 (ten thousand hectares) to 1.2848 (ten thousand hectares); the percentage of low-growing crops decreased from 23.74% to 22.1% over the entire study period.

**Tebale.2 Absolute and Relative change in Cropping Pattern of Maharashtra (000ha).**

N O	Crops	2000-01 to 2005-06		2005-06 to 2010-11		2010-11 to 2015-16		2000-01 to 2015-16	
		Absolute change	Relative change	Absolute change	Relative change	Absolute change	Relative change	Absolute change	Relative change
1	Rice	0.15	0.99	0.15	0.98	-0.09	-0.58	0.21	1.39
2	wheat	4.55	30.05	-3.53	-23.09	3.94	25.52	4.96	32.76
3	Jowar	-5.19	-34.28	-13.89	-90.84	3.87	25.06	-15.21	-100.46
4	Bajri	0.53	3.50	-6.14	-40.16	-0.01	-0.06	-5.62	-37.12
5	Ragi	-0.15	-0.99	7.41	48.46	-7.84	-50.78	-0.58	-3.83
6	Maize	2.54	16.78	-4.50	-29.43	9.23	59.78	7.27	48.02
7	Other Cereals	-0.39	-2.58	-0.02	-0.13	0.17	1.10	-0.24	-1.59
	Coarse Cereals	-2.66	-17.57	-17.13	-112.03	5.41	35.04	-14.38	-94.98
	<b>Total Cereals</b>	<b>2.04</b>	<b>13.47</b>	<b>-20.51</b>	<b>-134.14</b>	<b>9.26</b>	<b>59.97</b>	<b>-9.21</b>	<b>-60.83</b>
7	Tur	1.06	7.00	2.10	13.73	1.03	6.67	4.19	27.68
8	Mung	-1.38	-9.11	-1.40	-9.16	0.11	0.71	-2.67	-17.64

9	Udid	-0.98	-6.47	-1.26	-8.24	-0.26	-1.68	-2.50	-16.51
11	Gram	5.52	36.46	-2.33	-15.24	8.54	55.31	11.73	77.48
12	Other Pulses	0.18	1.19	-1.42	-9.29	0.19	1.23	-1.05	-6.94
Total Pulses		4.4	29.06	-5.31	-34.73	10.61	68.72	9.70	64.07
Total Foodgrains		6.45	42.60	-25.82	-168.87	19.87	128.69	0.50	3.30
13	Groundnut	0.21	1.39	-1.27	-8.31	0.32	2.07	-0.74	-4.89
14	Sesamum	-0.13	-0.86	-0.59	-3.86	-0.13	-0.84	-0.85	-5.61
15	Niger seed	-0.02	-0.13	-0.17	-1.11	-0.23	-1.49	-0.42	-2.77
16	Sunflower	0.89	5.88	-2.57	-16.81	-0.44	-2.85	-2.12	-14.00
17	Soyabean	14.16	93.53	4.89	31.98	8.31	53.82	27.36	180.71
19	Safflower	-0.08	-0.53	-1.48	-9.68	-0.55	-3.56	-2.11	-13.94
20	Linseed	-0.01	-0.07	-0.37	-2.42	-0.17	-1.10	-0.55	-3.63
21	Other Oilseed	0.02	0.13	-0.05	-0.33	-0.05	-0.32	-0.08	-0.53
Total Oilseeds		15.03	99.27	-1.60	-10.46	7.07	45.79	20.50	135.40
22	Sugarcane	2.71	17.90	1.73	11.31	-3.89	-25.19	0.55	3.63
23	Cotton	0.02	0.13	10.60	69.33	0.45	2.91	11.07	73.12
24	Tobacco	0	0.00	0.00	0.00	0.01	0.06	0.01	0.07
total		49.47	326.75	-84.48	-552.52	74.73	484.00	39.72	262.35
Net sown area		49.47	326.75	-84.48	-552.52	74.73	484.00	39.72	262.35
Area more than once		1982	13091.15	1285.00	8404.19	-534.00	-3458.55	2733.00	18051.52
Gross sown area		2031.47	13417.90	1200.52	7851.67	-459.27	-2974.55	2772.72	18313.87

Source: Compiled by Researcher based on Table 2

The pattern of various crops in Maharashtra is shown in **Table 2**. **Table 2** shows that in the first phase the total cultivated land area of the state increased by 2031.47 (000 hectares) or 13417.15 inches in absolute or relative terms. The actual and relative cultivated area increased by 1.20052 million hectares and 7871.37 hectares, respectively. The increase in the third stage is 459,270 hectares, and the relative increase is 2,974.55 hectares. In the fourth phase of the entire study period, the total cultivated land area increased by 2,772,720 hectares in absolute terms and by 18,313.87 hectares in relative terms. The total rice cultivation area in the first, second, third and fourth phase increased by 42.60 hectares, 168.87 hectares, 128.69 hectares and 3.30 hectares. The results showed that the actual yield of all crops increased by 2.40 (000ht), -20.51, 9.26 and 9.21 and 13.17 hectares -134.17, 59.97 and -60.83 in the first, second, third and fourth stages. . to follow. In the first, second and fourth periods, the total bean area increased in absolute numbers by 4.04, -5.31, 10.61 and 970 thousand hectares, respectively, and increased by 29.6, -34, 73, 68.72 and 64.07 percent, respectively. Determined. . Proportionally. to follow. The increase in oilseed areas is 15.03, -1, 06, 7, 07 and 120.50 thousand hectares, and the relative increase is 99.27, -10, 46, 45, 79 hectares. First, second and third levels are 135.40. IV is the corresponding level.

**Table 2** also shows that the change area of rice (1.39) increased, followed by (32.76) sesame (-4.89) soybean (-5.56) sunflower (-14.00) cotton (73.12) sugar (135.40) It is seen that tobacco (262.3) has increased. ) Peanut (3.30) Tur (27.68) Mung (-17.60) jowar (-100.40) All grains (-105.9) and other grains (94.98) Bajri (-37.12) ) Past (48.02) Phase I 3 (-) 60.8 () - 15-51) Other pulse (-6.94) g (77.48) decreased in the first phase of the observation period. Cropping patterns also illustrate a wide range of farming practices, from family-owned or unproductive crops to commercial or more productive fields.

Meat accounts for approximately 3.30% of GCA in grain production and 0.36% in legume production. Wheat and rice Bajri, the major grains grown in the state, account for 2.64% of rice, 2.20% of wheat and 1.45% of Bajra in GCA. Among pulses, gram and tur are the major crops; 3.33% of gram in tour and 2.48% of GCA are allocated to these crops (64.7% of pulse area). Oilseeds, especially soybeans, are mostly grown in the state. Approximately 6.63% of GCA is used in crop production. The study showed that depleted or unproductive crops like Ragi, Muki, Udid and sesame, sunflower, linseed and other oilseeds showed a negative impact on the region during the analysis period, while more profitable crops like Jowar rice, rice showed a negative impact on the region. , soybeans, corn, soybeans etc. See the quality of relative field changes. Therefore, cropping patterns also illustrate a wide range of agricultural practices, from subsistence or non-productive crops to commercial or more productive fields.

## CONCLUSION

Analyzing agricultural patterns is important because it provides evidence of ongoing changes in agricultural land use. In this study, area changes of different crops and crop groups according to current cropping patterns are mainly indicated by absolute and relative changes in the time period used. As can be seen from the table, the total area cultivated in the state increased from 3935.18 (000 hectares) to 6707.08 thousand hectares during the entire period. Net cultivation area increased from 539,180 hectares last year to 578,090 hectares last year. The study found that Maharashtra is primarily a food growing region where 64.7% of the total cropped area (GCA) consists of food, 7.62% legumes, about 3.30% rice and 0.36% rice. He found that there was a state. in the creation of the pulse. Wheat and rice Bajri, the major grains grown in the state, account for 2.64% of rice, 2.20% of wheat and 1.45% of Bajra in GCA. Among pulses, gram and tur are the major crops; 3.33% of gram in tour and 2.48% of GCA are allocated to these crops (64.7% of pulse area). Oilseeds, especially soybeans, are mostly grown in the state. Approximately 6.63% of GCA is used in crop production.

## SUGGESTIONS

This study examines the production of Ragi, Muki, Udid and sesame, niger seed, sunflower, flaxseed etc. during the studied period. It shows that diet or low-value crops such as crops show a relatively negative change in the regional area and the yield is low. Less than high crops; jowar rice, like rice. , soybeans, corn, soybeans etc. See the quality of relative field changes. Therefore, cropping patterns also illustrate a wide range of agricultural practices, from subsistence or non-productive crops to commercial or more productive fields.

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