

## **COMPARATIVE ANALYSIS OF DIFFERENT CROPS IN SANGLI DISTRICT**

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### **Abstract**

The study was conducted in Sangli district during 2012-13 to make comparative profitability analysis of main crop production in Sangli district. Primary data was collected through structured questionnaire. A sample size of 550 farmers was used and the respondents were randomly selected. For comparison, Cost-Benefit and profitability analysis approach was used. Jawar, wheat, sugarcane, cotton, soybean, pomegranate and grapevine etc, are the important crops of Sangli district. The cost benefit ratio grapevine cultivation is highest; i.e.1.1.65, where as it is 1.1.58, 1.1.53, 1.1.50, 1.1.29, 1.1.24 and 1.1.16 that of pomegranate, soyabean, sugarcane, maize, jawar and wheat respectively. The highest BCR value is observed for grape indicated the most profitable variety in terms of net production in Sangli district. The main aim of the present paper is to comparative study main crops cultivation in the Sangli District.

**Keywords:** Crops, fruit farming, cost benefit ratio, Cost of production, Net profit etc.

### **Introduction:**

Agriculture has been the backbone of the Indian economy and it will continue to remain so for a long time (Pandey, 2009). It is only a sector, which provides food to rapidly rising population, nutritional security to the people and overall economic welfare. It also promotes industrial development through providing raw material to the agro based industries and other sectors. Many considerations have influenced the choice of the region under consideration. The region selected for investigation is predominantly agricultural, being the backbone of its

economy. Sangli is one of the major agriculturally developed district in the Western Maharashtra. The economy of the district is predominantly agriculture based. Climatic and socio-economic condition is changing the nature of agriculture in the study region. The region has experienced frequent droughts conditions, it affected severely on farming; which has resulted changes the cropping pattern. However the western part of district has possibility of water supply from river Krishna. Therefore, western region has high proportion of land under Sugarcane cultivation. Most of the area lies in the eastern part of the district has attempt to grow grapes area with the help of Irrigation. The region selected has its importance of agricultural richness for Grapes and sugarcane crops. Agriculture in the Sangli district is mostly of the intensive subsistence type. Jawar, wheat, sugarcane, cotton, soybean, pomegranate and grapevine, etc, are the important crops of Sangli district (Gaikwad, 2014). Diversified form of agriculture, in term of cultivation of crops, is the main feature of the area. Sugarcane and spice crops are mostly cultivated, specifically middle and western part of the study area, grape concentrate in central and eastern central part of the district where irrigation facilities are available and jawar and bajara are cultivated in the dry eastern part of the district (Gade & Gaikwad, 2014). In this paper an attempt is made to study the economics of these crops is examined and analyses to understand the level of profit received by farmers from these crops. The study will be helpful for farmers and agriculture economists in terms of knowing about the cost and revenue parameters in Sangli district.

#### **Study Region:**

The Sangli district is situated in western part of Maharashtra State. This district consist ten tahsils covering 731 villages. The total area extend is of 8572 sq. km. extending from 16° 45' to 17° 33' north latitudes and 73° 42' to 75° 40' east longitudes. It is bounded by Solapur and Satara districts in the North, Bijapur district in the east, Belgaum district in the south and the Ratnagiri district to the West {Fig1.1}. The climate of the district is generally dry. In general the rainfall was decreases from west to east from 4000 to 500 mm. From central part eastward the region faces severe drought conditions. The average annual rainfall of the district is 618.66 mm, the temperature ranges from 14.80<sup>0</sup> C to 38.4.

#### **Objectives:**

- 1) To study the area under crops and fruits in Sangli district.
- 2) To analyse the production cost of crops in Sangli district.
- 3) To compare cost benefit ratio of crops in Sangli district.

#### **Materials and Methods:**

The study was carried out of the Sangli district during 2012-13. The farmers were also selected randomly.

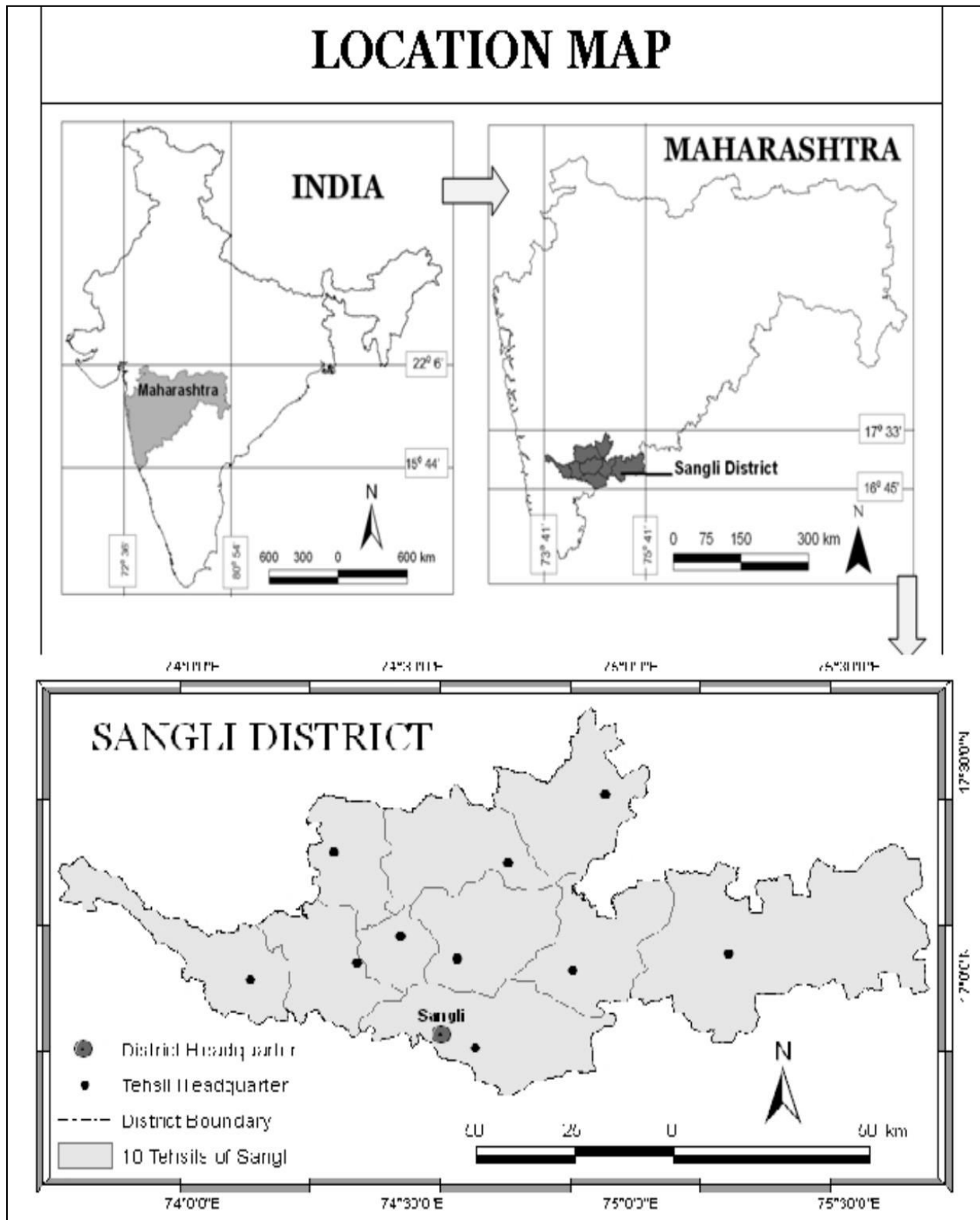


Fig 1

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Primary data was personally collected from the respondents through structured questionnaire. The data about main crops and their costs and revenues were collected in the farmer's fields, homes or in community centers. Primary data were collected from the selected processing unit with the aid of pre-tested interview schedule. From the processor, details of information such as investment pattern, labour use, processing cost and production techniques were collected.

Benefit cost ratios of Grapes, pomegranate, soyabean, sugarcane, maize, jawar and wheat have been calculated for finding the most profitable grapes variety in terms of total and net revenue. More specifically the benefit cost ratio (BCR) for each variety was:

$$BCR = VNR / TC$$

Where, VNR = Variety net revenue and TC = Total cost of the variety

More and more the value of Benefit Cost Ratio more will be the net return. Furthermore, basic arithmetic's, averages, classification and tabulation were used for the analysis.

**Table No 1: Area under Different Crops in Sangli District, 2012-2013 ('00` hect)**

Tahsils	Rice	Wheat	Jawar	Bajara	Maize	Gram	Soyabe en	Sugar cane	Ground nut	Other Pulses	Other crops	Total
Miraj	0.7 3	35.9 8	188.3 7	11.7 9	156. 21	33.2 6	149. 18	140. 6	21.8	56.1 2	16.0 6	810.1
Walva	19. 73	36.9 8	55.44	00	11.3 8	47.6 3	179. 22	293. 52	48.0 8	28.9	33.0 6	753.9 4
Palus	2.1 5	9.12	24.18	00	12.0 7	19.2 5	52.8	85.2 6	10.4 7	11.2 3	7.67	234.2
Shirala	126 .5	8.98	47.48	00	21.7 4	5.98	31.6 9	45.3 5	30.5	1.71	1.11	320.5 9
Kawat e. Mahan kal	00	14.8	237.8 4	109. 48	49.1 9	15.8 7	6.75	16.5 3	7.4	29.0 7	2.73	489.6 6
Khana pur	00	38.0 6	228.3	32.3	76.5 5	27.7 5	28.9	7.89	25.3 2	55.5 4	18.2 2	538.8 3
Kadega on	2.0 4	14.3 5	222.7 7	14.4 5	14.3 1	5.22	35.3 9	88.2 6	39.8 6	35.5 9	8.12	480.3 6
Tasga on	00	27.7	265.6 3	3.12	45.0 2	37.3 6	62.3 3	14.1 8	45.2 6	34.3 7	4.57	539.5 4
Jath	00	42.8	689.4 9	387. 27	159. 97	26.0 1	00	9.44	30.2 5	163. 27	35.3	1543. 8
Atpadi	00	11.5 5	206.9 4	100. 77	24.5	11.1 1	00	2.05	0.45	4.6	1.85	363.8 2
Total	150 .7	240. 32	2166. 44	659. 18	570. 94	229. 44	546. 26	703. 08	259. 39	420. 4	128. 19	6074. 84

Source: District Agriculture office, Sangli.

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Tables No1 reveal tahsil wise area under different crops in study region. The total cropped area is 6074.84 hectares during 2012-13. It shows that Jawar is the dominant crop in the district. It is cultivated in 216644 hectares which accounts 35.66 per cent of total cropped area. Sugarcane is the next crop, which is cultivated in 70308 hectares, recurring 11.57 per cent of total cropped area. While the Bajara (10.85 per cent), Maize (9.39 per cent), Soyabean (8.99 per cent), Pulses (6.92 per cent), Groundnut (4.26 per cent), Wheat (3.95 per cent), Gram (3.77 per cent), Rice (2.48 per cent) and other crops 2.11 per cent of the total area under different crops that varies in different blocks.

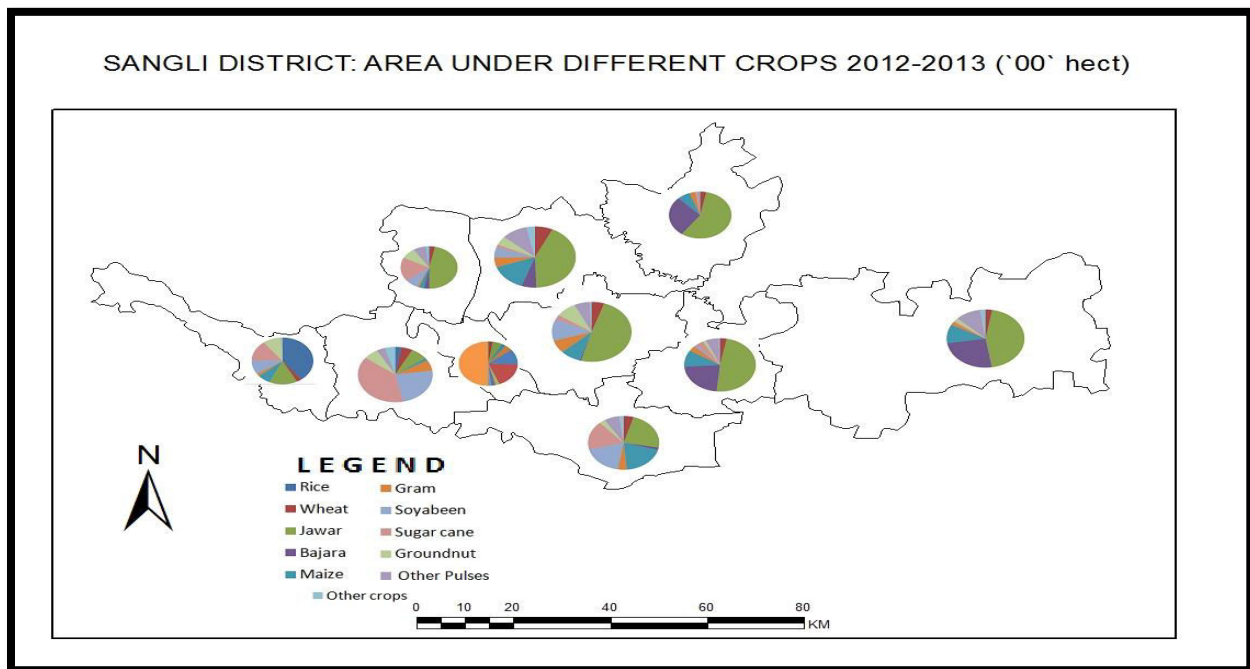


Fig 2

Fruit Farming in Sangli District:

Table No 2: Area under Fruit Crop in Sangli District 2012-13 (in hectares)

Fruit	Walwa	Khana pur	Kadegaon	Tasgaon	Palus	Miraj	Kavathe	Jat	Shirala	Atpadi	Total
Grape	492.57	743.24	246.91	4893.09	1066.	5537.75	967.10	4085.39	0.69	72.13	18105.44
Pomegranate	0.40	209.07	54.90	65.13	3.67	109.30	777.64	3548.41	-	2496.55	7265.07
Mango	73.00	134.29	217.17	219.34	81.24	253.67	53.68	352.41	163.46	83.67	1631.93
Banana	141.93	15.19	23.37	44.52	137.4	326.36	23.38	64.24	4.60	8.23	789.31
Coconut	74.57	7.74	40.31	32.55	58.93	301.71	14.58	300.07	12.73	31.25	874.44

Sopata	20.1 2	6.84	15.0 1	32.89	9.60	111.1 4	90.85	254.8 4	15.4 3	36.56	593.28
Guava	6.87	1.80	7.66	10.44	6.77	45.64	5.42	128.0 1	2.78	9.24	224.83
Custard Apple	2.15	5.65	4.48	22.09	1.60	28.66	20.42	137.4 3	9.12	16.33	247.93
Chinch	0.05	6.30	8.62	3.23	0.62	17.00	—	88.88	0.30	9.98	134.98
Lemon	1.18	0.30	2.91	3.71	1.86	14.05	1.60	214.0 7	1.13	3.08	243.89
Other	4.05	10.6 2	7.11	8.82	4.93	19.77	6.67	153.6	4.69	17.74	238.00
Total	816. 89	1140	628. 45	5335. 8	1373 .	6765. 25	1961. 54	9327. 35	214. 93	2784. 76	30349. 10
Share in %	2.69	3.75	2.07	17.58	4.52	22.29	6.46	30.73	0.70	9.17	100 %

Source: District Agriculture office, Sangli

Sangli district is mostly situated in central western Deccan fruit farming zone, which is known as transitional zone (Deshmukh, 1986). The zone is experiencing partly humid and partly dry climate. This region grows tropical and subtropical fruits like mango, sopata guava, jackfruit, banana, pineapple and grapes. In the study region area under fruit farming has 30349.10 hectare with total production of 628331.07 MT in 2011-12. Various fruits are grown, where in Grape, Pomegranate, Mango, Banana, Coconut, Banana and Sapota are the major one, which occupies more than 96.38 per cent of the total area under fruits in study region. Grape is one of the commercial fruits grown in this region.

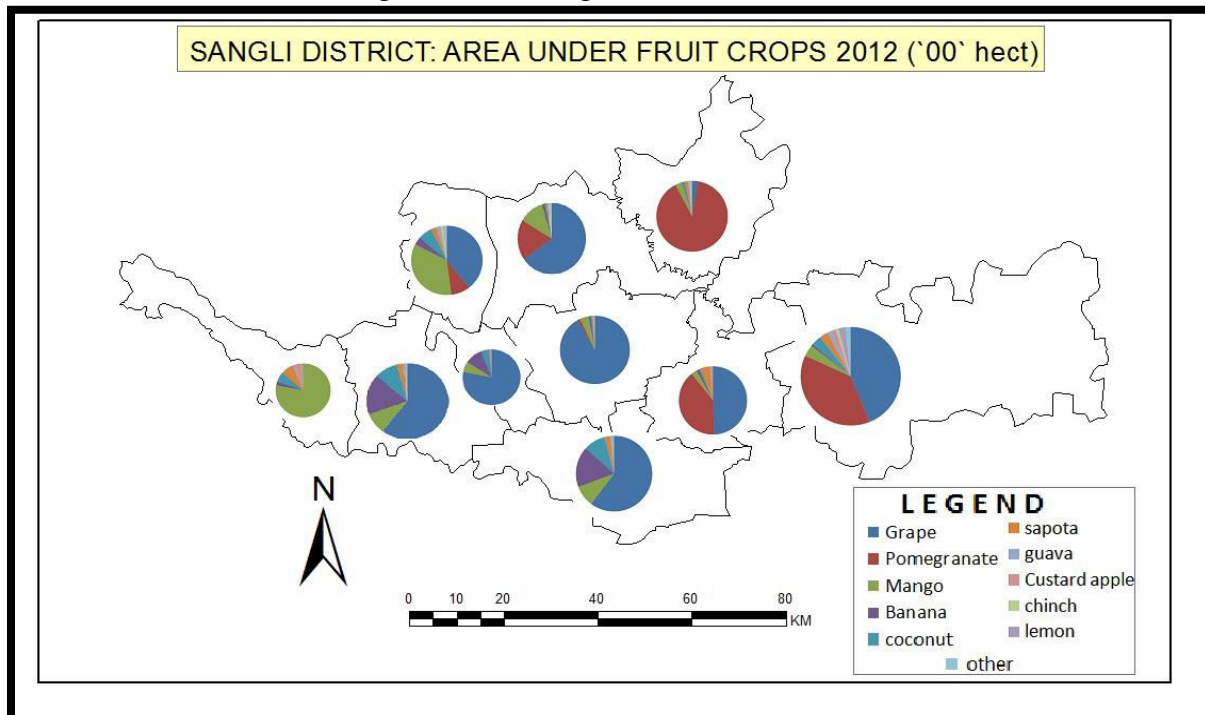




Fig. 3

Table No 2 reveals that the area under of fruit crops in the Sangli district in 2012-13. The total area under fruit is 30349.10 hectares during 2012-13. It is observed that is highest area under Grapes which has covered area of 18105.44 (59.65 per cent) hectares in the region. It is followed by, pomegranate (23.93 per cent) and mango (5.37 per cent), Coconut (2.88 per cent), Banana (2.60 per cent), Sopata (1.95 per cent), Custard Apple (0.81 per cent), Lemon (0.80 per cent), Guava (0.73 per cent), Chinch (0.44 per cent), other crops 0.78 per cent of the total area under different crops that varies in different blocks (Fig.3)

### COMPARATIVE ANALYSIS OF MAIN CROPS

Agriculture in the Sangli district is mostly of the intensive subsistence type. Jawar, wheat, sugarcane, cotton, soybean, pomegranate and grapevine, etc, are the important crops of Sangli district. Among the total crops, jawar occupying highest cultivated area 26.88 per cent, sugarcane 8.72, soyabean 6.77, grapes 2.99, wheat 2.28 and pomegranate 0.90 per cent of the total cropped area.

**TABLE No 3 COMPARATIVE ANALYSES OF OTHER CROPS AND GRAPEVINE**

Sr.No	Crops	Average yield per hectare in Kg	Cost of production	Gross return	Net profit	C.B.R
1	Jawar	2227	40214	50107	9893	1:1.24
2	Wheat	3265	48980	57151	8171	1:1.16
3	Soyabean	2593	45546	70011	32234	1:1.53
4	Sugarcane	148.2	235805	355680	119875	1:1.50
5	Pomegranate	15620	398935	630424	231489	1:1.58
6	Grapevine	32933	496706	823325	326619	1:1.65
7	Maize	3849	37604	48728	11124	1:1.29

Source: Based on field Work

Table no 3 shows the comparative analysis of other crops and grapevine. It is observed remarkable differences in the net return received from other crops and grapevine. Per hectare net return from grapevine cultivation is Rs. 326619, it is highest than other crops. Followed by pomegranate, sugarcane, and soybean gives net return is Rs 231489, 119875 and 32234 in the study region. Whereas only wheat, jawar and maize are the low profitable crop, which gives net, return of Rs 8171, 9893 and 11124 respectively. It is mainly subsistence level farming. The grapevine cultivation gives attractive response to high inputs in existing climatic condition. Other cereal crops have their own botanical limitations of its yields and ultimately net returns to growers. Sugarcane is another profitable and leading cash crop and in the region, however it requires well fertile soil and assured water supply. As compared to sugarcane, grape gives more return in low water consumption so it is to be considered as the best option for sugarcane in water scared area. The cost benefit ratio grapevine cultivation is highest; i.e.1.1.65, where as it is 1.1.58, 1.1.53, 1.1.50, 1.1.29, 1.1.24 and 1.1.16 that of pomegranate, soyabean, sugarcane, maize, jawar and wheat respectively.

### Conclusion

Agricultural cropping pattern is largely controlled by the physic - economic conditions prevailing in the district. Agriculture in the Sangli district is mostly of the intensive subsistence

type. Jawar, wheat, sugarcane, cotton, soybean, pomegranate and grapevine, etc, are the important crops of Sangli district. Among the total crops, jawar occupying highest cultivated area 26.88 per cent, sugarcane 8.72, soyabean 6.77, grapes 2.99, wheat 2.28 and pomegranate 0.90 per cent of the total cropped area. The cost benefit ratio grapevine cultivation is highest; i.e.1.1.65, where as it is 1.1.58, 1.1.53, 1.1.50, 1.1.29, 1.1.24 and 1.1.16 that of pomegranate, soyabean, sugarcane, maize, jawar and wheat respectively.

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