

Research Paper

LEVELS OF AGRICULTURAL DEVELOPMENT IN SOLAPUR DISTRICT OF MAHARASHTRA

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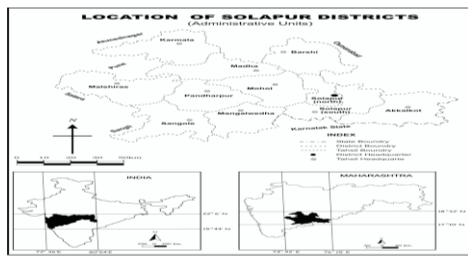
1. Introduction

Regional disparities have become one of the most important glaring and growing problems not only in developing countries but also in the most advanced countries of the world. (Sharma & Kumar 1993). It is true with the developing country like India; it has greater regional disparities in the sectors of agricultural, economy, industry, education, social etc.

The process of economic development depends on the pace of development in the important sectors constituting an economy. As such, the degree of agricultural development determines greatly the rate of growth of an economy. In developing economy the extent of agricultural development becomes even more important because of the dominance of the agricultural sector in such economies with agricultural development, activities in the secondary and tertiary sectors get accelerated which in turn induce agricultural development and there is cumulative process of development leading to higher rate of growth in the economy (Sing, 1990).

It means the agriculture is one of the leading sectors of economic development or agriculture is the mainstay of the economy. It has played a significant role in determining varying nature of agro economic activities.

The Solapur district in Southwest Maharashtra has essentially an agrarian economy. About seventy percent of districts total population depends on agriculture. Though the district has been remained as one of the drought prone region of Maharashtra, surprisingly it carries greater regional disparities in the overall development in general and agricultural development in particular



2. Study Area

The region selected for the study is the drought prone region of Maharashtra. The region under study extends between 17°10' to 18°32' north latitude and 74°42' to 76°15' east longitude (fig-1). Solapur district is enclosed by Ahamadnagar and Latur district in the north, Usmanabad district in the east, Satara district in the west and Sangli district and Belgaum district of Karnataka state in the south. The district occupies total area of 14895 sq.kms, sharing 4.84% area of the Maharashtra state. The district consists of eleven tahsils comprising 1150 villages (2010). According to 2001 census the total population of Solapur district is 38,49,543.

Physiographically Solapur district is a part southern plateau. Bhima is the main river in the study region and Nira, Man, Sina and Bhogavati are the other sub streams. The altitude of the region ranges between 300 to 500 mts. The average maximum temperature in the region is 33°C and minimum 14°C. The annual rainfall in the study region is 561.47mm. The district is occupied by a black cotton soil.

3. Objective:

The main Objective of the present work is to analyse the regional disparities in the levels of agricultural development in Solapur district.

4. Database & Methodology:

The present work is mainly based on secondary data. Tahsilwise relevant data is collected from the tahsil offices, the District Statistical Abstract, District Census, unpublished records for the year 2010-11 of Solapur district. The data has been tabulated and presented by statistical and cartographic techniques.

To determine the level of agricultural development in Solapur district we have selected 14 indicators which are given below.

1. Percentage of net area sown to total Geographical Area. (x1).
2. Per capita cultivated land holding. (x2).
3. Intensity of rainfall. (x3).
4. Net area irrigated to net area sown. (x4)
5. Percentage of cash crops to net area sown. (x5)
6. Number of agricultural workers per 100 hectares cropped land. (x6)
7. Percentage of agriculture workers as percentage to total work force. (x7)
8. Number of National & Co-operative Banks. (x8)
9. Consumption of fertilizer in kg. Per hectore. (x9)
10. Proportion of agricultural credit-societies with rural population. (x10)
11. Number of electric & oil operated irrigation pumps to 100 hector of irrigated land. (x11)
12. Number of tractors per 100 hectare of net area sown. (x12)
13. Road length in km. per sq. km. (x13).
14. Percentage of literate persons to total population. (x14).

As all the indicators of agricultural development are not equally important, we have assigned different weights to different indicators by the method of Proportional Standardized Mean, that is to say, the weight assigned to one indicator is measured by

calculating $\frac{x}{\bar{x}}$ for any indicator.

Where,

\bar{x} = is the average of the series of one particular indicator

σ = is the standard deviation of same series.

This $\frac{x}{\bar{x}}$ is the weight of any indicator. Thus we have

calculated the composite index by the following formula.

$$C.I. = \frac{\frac{x_1}{w_1} + \frac{x_2}{w_2} + \frac{x_3}{w_3} + \dots + \frac{x_{14}}{w_{14}}}{1 + 2 + 3 + \dots + 14}$$

OR

$$C.I. = \frac{x_1 w_1 + x_2 w_2 + \dots + x_{14} w_{14}}{w_1 + w_2 + \dots + w_{14}}$$

5. Analysis:

In the study region, the agricultural development is not uniform in all the eleven tahsils but it is associated with great variations. The respective weights of all the above indicators are - 5.8, 2.5, 8.0, 3.1, 3.6, 3.8, 3.6, 2.0, 2.5, 3.2, 2.7, 1.9, 1.7 and 15.93. Thus it is observed that the highest weight is shown for the Percentage of literate persons to total population (15.93), followed by Intensity of the rainfall (8.0). The lowest weight (1.7) is observed for Road length in km.per sq.km. (Appendix-1)

The values of composite indices of all the tahsils have been given in table- 1. The indices have also been calculated by taking Solapur district as 100(for average composite index 50.72) as given below

$$\text{Indices} = \frac{\text{Composite Index of any unit}}{\text{Average Composite Index}} \times 100$$

Source-Compiled by

Tahsilwise Composite Index of agricultural development in Solapur district (2010-11)

Sr.No	Tahsil	composite index	indices
1	Karamala	48.44	94.60
2	Madha	54.64	107.27
3	Barshi	50.89	99.09
4	North Solapur	51.98	101.22
5	Mohol	52.47	102.90
6	Pandharpur	55.97	110.10
7	Malshiras	56.77	111.57
8	Sangola	48.33	94.56
9	Mangalwedha	46.35	90.44
10	South Solapur	45.63	88.90
11	Akkalkot	46.46	90.58
	Average	50.72	100

The range of composite indices varied from the minimum of 88.90 in South Solapur tahshil to the maximum of 111.57 in Malshiras tahsil. In other words, Malshiras is agriculturally the advanced tahsil and South Solapur tahsil is the backward tahsil. Pandharpur is the next advanced tahsil whose index is much higher (10% or more) than the district average(100.00). Obviously, therefore, there are three tahsils i.e Madha, Mohol & North Solapur which are 1 to 7% higher than the district average. Remaining six tahsils would be taken as backward as their index is below the district average.

There are five tahsils having lower index (between 90.00 to 100.00) than the district average. They are Barshi, Karmala, Sangola, Akkalkot and Mangalwedha. There is one tahsil namely South Solapur whose index is below 90% which represent the agriculturally most backward tahsil of the district.

The composite indices of agricultural development of different tahsils in the district are grouped into four categories which are shown in table no.2

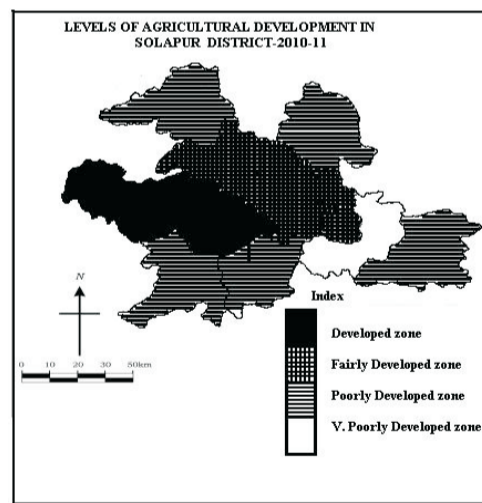
Table No.2

Ranking of Tahsils in respect of Agricultural Development

Value	Above 110	100 to 110	90 to 100	Below 90	Total
Category	Developed tahsils	Fairly developed tahsils	Poorly developed tahsils	Very poorly developed tahsils	
Number of tahsils	Malshiras, Pandharpur	Madha, Mohol, North Solapur	Barshi, Karmala, Sangola, Akkalkot, Mangalwedha	South Solapur	11
Percentage of area to district total	02	03	05	01	11
	19.50	23.70	48.80	8.00	100

Compiled by the authors.

- i. **Developed Zone:** This zone consists of two tahsils namely; Malshiras & Pandharpur whose composite index is 10 point above the district average (fig.2). This group of agricultural development covers 19.50 percent area of the district. It is due to highly irrigated (around 25 percent), high percentage of net sown area, high consumption of fertilizers, high number of tractors, availability of credit societies, banking and road facilities.
- ii. **Fairly Developed Zone:** This zone consists of three tahsils namely, Madha, Mohal & North Solapur covering 23.70 percent area of the district. This zone possess the composite index higher than the district average but less than 10 points. It is mainly because of the development of irrigation facilities, availability of credit societies and banking, higher proportion of cash crops, high area net shown and high literacy rate.
- iii. **Poorly Developed Zone:** This zone covers almost half of the districts total area (48.80 percent). It covers five tahsils having index value ranges between 90 and 100. The low level of agricultural development in this zone is mainly due to low net swon area, low irrigation development, low consumption of fertilizers, minimum number of tractors, & low irrigation pumps and also inadequate banking and market facilities.
- iv. **Very Poorly Developed Zone:** It comprises one tahsil covering 8.00 percent area of the district, whose index is less by more than 10 points below the district average. These tahsils have very poor situation regarding all the indicators of agricultural development.



Conclusion

The analysis reveals that there are great regional disparities in the agricultural development in the district. The study of areal variation categories the developed, fairly developed, poorly developed and very poorly developed regions covering the area of 19.50, 23.70, 48.80 and 8.00 respectively. The regional disparities in the agricultural

development have shown its profound impact on the overall development of the region and the socio-economic life of the people.

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Appendix 1

Values of Indicators of Agricultural Development in Solapur District 2010-11

S.No.	Tahsil	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14
1	Karamala	74.27	0.3	3.33	19.05	8.07	71.6	80.8	26	30.5	113	79.64	0.42	41.9	58.27
2	Madhu	71.2	0.37	4.49	22.18	6.94	91.22	75.55	40	47.35	174	94.34	0.64	90.7	59.7
3	Barshi	80.87	0.51	3.89	23.18	7.94	66.63	63.8	48	32.49	135	52.84	0.24	103	64.24
4	North Solapur	74.16	0.05	4.03	21.75	6.95	69.77	11.86	94	39.06	59	69.54	0.12	318	65.89
5	Mohol	69.17	0.36	3.75	15.17	6.51	94.66	78.97	33	30.41	120	153.62	0.46	71.5	58.6
6	Pandharpur	82.11	0.26	3.74	22.36	7.27	97.87	68.1	40	67.02	133	136.36	0.62	98.6	58.85
7	Mahiras	88.39	0.22	3.02	29.11	8.96	132.84	72.83	59	71.4	135	109.4	0.69	96.2	60.7
8	Sangola	40.38	0.23	3.02	42.1	12.46	128.63	79.13	35	36.88	81	70.87	0.71	100	56.07
9	Mangalwedha	38.81	0.19	3.39	41.34	14.44	86.91	81.6	24	33.36	80	44.73	0.64	98.7	56.36
10	South Solapur	76.65	0.43	4.03	28.21	7.32	56.91	77.83	22	23.93	82	82.93	0.32	84.8	56.89
11	Akkalkot	64.8	0.31	4.42	23.91	8.5	83.36	73.71	29	26.15	89	66.68	1.21	92	57.37
	total	751.01	3.63	41.33	282.36	95.34	980.4	763.4	450	432.55	1192	969.97	6.07	1231.2	652.84
	mean	68.27	0.33	3.73	23.66	8.667	89.12	69.4	40.90	39.32	108.3	87.36	0.55	112.29	59.34
	sd	11.37	0.12	0.46	8.27	2.30	23.05	19.34	19.77	13.59	33.73	32.23	0.27	45.68	2.94
	weight	5.89	2.55	8.03	3.10	3.61	3.86	3.62	2.06	2.52	3.21	2.71	1.97	1.71	20.16
	total weight=	65.03													