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## AGRICULTURAL TRENDS IN RATNAGIRI DISTRICT



Suryawanshi J.S.<sup>1</sup> and H.N.Redde<sup>2</sup>

**OBJECTIVES:** (i) To examine the overall changes in the broad landuse categories. (ii) To interpret the changes in area, production, and yield of crops during the study period.

### INTRODUCTION

The Ratnagiri is one of the districts in Konkan Administrative Division of the Maharashtra State. The study region where about 70% of the population rests upon agriculture for their livelihood. Although the agricultural condition differs from Ratnagiri district to Maharashtra State, the cultivated area is controlled by physiography and climate of the district. Agriculture the main occupation of people in the region is largely of intensive subsistence type, where paddy is the single important crop and clearly dominates the entire economy of the region. Horticultural wealth of

### ABSTRACT

*The Agricultural trends are explained through the area, production and yield components during the two decades in the study region. The percentage of area under forest is very low which essentially means intense use of land for cultivation. The area covered by the forest is nearly 0.71% in 2011-12, while it was 0.66% of the total reported area in 1991-92. The increase in net cultivated area can be explained by the decline in the forest area and fallow land. The total gross cropped area increased from 234011 hectares in 1991-92 to 271804 hectares in 2011-12. There is marked 16.15% increase in total gross cropped area during the period of investigation. There has been a shift of area from cereal crops and oil seeds to the pulses crops and horticulture. The outputs of principal crops are increased except nachani and groundnut during the study period. The highest yield growth is noticed in kulith which is rose by 2.86 times.*

**KEYWORDS :** landuse pattern, cropping pattern, production variability, yield variability.

### Short Profile

Suryawanshi J.S. is a Research Student at Department of Geography in S.C.S.College, Omerga, Dist.Osmanabad (M.S.).

the district is very significant. The share of horticulture in total gross cropped area has shown an upward trend during the last three decades.

### STUDY REGION

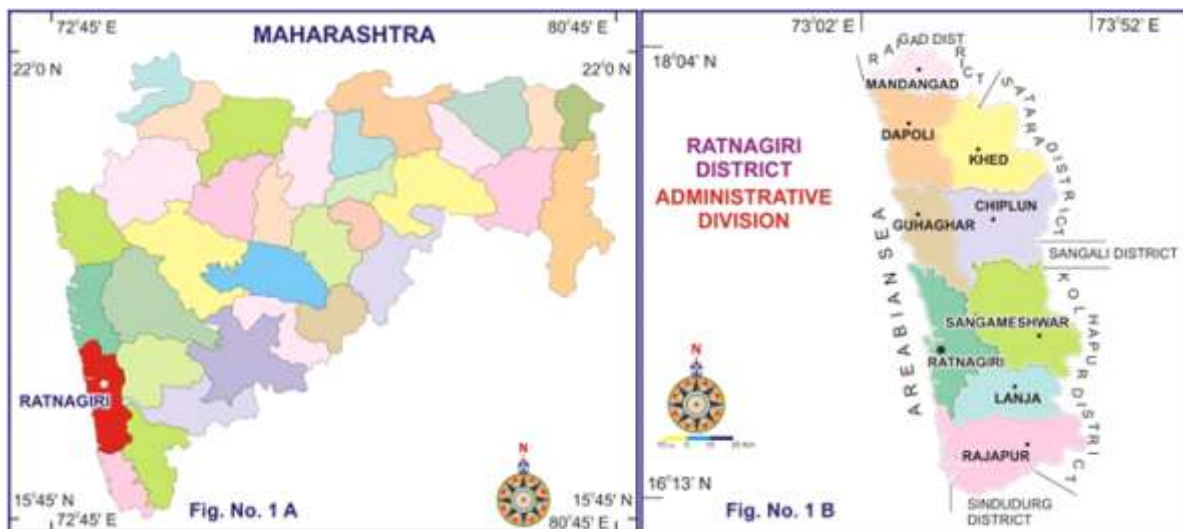
Ratnagiri district is situated between 16013' to 1804'N latitude and 7302' to 73052'E longitude. The total geographical area of the district is recorded 8208sq.km. and population 16,15,069 persons as per 2011 census. Ratnagiri district comprising the nine tahsils namely Mandangad, Dapoli, Khed, Chiplun, Guhagar, Ratnagiri, Sangameshwar, Lanja, and Rajapur. The district covers only 2.7% of

the total geographical area of the state. On the basis of local variation in physiography, the district can be grouped into three parts i.e. the Sahyadri hills, Ratnagiri plateau and the Ratnagiri coast.

Research Student , Dept. of Geography , S.C.S.College, Omerga , Dist.Osmanabad (M.S.)

The study region being a coastal district, geographical position and relief and provide a climatic conditions is strongly influenced by its major physical control in rural landuse.

Location map



DATA BASE AND METHODOLOGY

The basic data for the present study have been obtained from the socio-economic review and district statistical abstract of Ratnagiri district for the period 1991-92 and 2011-12. Almost all main crops have been included namely, rice, nachani, vari, tur, wal, kulith, groundnut, etc. Besides computing the percentages change in area and production, yield variability has also worked out. The collected data was processed, edited and analyzed and presented through labels and figures.

RESULTS AND DISCUSSION

Landuse Pattern

Landuse pattern is an important aspect of

geographical studies and the progress of an area can be measured to certain degree by the way, in which its land is used and maintained.

Table -1 shows the area under different categories of landuse as percentage to total reported area. The area covered by forest is merely 0.71% in 2011-12, while it was 0.66% of the total reported area in 1991-92. There is marked 0.05% increase in area under forest during the period of investigation. The area not available for cultivation occupied 21.71% of the total area in 1991-92, the proportion increased about 23.40% in 1997-98, but after 1997-98, it started increasing and reached upto 26.83%, during 2011-12.

Table-1: Landuse Pattern of Ratnagiri District (Percentage to reported area) from 1991-92 and 2011-12

S N	LanduseCategories	Years				Volume of change		
		1991-92	1997-98	2004-05	2011-12	1991-1998	1998-2005	2005-2012
1	Area under forest	0.66	0.81	0.71	0.71	0.15	-0.1	0
2	Area not available for cultivation	21.71	23.40	26.79	26.83	1.69	3.39	0.04
3	Other cultivated land	25.04	30.79	26.42	26.41	5.15	-4.37	-0.01
4	Fallow land	24.18	14.05	14.81	13.79	-10.13	0.76	-1.02
5	Net area sown	28.41	30.95	31.27	32.26	5.54	0.32	0.99

Source: Computed by Author

The increase in this category of land use may be attributed to shifting of land area for housing purposes, road and industrial establishments. Other cultivated land comprised 25.04% of the total geographical area of the district in 1991-92. It increased up to 30.79% in 1997-98. But after 1997-98 it decreased up to 26.41% in 2011-12. The fallow land has also undergone change which noted as 24.18% in 1991-92 and 13.79% in 2011-12. Another major change has been noticed in percentage share of net sown area, which is increased from 28.41% to 32.26%. The increase in net sown area can be explained by the decline in fallow land.

#### Cropping pattern

The share of individual crops in the gross cropped area in study region at four points of time is presented in table-2. It is clear from the table that the cropping pattern of this district was dominated by the foodgrains in the past and shows a wide gap in the percentage of main important set of crops, such as food cereals, food pulses, fruit and vegetables, oilseeds and other non-food-crops.

In the period of 1991-92 to 1995-96, the total gross cropped area was 234011 hectares. Of

the total gross cropped area 36.11% area was under rice, 3.08% area under vari, 12.34% area under nachani and 3.33% area were under other cereal crops. It means 54.86% area was under total cereals whereas the area share of total pulses was marked 1.05%. The percentage share of fruits and vegetables area in total gross cropped area was registered 7.7% from 1991-92 to 1995-96. While percentage share of total oilseeds and fodder crops were marked 2.70% and 33.50% respectively. During the second quinquennium (1996-97 to 2000-2001) the total gross cropped area increased from 234011 to 250913 hectares. Area under total cereals decreased from 54.86% to 42.41% in second quinquennium. The share of rice, vari, nachani and other cereals were declined from 36.11% to 31.64%, 3.08% to 1.75%, 12.34% to 8.21% and 3.33% to 0.80% respectively. Total pulses area was slightly increased from 1.05% to 1.54% in this quinquennium. The overall area share of fruit and vegetables increased from 7.7% to 11.78% during the same period. Whereas, area under total oilseeds declined from 2.70% to 2.43% and area under fodder crops was increased from 33.50% to 41.50% during the second quinquennium.

Table-2: Ratnagiri District: Percentage area under Principal crops to Gross cropped area for 1991-92 to 2011-12

S. N.	Crops	1991-92 to 1995-96	1996-97 to 2000-01	2001-02 to 2005-06	2006-07 to 2011-12
1	Rice	36.11	31.64	25.47	28.31
2	Vari	3.08	1.75	2.18	1.99
3	Nachani	12.34	8.21	6.16	6.38
4	Other Cereals	3.33	0.80	1.20	0.05
5	Total Cereals	54.86	42.41	35.02	36.74
6	Total Pulses	1.05	1.54	2.48	2.89
7	Condiments & spices	0.19	0.35	0.35	0.28
8	Fruits & Vegetables	7.7	11.78	15.12	52.1
9	Total oilseeds	2.70	2.43	1.76	0.86
10	Fodder crops	33.50	41.50	45.48	7.13

Source: Computed by the Author.

During third quinquennium (2001-02 to 2005-06) the total gross cropped area increase from 250913 hectares and marked 23.36%

increase in it. Of the total gross cropped area about 35.02% area was under cereals. Vari and other cereal crops showed increase from 1.75% to 2.18% and 0.80% to 1.20% respectively. The

share of rice and nachani decline from 31.64% to 25.47% and 8.21% to 6.16% respectively during the same period. The percentage share of the total pulses increased from 1.50% to 2.44%. Total fruits and vegetables area increased 11.78% to 15.12%, whereas, total oilseeds crops area decreased from 2.43% to 1.76% and fodder crops increased from 41.50% to 42.23% during third quinquennium. During the fourth quinquennium the total gross cropped area was decreased by 37728 hectares. During this period area under total cereal slightly increased from 35.02% to 36.74%, while area under total pulses increased from 2.48% to 2.89%, fruits and vegetables area

increased from 15.12% to 51.1%, while the area under total oilseeds decreased from 1.76% to 0.86% during the last quinquennium.

**PRODUCTION VARIABILITY**

Table-3 depict that the output of rice increased (1.13 times) from 1946 hundred metric tons in 1991-92 to 2216 hundred metric tons in 2011-12. Whereas, the cultivated area under rice was marked 8.95% decrease during the period of investigation. The production of vari increased from 17 hundred metric tons in 1991-92 to 20 hundred metric tons in 2011-12.

**Table-3: Ratnagiri District: Trends in Production of Selected crops and Contributions to it by Yield and Area, 1991-2012**

S. N.	Crops	Production in '00' tons		% of change 1991-92 to 2011-12	Contribution to Increase/decrease in%	
		1991-92	2011-12		Yield	Area
1	Rice	1946	2216	13.87	18.93	-8.95
2	Vari	17	20	17.64	38.39	-15.14
3	Nachani	36	19	-47.22	27.87	-35.95
4	Tur	01	02	100	7.29	120.89
5	Mung	0.35	0.50	42.85	35.48	105.88
6	Wal	14	18	28.57	37.75	315.71
7	Kulith	12	16	33.33	186.52	56.85
8	Gram	1.7	2.4	41.17	-6.39	56.89
9	Groundnut	07	3.10	-55.71	16.29	-19.70
10	Sesame	1.5	02	33.33	16.80	12.10

Source: Computed by the Author

The per hectare yield of vari was marked 38.91% increase during the study period, while area under vari has registered 15.14% decrease during the same period. The output of nachani has recorded -47.22% decreases during the last 21 years. The average per hectare yield was marked 27.87% increase, where the cultivated area has decreased by 39.95% during the study period. The output of all selected pulses are increased during the study period. Whereas, the production of groundnut is decreased by 55.71% between 1991-92 and 2011-12.

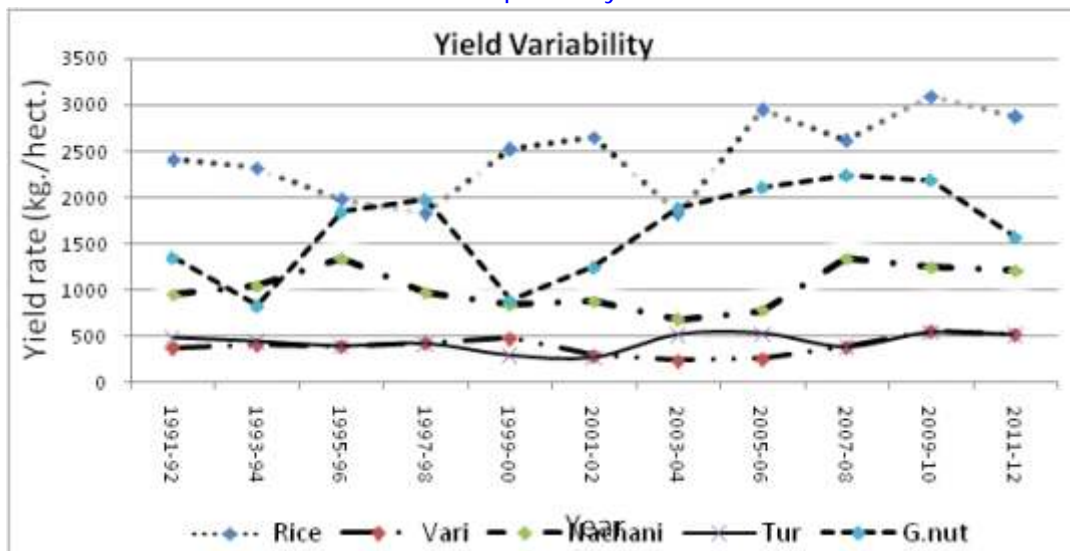
**Yield variability**

Unlike the result of area and production, the yield has also increased for all selected crops except gram, which is declined 1.06 times during the period under study (Fig.-1). The highest growth is noticed in Kulith, which is rose by 2.86 times. Vari has also marked high yield (1.38 times) which rose from 310kg./hect. to 1991-92 to 420kg./hect. in 2011-12.

Table-4: Ratnagiri District: Yield/hectare in kg. for different crops (1991-92 to 2011-12)

Year	Rice	Vari	Nachani	Tur	Mung	Wal	Kulith	Gram	G.nut	Sesame
1991-92	2413	370	947	480	310	392	320	532	1350	450
1993-94	2310	405	1042	442	288	425	438	564	825	518
1995-96	1970	390	1340	392	266	290	388	575	1845	645
1997-98	1820	425	972	418	270	325	299	550	1975	675
1999-00	2517	470	840	290	335	412	382	540	888	577
2001-02	2640	290	877	266	352	560	552	492	1244	495
2003-04	1832	235	682	515	382	540	569	420	1882	500
2005-06	2944	255	778	530	430	510	570	413	2110	510
2007-08	2612	382	1344	382	445	495	675	460	2240	702
2009-10	3090	548	1244	540	405	466	690	436	2190	692
2011-12	2870	514	1211	515	420	540	659	498	1570	515

Source: Computed by the Author.



There is also a definite upward trend in case of rice (1.18 times), vari (1.38 times), Nachani (1.27 times) and groundnut (1.16 times). Table-4 presents yield of different crops. The growth behavior of yield is almost synonymous to the growth in production levels. However, in case of nachani and groundnut, the area and production tended to decline, but the yield per hectare is increased about 1.27 times and 1.16 times respectively. On the contrary yield of gram declined by 1.06 times, while area and production have increased during the period of investigation.

**CONCLUSION**

The agricultural trends are explained

through the area, production and yield components during the two decades in the study region. There has been shift of area from rice, vari, nachani and groundnut to the pulses crop and sesame. The production of these two crops grew rapidly with the marked increase in the yield level. However, the per hectare yield for all crops increased with only exception of gram. Therefore, offset the effect of area in the production and indicated towards the more pronouncing effect of new agricultural technology.

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