

“A Critical Study of Agriculture Development in Solapur District”

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Abstract:

In modern sense the Agriculture consist of practice of cultivation of crops raising livestock, fish, pig farm, goat farm and poultry. Agricultural development refers to the gradual shift in farming best practices. Directly and indirectly Indian economy is depends on agriculture. In India development of agriculture and allied activities provides a source of live hoods to over 70 % of its total population. It provides food, fodder, and raw material. It helps to generate more employment. It reduces poverty and hunger Agriculture is base of trade, transport and trade. Therefore attempt is made here to analyse agricultural development in Solapur District. The paper is mainly based on secondary data. To determine agricultural development Khendhals, “Ranking Coefficient Method” has been utilized and composite index is calculated. The study reveals that very high agriculture development in Pandharpur and Malsiras tahsil is mainly due to availability of fertile soil in Bhima and Nira basin as well as development of surface irrigation facilities.

Keywords: Agricultural development, Indicators, ranking coefficient.

Introduction:

Agriculture geography has been defined as the science which deals with the regional or spatial variations in the distribution of agricultural entities and to explain the causes of such variations (M. Husain, 2002). Agricultural development refers to the gradual shift in farming best practices. Over time, it has been driven and defined by greatly different climates, cultures, and technologies. Agriculture is regarded as the key development in the rise of sedentary human civilization.

Agriculture still holds the key of economic life in most of the developing region. According to human development report, nearly 49 percent of the total global labor force is directly engaged in agriculture activity. Directly and indirectly Indian economy is depends on agriculture. In India development of agriculture and allied activities provides a source of live

hoods to over 70 percent of its total population. (Katar Sing, 2009) Agriculture contributes 35 percent of total national income. It provides food, fodder, and raw material. It helps to generate more employment. It reduces poverty and hunger. Agriculture is base of trade, transport and trade, in Maharashtra state about 55 per cent of the total workers depend on agriculture (Census of Maharashtra, 2001). Agriculture is main source of live hood of the people in Solapur district. As per 2001 census 74 percent of the working population is engaged in agriculture sectors. Therefore attempt is made here to analyse agricultural development in Solapur District.

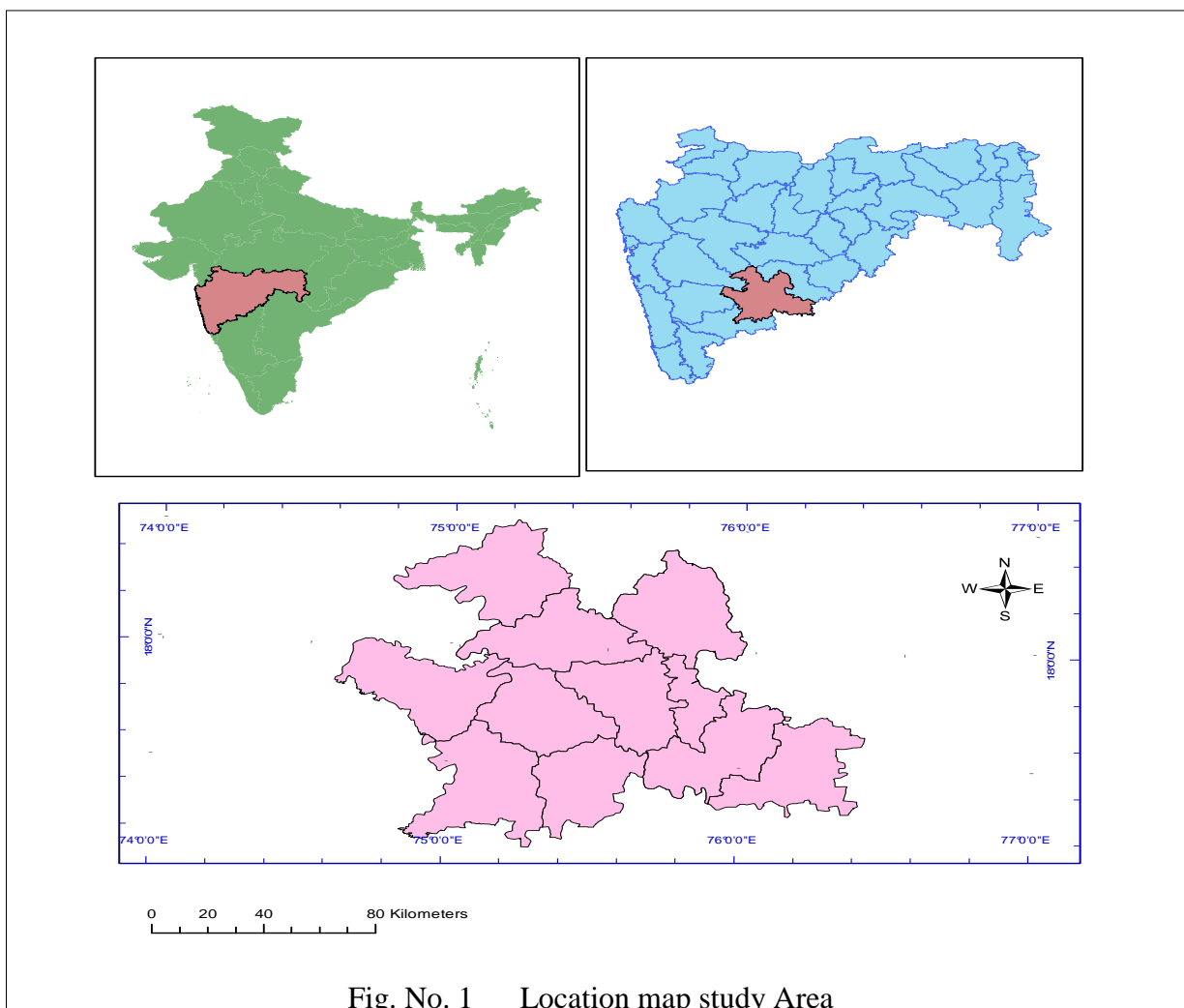
Study Area:

The Solapur District area under Study lies entirely in the Bhima basin of Krishna river system. The district is bounded by 17⁰ 10' North to 18⁰ 32' North latitudes and 74⁰ 42' East to 76⁰ 15' East longitudes. The North South stretch of

the district is 150 km and east-west extension is 200 km. The adjoining districts are Sangli to its South-West, Satara to its West, Pune to its North-West, Ahmednagar to its North and Osmanabad to its East and Bijapur district in Karnataka to the South.

The district has a total area of 14878 sq km. It constitutes 20 percent of the total area of Pune division, 5 percent of the state Maharashtra. For administrative purpose, the district is divided into eleven talukas, which constitute

1150 villages and 10 urban areas. These talukas are North Solapur, Barshi, Akkalkot, South Solapur, Mohol, Mangalvedha, Pandharpur, Sangola, Malshiras, Madha and Karmala. The climate of district is hot and dry with 577 MM average annual rainfall and mean monthly maximum temperature ranging in between 32.8°C and 41.28°C while mean monthly minimum temperature ranging in between 13.94°C and 24.2°C. The district is drained by Bhima River.



Objectives:

The main objective of present study is to determine and analyse agriculture development in the Solapur district.

Data Collection and Methodology:

To fulfill above objective the data regarding to eleven indicators of rural development is collected used for the period of 2002-03 to 2004-05 comes from secondary sources. After the collecting data three years average is calculated to avoid the fluctuations or to get reliable result. To determine agricultural development eleven indicators are taken into consideration. Kendals, "Ranking Coefficient Method" has been utilized and composite index is calculated. Then on the basis of mean and standard deviation of composite index, tahsils of Solapur district are divided in to low, moderate, high and very high development. On the basis of these statistical technique results and conclusions are drawn.

Indicators of Agricultural Development:

To determine agriculture development, Net sown area, Area more than two crops, Irrigated area, Area devoted to food crops, Area devoted to cash crops, Density of live stock, Density of tractors, Density of electric pumps, Agriculture workers, Per hectare agriculture production and Per worker agriculture worker production are considered.

1. Net sown area:

The district has a whole has 65.66 percent net sown area. But the spatial

distribution varies from tahsil to tahsil. High net sown area is recorded in South Solapur, Barshi, Madha and Karmala tahsil i.e. above 72.00 percent to total geographical area. It is high in South Solapur and Barshi tahsil due to high rainfall and high percentage of fertile soil. While in Madha and Karmala tahsil it is high because, most part of these tahsil is benefited by surface irrigation. It is low in the tahsil of North Solapur, Malsiras and Mangalwedha.

2. Irrigated area:

The table 1 indicates that on an average there is 26 per cent irrigated area to total net sown area in Solapur district, but the spatial distribution varies from tahsil to tahsil. The high percentage of irrigated area is recorded in Pandharpur and North Solapur tahsil i.e. > 36 per cent as they are mostly benefited by Ujani irrigation project. It is low in the tahsil of Karmala, Madha, Mohal, Mengalwedha and Akkalkot.

3. Percentage of area devoted to food crops:

During the period of investigation district as a whole has 71.16 percent area is devoted to food crops. But the spatial distribution varies from tahsil to tahsil. High percentage of area devoted to food crops is recorded in Barshi tahsil, due to high development of medium irrigation project. While low area devoted to food crops is recorded in Karmala, Madha, Mohal, Malsiras, Sangola, Mangalwedha, South Solpaur and Akkalkot tahsil. In Karmala, Madha, Mohal and Malsiras it is low because of development of irrigation farmers of these tahsils prefers cash crops instead of food crops.

Table-1 Indictors of agricultural development

Tahsils	PNSA	POA MTO	POI A	P0AD FC	P0AD CC	DO LS	D OT	DO EP	POA W	PH AP	PWA P
Karmal a	75.60	2.19	16.69	58.3	19.37	146.6	0.42	4.8	82.55	824.4	1096.6
Madha	76.76	3.19	18.94	72.0	16.72	168.0	0.6	12.5	73.82	251.9	303.92
Barshi	80.82	6.92	34.86	139.38	16.22	255.8	0.54	8.6	77.19	219.4	121.06
N. Solapur	61.26	8.30	36.35	85.47	19.45	185.8	0.16	3.9	52.48	186.8	67.25
Mohol	71.72	3.31	22.19	45.22	13.35	209.6	0.45	17.8	73.0	508.9	696.42
Pandha rpur	68.83	2.79	49.87	82.86	26	312.7	0.74	10.5	73.3 3	1939	1140.2
Malshir as	62.08	4.89	30.39	67.52	19.41	396.2	0.65	4.9	66.5 8	1518	1535.3
Sangol a	58.79	5.32	31.7	66.84	15.79	313.9	0.49	7.6	79.0 2	169.7	500.28
Mangal vedha	64.35	6.07	10.19	69.3	6.58	266.0	0.59	9.8	82.0 5	478.2	294.43
S. Solapur	72.29	3.56	26.42	72.72	20.74	135.4	0.34	3.3	73.1 8	58.05	57.42
Akkalk ot	74.24	3.73	21.08	63.35	25.62	165.8	1.06	4.4	79.0 1	334.6	348.73
District	65.66	4.16	26.08	71.16	18.38	230.0	0.57	8	73.9 6	677.1	619.87

Source: compiled by authors on the basis of Socio economic review & District Statistical Abstract of Solpur district 2002-03 to 2004-05.

4. Density of live stock:

The district as a whole has 230 density of live stock per 100 hectare, but the spatial distribution varies. It is high in Malsiras tahsil i.e. 396, because western part of the tahsil is covered by Mahadev range where goat and sheep husbandry is dominant. It is low in the tahsil of Karmala, Madha, North Solapur, Mohal, South Solapur and Akkalkot i.e. below 225 per 100 hectare.

5. Density of Tractors:

In Solapur district, the density of tractor is 0.57 per 100 hectare in 2004-2005. The high density of tractor is recorded only in Akkalkot tahsil. While it is low in the tahsil of Karmala, North Solapur, Mohal and North Solapur.

6. Density of Electric Pump:

On an average there are 8 electric pumps per 100 hectare in Solapur district. But the

spatial distribution varies from tahsil to tahsil. The density of electric pump is high only in Mohal tahsil because Mohal tahsil is benefited by Ujani canal as well as Bhima Sina joint canal. It is low in Karmala, North Solapur, Malsiras, Sangol, South Solapur and Akkalkot.

7. Percentage of agriculture workers:

District as a whole has 73.96 percent agriculture labour, but the spatial distribution ranging in between 52.48 and 82.55 per cent. High percentage of agriculture worker is found in Karmala, Madha, Barshi, Mohal, Padharpur, Sangola, Mangalwedha, South Solapur and Akkalkot tahsil. It is low in North Solapur because district head quarter lies in this tahsil, where cotton textile and hand loom industries are developed therefore most of the labours prefer to work in this industries.

8. Per hectare agriculture production:

During the period of investigation district as a whole has 677.1 metric tons agriculture production. But the per hectare agriculture production varies from tahsil to tahsil. High per hectare agriculture production i.e. above 1332 metric tons is recorded in Malsiras and Pandharpur tahsil due to Ujani

irrigation project and Nira right bank canal. The moderate per hectare production is recorded in Karmala tahsil, while it is low in Madha, Barshi, North Solapur, Mohal, Sangol, Mangalwedha, South Solapur and Akkalkot i.e. below 685 metric tons per hectars.

9. per workers agriculture production:

The district as a whole has 619.87 metric tons agriculture production per workers, but the spatial distribution varies. The high per worker production is recorded in Pandharpur, Malsiras and Karmala tahsil due to development of surface irrigation and high mechanization. Whereas low per worker agriculture production is found in Barshi, Madha, North Solapur, Sangola, Mangalwedha, South Solapur and Akkalkot tahsil.

Agriculture Development in Solapur District:

1. Very High Agriculture Development:

Table number 2 indicates that very high agriculture development i.e. below mean minus one standard deviation composite index is recorded in Pandharpur and Malsiras tahsil because availability of fertile soil in Bhima and Nira basin as well as development of surface irrigation facilities.

Table-2 Ranking of indicators and Average Composite Index of Agriculture Development.

Tahsils	PNS A	POA- MTO	POIA	P0A- DFC	P0A- DCC	DOL S	DO T	DO- EP	PO- AW	PH - AP	PW- AP	CI
Karmala	3	11	10	10	6	10	9	8	11	3	3	7.64
Madha	2	9	9	5	7	8	4	2	6	7	7	6.00
Barshi	1	2	3	3	8	5	6	5	7	8	9	5.18

N. Solapur	10	1	2	1	4	7	11	10	1	9	10	6.00
Mohol	6	8	7	11	10	6	8	1	3	4	4	6.18
Pandha rpur	7	10	1	2	1	3	2	3	5	1	2	3.36
Malshir as	9	5	5	7	5	1	3	7	2	2	1	4.27
Sangol a	11	4	4	8	9	2	7	6	9	10	5	6.82
Mangal vedha	8	3	11	6	11	4	5	4	10	5	8	6.82
S. Solapur	5	7	6	4	3	11	10	11	4	11	11	7.55
Akkalk ot	4	6	8	9	2	9	1	9	8	6	6	6.18
											Mean	6.00
											Standard Deviation	1.40

Source: Compiled by researcher

2. High Agriculture Development:

High agriculture development i.e. mean minus one standard deviation to mean composite index are included in this category. High agriculture development is found in the tahsil of North Solapur, Barshi and Madha. In North Solapur it is high due to high development of irrigation facilities as well as high rainfall. It is high in Barshi tahsil because Barshi tahsil come in high rainfall zone and having high number of medium irrigation project which lead to develop surface irrigation, whereas in Madha it is high due to fertile soil in Bhima and Sina basin and some part of Madha benefited by Ujani irrigation project.

3. Medium Agriculture Development:

The tahsil which have composite index lies in between mean plus one standard deviation

are included in this category. Medium agriculture development is observed in Mohal, Sangola, Mangalwedha and Akkalkot tahsil.

4. Low Agriculture Development:

The tahsils which have above mean plus two standard deviation composite index are included in low developed category. Low development is recorded in Karmala and South Solapur tahsil. In Karmala. It is low due to lower percentage of fertile soil, low rainfall and most part of the Karmala is deprived from surface irrigation facilities. While South Solapur it is low due to lower development of Surface irrigation, lower development of surface irrigation, lower development of animal husbandry and lower development of agriculture machination.

Conclusions:

The Forgoing analysis reveals that very high agriculture development in Pandharpur and Malsiras tahsil is mainly due to availability of fertile soil in Bhima and Nira basin as well as development of surface irrigation facilities. High agriculture development in North Solapur is a result of high development of irrigation facilities as well as high rainfall. High agriculture development in Barshi tahsil due to high rainfall and high number of medium irrigation project which lead to develop surface irrigation. High agriculture development in Madha is result fertile soil in Bhima and Sina basin benefit of Ujani irrigation project. Low development in Karmala mainly due to lower percentage of fertile soil, low rainfall, While low development in South Solapur is result of lower development of Surface irrigation, lower development of animal husbandry and lower development of agriculture machination. Therefore attention

should paid to improve surface irrigation and awareness should made in farmers regarding use of modern implements as well as milch animal raring as a side line for farming.

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