



**P-ISSN: 2349-8528**

**E-ISSN: 2321-4902**

IJCS 2019; 7(1): 297-300

© 2019 IJCS

Received: 11-11-2018

Accepted: 15-12-2018

**Sushmita D Kale**

College of Agri-business  
Management, Gunjalwadi  
Pathar Affiliated by MPKV,  
Rahuri, Maharashtra, India

**Pranita P Sahane**

College of Agri-business  
Management, Gunjalwadi  
Pathar Affiliated by MPKV,  
Rahuri, Maharashtra, India

**Kajal V Khandagale**

College of Agri-business  
Management, Gunjalwadi  
Pathar Affiliated by MPKV,  
Rahuri, Maharashtra, India

**Correspondence**

**Sushmita D Kale**

College of Agri-business  
Management, Gunjalwadi  
Pathar Affiliated by MPKV,  
Rahuri, Maharashtra, India

## Studies on the changes in cropping pattern in selected Tehsils of Amravati district

**Sushmita D Kale, Pranita P Sahane and Kajal V Khandagale**

### Abstract

The present study was based on secondary data collected from various government publications and pertains to a period of 10 year i.e. from 2005-06 to 2014-15. Simple tabular analysis was used to examine the changes in cropping pattern in selected tahsils of Amravati district i.e. Warud, Anjangaon, Achalpur, Dhamangaon Rly. and Chandur Bajar. The area under Cotton and Gram are found to be increasing over the period of study while area of Udid and Mung had reduced in selected tahsils of Amravati district.

**Keywords:** cropping pattern, TUR, mung, udid, cotton, soybean wheat, gram

### Introduction

Cropping pattern is defined as a combination of agricultural crops that are grown in a particular geographical area. It can be viewed either in terms of the area allocated for each crop or by the production composition in value terms for any specific area. Therefore, changes in cropping pattern can be seen as the changes in proportion of acreage or the value of production under different crops to total agricultural area or production. The cropping pattern usually changes over time with the development of agriculture, as is evident in the case of agriculture in India.

It is a well noted fact that the growth of agricultural production depends on both acreage and productivity growth. Productivity growth can be further decomposed into two parts. One is the yield growth and other is the cropping pattern change. The former measures the impact of changes in output per unit of area, while, the latter captures the shift of acreage from crops with relatively low values of output per unit of area to higher value crops.

Cropping patterns are the yearly sequence of crops grown and the spatial arrangement of crops. It is formulated within view to obtain maximum crop production under a given situation. Cropping patterns are dynamic and changes occur with changes in factors of production and physiological and social environments. Modifications made in cropping patterns are always to drive the maximum benefit from changed crop growing conditions. Indian agriculture has been diversifying during the last two decades towards High-Value Commodities (HVCs) i.e., Fruits, Vegetables, Milk, Meat, and Fish products.

### Material and Methods

#### Analysis of changes in cropping pattern

##### Simple tabular analysis

Cropping pattern of selected tahsils of Amravati district was studied by simple tabular analysis for major crops. Cropping pattern in terms of percentage share of individual crops in gross cropped area were work out at different points of time.

### Results and Discussion

#### 1.1.1 Changes in cropping pattern in Warud tahsil

The changes in cropping pattern in Warud tahsil of Amravati district during 2005-06 to 2014-15 are presented in Table 1.

**Table 1:** Changes in cropping pattern in Warud tahsil (Area in "00" ha)

Sr. No.	Crops	Particulars				Per cent change over base period (2005-06)
		2005-06	2008-09	2011-12	2014-15	
1	Tur	10365 (17.75)	10364 (19.00)	10609 (17.96)	13944 (20.10)	34.52
2	Mung	484 (0.83)	125 (0.23)	162 (0.27)	65 (0.09)	-86.57
3	Udid	179 (0.31)	191 (0.35)	178 (0.30)	87 (0.13)	-51.39
4	Cotton	15957 (27.33)	15254 (27.97)	19890 (33.68)	28530 (41.12)	78.79
5	Soybean	16871 (28.89)	20373 (37.36)	10495 (17.77)	13575 (19.56)	-19.53
6	Wheat	3385 (5.80)	1900 (3.48)	3134 (5.31)	2134 (3.08)	-36.95
7	Gram	2234 (3.83)	1865 (3.42)	3805 (6.44)	7106 (10.24)	218.08
8	Other crops	8916 (15.27)	4465 (8.19)	10784 (18.26)	3947.93 (5.69)	-55.72
Gross Cropped Area		58391 (100)	54537 (100)	59057 (100)	69388.93 (100)	18.83

(Figures in the parenthesis are percentages over gross cropped area).

It is observed from the table 1 that contribution of Tur was 17.75 per cent in the year 2005-06 and it has increased to 20.10 per cent in 2014-15 of gross cropped area. The proportion of area under Mung and Udid were reduced for the entire period. The proportion of area under Cotton over gross cropped area was highest in the year 2014-15 i.e. 44.12 per cent and which is still the major crop in the tahsil. In case of Soybean its share over gross cropped area has decreased to 19.56 per cent in the year 2014-15 from 28.89 per cent in the year 2005-06. The proportion of area under Wheat has decreased over gross cropped area from 5.80 per cent to 3.08 per cent during the period of study. The proportion of area under Gram has increased upto 10.24 per cent in the year 2014-15 from 3.83 per cent in 2005-06. The contribution of other crops has decreased to 5.69 per cent in the year 2014-15 from 15.27 percent in the year 2005-06. The per cent change

over base period 2005-06 of Tur, Cotton and Gram were 34.52 per cent, 78.79 per cent and 218.08 per cent respectively, which indicates increase of acreage under these crops in study area. However there is negative change in Mung 86.57 per cent, Udid 51.39 per cent Soybean 19.53 per cent, Wheat 36.95 per cent and other crops 55.72 per cent respectively observed over base period. The gross cropped area has increased by 18.83 per cent over base period. So it is concluded that in the span of 10 years cropping pattern has changed substantially.

### 1.1.2 Changes in cropping pattern in Anjangaon tahsil

The changes in cropping pattern in Anjangaon tahsil of Amravati district during 2005-06 to 2014-15 are presented in Table 2.

**Table 2:** Changes in cropping pattern in Anjangaon tahsil (Area in "00" ha)

Sr. No.	Crops	Particulars				Per cent change over base period (2005-06)
		2005-06	2008-09	2011-12	2014-15	
1	Tur	6684 (12.07)	6179 (11.49)	8360 (14.90)	5366.7 (7.86)	-19.70
2	Mung	3953 (7.14)	2037 (3.79)	5480 (9.77)	2431.8 (3.56)	-38.48
3	Udid	401 (0.72)	125 (0.23)	680 (1.21)	420 (0.62)	4.73
4	Cotton	910 (1.64)	1045 (1.94)	1622 (2.89)	2310 (3.38)	153.84
5	Soybean	7082 (12.79)	19670 (36.59)	14076 (25.09)	21939 (32.14)	209.78
6	Wheat	3357 (6.06)	5250 (9.77)	2417 (4.31)	201 (0.29)	-94.01
7	Gram	7098 (12.82)	6070 (11.29)	7115 (12.68)	17890 (26.21)	152.04
8	Other	25886 (46.75)	13387 (24.90)	16345 (29.14)	17701.30 (25.93)	-31.61
Gross Cropped Area		55371 (100)	53763 (100)	56095 (100)	68259.8 (100)	23.27

(Figures in the parenthesis are percentages over gross cropped area).

It is observed from the table 2 that, contribution of Tur was 12.07 per cent in the year 2005-06 and it has decreased to 7.86 per cent in 2014-15 of gross cropped area. The proportion of area under Mung and Udid were reduced for the entire period, In case of Cotton its share over gross cropped area has increased to 3.38 per cent in the year 2014-15 from 1.64 per cent in the year 2005-06. The proportion of area under Soybean over gross cropped area was highest in the year 2014-15 i.e. 32.14 per cent and which is still the major crop in the tahsil. The proportion of area under Wheat has decreased over gross cropped area from 6.06 per cent to 0.29 per cent during the period of study. The proportion of area under Gram has increased upto 26.31 per cent in the year 2014-15. The contribution of other crops has decreased to

25.93 per cent in the year 2014-15 from 46.75 percent in the year 2005-06. The per cent change over base period 2005-06 of Udid, Cotton Soybean and Gram are 4.73 per cent, 153.84 per cent, 209.78 and 152.04 per cent respectively, which indicates increase of acreage under these crops. However there is negative change in Tur 19.70 per cent Mung 38.48 per cent, Wheat 94.01 per cent and other crops 31.61 per cent over base period 2005-06. The gross cropped area has increased by 23.27 per cent over base period.

### 1.1.3 Changes in cropping pattern in Achalpur tahsil

The changes in cropping pattern in Achalpur tahsil of Amravati district during 2005-06 to 2014-15 are presented in Table 3.

**Table 3:** Changes in cropping pattern in Achalpur tahsil (Area in "00" ha)

Sr. No.	Crops	Particulars				Per cent change over base period (2005-06)
		2005-06	2008-09	2011-12	2014-15	
1	Tur	12590 (16.22)	10462 (14.94)	10046 (17.53)	7152 (12.61)	-43.19
2	Mung	3168 (4.08)	750 (1.07)	347 (0.61)	312 (0.55)	-90.15
3	Udid	1327 (1.71)	465 (0.66)	562 (0.98)	276 (0.49)	-79.20

4	Cotton	873 (1.12)	937 (1.34)	1163 (2.03)	1389 (2.45)	59.10
5	Soybean	27869 (35.91)	30619 (43.73)	12922 (22.55)	17254 (30.42)	-38.08
6	Wheat	4056 (5.23)	8750 (12.50)	4100 (7.16)	1237 (2.18)	-69.50
7	Gram	2134 (2.75)	1500 (2.14)	2930 (5.11)	5721 (10.09)	168.08
8	Other crops	25594 (32.98)	16531 (23.61)	25227 (44.03)	23373.99 (41.21)	-8.67
Gross Cropped Area		77611 (100)	70014 (100)	57297 (100)	56714.99 (100)	-26.92

(Figures in the parenthesis are percentages over gross cropped area).

It is observed from the table 3 that contribution of Tur was 16.22 per cent in the year 2005-06 and it has decreased to 12.61 per cent in 2014-15 of gross cropped area. The proportion of area under Mung and Udid were reduced for the entire period, In case of Cotton its share over gross cropped area has increased to 2.45 per cent in the year 2014-15 from 1.12 per cent in the year 2005-06. The proportion of area under Soybean over gross cropped area was highest in the year 2014-15 i.e. 30.42 per cent and which is still the major crop in the tahsil. The proportion of area under Wheat has decreased over gross cropped area from 5.23 per cent to 2.18 per cent during the period of study. The proportion of area under Gram has increased upto 10.09 per cent in the year 2014-15. The contribution of other crops has increased to 41.21 per cent in the year 2014-15 from 32.98 per cent in the

year 2005-06. The per cent change over base period 2005-06 of Cotton and Gram are 59.10 per cent and 168.08 per cent respectively, which indicates increase of acreage under these crops. However there is negative change in Tur 43.19 per cent Mung 90.15 per cent, Udid 79.20 per cent, Soybean 38.08 per cent, Wheat 69.50 per cent and other crops 8.67 per cent observed over base period. The gross cropped area has decreased by 26.92 per cent over base period

#### 1.1.4 Changes in cropping pattern in Dhamangaon Rly. tahsil

The changes in cropping pattern in Dhamangaon tahsil of Amravati district during 2005-06 to 2014-15 are presented in Table 4.

**Table 4:** Changes in cropping pattern in Dhamangaon Rly. tahsil (Area in "00" ha)

Sr. no.	Crops	Particulars				Per cent change over base period (2005-06)
		2005-06	2008-09	2011-12	2014-15	
1	Tur	8023 (14.55)	6970 (13.10)	7879 (12.68)	5911 (6.79)	-26.32
2	Mung	647 (1.17)	290 (0.55)	164 (0.26)	132 (0.15)	-79.59
3	Udid	190 (0.34)	312 (0.59)	411 (0.66)	310 (0.36)	63.15
4	Cotton	20253 (36.74)	10316 (19.40)	19941 (32.08)	22884 (26.29)	12.99
5	Soybean	13678 (24.81)	29581 (55.62)	21923 (35.27)	35259 (40.51)	157.77
6	Wheat	6578 (11.93)	3880 (7.30)	6145 (9.89)	11253 (12.93)	71.07
7	Gram	2874 (5.21)	1630 (3.06)	4645 (7.47)	9724 (11.17)	238.34
8	Other crops	2881 (5.23)	207 (0.39)	1045 (1.68)	1558 (1.79)	-45.92
Gross Cropped Area		55124 (100)	53186 (100)	62153 (100)	87031 (100)	57.88

(Figures in the parenthesis are percentages over gross cropped area).

It is observed from the table 4 that contribution of Tur was 14.55 per cent in the year 2005-06 and it has decreased to 6.79 per cent in 2014-15 of gross cropped area. The proportion of area under Mung was reduced for the entire period. The contribution of Udid in the gross cropped area in 2014-15 was 0.36 per cent. In case of Cotton its share over gross cropped area has decreased to 26.29 per cent in the year 2014-15 from 36.74 per cent in the year 2005-06. The proportion of area under Soybean over gross cropped area was highest in the year 2008-09 i.e. 55.62 per cent and which is still the major crop in the tahsil. The proportion of area under Wheat has increased over gross cropped area from 11.93 per cent to 12.93 per cent during the period of study. The proportion of area under Gram has increased upto 11.17 per cent in the year 2014-15. The contribution of other crops has decreased to 1.79 per cent in the year 2014-15 from 5.23 per cent in the year 2005-06. The per cent change over base period 2005-06 of Udid, Cotton, Soybean, Wheat and Gram are 63.15 per cent, 12.99 per cent, 157.77 per cent, 71.07 per cent and 238.34 per cent respectively which indicates increase of acreage under these crop. However there is negative change in Tur 26.32 per cent Mung 79.59 per cent and other crops 45.92 per cent observed over base period 2005-06. The gross cropped area has increased by 57.88 per cent over base period. So it is concluded that in the span of 10 years cropping pattern has changed substantially

#### 1.1.5 Changes in cropping pattern in Chandur Bajar tahsil

The changes in cropping pattern in Chandur Bajar tahsil of Amravati district during 2005-06 to 2014-15 are presented in Table 5.

It is observed from the table 5 that contribution of Tur was 12.23 per cent in the year 2005-06 and it has increased to 13.90 per cent in 2014-15 of gross cropped area. The proportion of area under Mung and Udid were reduced for the entire period. In case of Cotton its share over gross cropped area has decreased to 26.62 per cent in the year 2014-15 from 26.78 per cent in the year 2005-06. The proportion of area under Soybean over gross cropped area was highest in the year 2008-09 i.e. 46.91 per cent which is still the dominant crop in the tahsil. The proportion of area under Wheat has increased over gross cropped area from 3.90 per cent to 5.70 per cent during the period of study. The proportion of area under Gram has increased upto 7.99 per cent in the year 2014-15. The contribution of other crops has decreased to 5.13 per cent in the year 2014-15 from 9.58 per cent in the year 2005-06. The per cent change over base period 2005-06 of Tur, Soybean, Wheat and Gram are 8.73 per cent, 7.61 per cent, 39.88 per cent and 101.70 per cent respectively, which indicates increase of acreage under these crops. Observed from the table that there is negative change in Mung 85.81 per cent Udid 89.07 per cent Cotton 4.85 per cent and other crops 48.74 per cent observed over base period 2005-06. The gross cropped area has decreased by 4.28 per cent over base period.

**Table 5:** Changes in cropping pattern in Chandur Bajar tahsil (Area in "00" ha)

Sr. No.	Crops	Particulars				Percent change over base period (2005-06)
		2005-06	2008-09	2011-12	2014-15	
1	Tur	8320 (12.23)	7378 (12.82)	11301 (15.72)	9046.8 (13.90)	8.73
2	Mung	3827 (5.63)	3205 (5.57)	2342 (3.26)	543 (0.83)	-85.81
3	Udid	2014 (2.96)	1362 (2.37)	940 (1.31)	220 (0.34)	-89.07
4	Cotton	18212 (26.78)	12512 (21.73)	19488 (27.11)	17327 (26.62)	-4.85
5	Soybean	23886 (35.12)	27004 (46.91)	24450 (34.01)	25704 (39.49)	7.61
6	Wheat	2650 (3.90)	5190 (9.02)	1466 (2.04)	3707 (5.70)	39.88
7	Gram	2580 (3.79)	2200 (3.82)	5995 (8.34)	5204 (7.99)	101.70
8	Other	6514 (9.58)	-1281 (-2.23)	5912 (8.22)	3339 (5.13)	-48.74
Gross Cropped Area		68003 (100)	57770 (100)	71894 (100)	65090.8 (100)	-4.28

(Figures in the parenthesis are percentages over gross cropped area).

### Comparative study of cropping pattern changes in selected tahsils of Amravati district

From the Table 6 we can observed that the per cent change over base period in area of Gram and Cotton has increased in all the selected tahsils whereas the area under Mung and other

crops has decreased in all the tahsils over the period of study. The analysis of cropping pattern changes in selected tahsils of Amravati district revealed that Cotton and Gram were the major crops of Amravati district.

**Table 6:** Comparative study of cropping pattern changes in selected tahsils of Amravati district

Sr. No.	Crops	Percent change over base period (2005-06)				
		Warud	Anjangaon	Achalpur	Dhamangaon Rly.	Chandur Bajar
1	Tur	34.52	-19.70	-43.19	-26.32	8.73
2	Mung	-86.57	-38.48	-90.15	-79.59	-85.81
3	Udid	-51.39	4.73	-79.20	63.15	-89.07
4	Cotton	78.79	153.84	59.10	12.99	-4.85
5	Soybean	-19.53	209.78	-38.08	157.77	7.61
6	Wheat	-36.95	-94.01	-69.50	71.07	39.88
7	Gram	218.08	152.04	168.08	238.34	101.70
8	Other	-55.72	-31.61	-8.67	-45.92	-48.74
Gross Cropped Area		18.83	23.27	-26.92	57.88	-4.28

### References

- Ahmad Fahim Rahimi. An economic analysis of changes in cropping pattern in Karnataka. Karnataka J Agric. Sci. 2012, 25(4).
- Alagh M. Indian agriculture-Growth and change. Agric. Situ. India. 2007; 64(5):55-66.
- Batla Seema. Regional Dimensions of Inter Crop Diversification in India: Implications for Production and Productivity Growth. Agric. Situ. India. 2008; 64(12):601-620.
- Chinky Sangral. Changes in Cropping Pattern and Crop Diversification in Jammu and Kashmir. Journal of Humanities and Social Sciences. 2015; 20(4):7-9.
- Dinesh Marothia K, Singh RK, Koshta AK. Crop Diversification: Post-Reform lessons learnt from Chattisgarh. Agric. Situ. India. 2007; 64(5):215-226.
- Dinesh Kumar Nayak. Changing Cropping Pattern, Agricultural Diversification and Productivity in Odisha - A District-wise Study. Agricultural Economics Research Review. 2016; 29(1):93-104.
- Goswami SN, Dubey PN, Challa O. Land Use Dynamics in Mizoram, Agric. Situ. India. 2003; 60(8):531-538.
- Goswami SN, Challa. Indian Land use scenario: An Overview. Agric. Situ. India. 2004; 60(11):783-797.
- Hazra CR. Diversification in Indian agriculture. Agric. Situ. India. 2001; 48(9):409-522.
- Jayakumar G, Velayudham KV. Agricultural stagnation in Kerala: Cause and Consequence. Southern Economist. 2002; 41(1):9-12.
- Kamalika Majumder. Nature and Pattern of Crop Diversification in West Bengal. International Journal for Research in Management and Pharmacy. 2014; 3(2):33-41.
- Kebede Ergano, Mehta VP, Dixit. Diversification of Agriculture in Haryana: an empirical analysis. Agric. Situ. India, New Delhi, 2000.
- Kumar P, Mittal S. Crop diversification in India: Analysis by state and farm size group. Agric. Situ. India. 2003; 60(5):273-280.
- Meenakshi R, Indumathy R. Land Utilization and Cropping Pattern in Tamil Nadu, Indian J. Agric. Econ. 2009; 64(10):145-153.
- Rubeenah Akhter, Dr. Rekha Acharya. Changes in Cropping Pattern in Jammu and Kashmir. International Journal of Advanced Research in Education and Technology (IJARET), 2015, 2(4).
- Sheeba Andrews. Dynamics of Cropping Pattern Shifts in Kerala: Sources and Determinants. 2013; LXX(6):15-24.
- Shelar Suresh Kautik, Raut Vinod Ramdas. Attempted to analyze the agricultural land use pattern in Nashik District. International Multidisciplinary Research Journal. 2015; 4(7):1-5.
- Virender Kumar, SK Sharma, HR Sharma. Changing cropping pattern in Himachal Pradesh, A district-wise study Himachal J Agric. Reg. 2002; 28(1-2):58-62.