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GROWTH AND DISTRIBUTION OF AGRICULTURAL POPULATION IN KOLHAPUR DISTRICT

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ABSTRACT:

India agriculture is main economic activity and near about 70% population is engaged in this economic activity. Agricultural population means population engaged in the agricultural activities. Basically cultivators and agricultural labours are considered as an agricultural population. The present study carried out for the find out the growth and distribution of agricultural population in Kolhapur District for which secondary data is used. The distribution of agricultural population in study region is assessed both in terms i.e. time and space.

In the study period i.e. 1991 to 2011 Karver tehsil has the highest concentration of agricultural population, while the lowest concentration of agricultural population was observed in Bavda tehsil whereas Hatkanangale, Shirol and Bavda tehsil shows the negative change in the density of agricultural population whereas remaining Shahuwadi, Panhala, Karvir, Radhanagari, Kagal, Bhudargad, Ajra, Gadhinglaj and Chandgad shows positive change in the density of agricultural population.

INTRODUCTION:

Man being powerful geographical factor on the earth surface not only determines the economic pattern of resource utilization but is himself a very dynamic and important resource for the society (Chandana R.C. and Sidhu M.S., 1980). In country like India agriculture is main economic activity and near about 70% population is engaged in this economic activity. Agriculture is totally depends on the physical factors such as soil, water and climatic condition. Therefore this all factors are responsible for the growth and distribution of agricultural population in any region.

Agricultural population means population engaged in the agricultural activities. Basically cultivators and agricultural labours are considered as an agricultural population. In agricultural population studies following aspects of population is considered such as spatio-temporal distribution of agricultural population, growth of agricultural population, density of agricultural population etc.

OBJECTIVES:

- 1) To understand Spatio-temporal Changes in Agricultural population of Kolhapur district.
- 2) To analysis the tehsil wise distribution of in Agricultural population in study region.

STUDY REGION:

Kolhapur district is one of the western districts of Maharashtra state and it is a part of Deccan plateau. Geographically Kolhapur district lies in between 15°, 43' to 17°, 10' North latitude and 73°, 40' to 74°, 42' East longitude. It is surrounded by Sangli district to the north, Karnataka state to the south and east, and the Ratnagiri and Sindhudurg district to the west.

The total area of Kolhapur district is 8,059 Sq. km, which covers 2.62% area of Maharashtra state. It includes twelve tehsils such as Karveer, Kagal, Panhala, Shahuwadi, Hatkanangale, Shirol, Radhanagri, Bhudargad, Gadhinglaj, Gaganbawda, Aajra and Chandgad.

DATABASE:

For the present investigation secondary data is used which is collected from district census handbook of Kolhapur district from 1991 to 2011.

METHODOLOGY:

To calculate growth rate of agricultural population following formula was used.

$$GR = \frac{(Vp1 - Vp2)}{Vp2} \times 100$$

Where, GR = Growth Rate, Vp1= Present Value, Vp2= Past Value.

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To calculate agricultural density of population following formula was used for the year 1991, 2001 and 2011.

$$\text{Agricultural Density} = \frac{\text{Total Agricultural Population}}{\text{Gross Cropped Area}}$$

DISTRIBUTION OF AGRICULTURAL POPULATION:

The population distribution means the spatial arrangement of people in a region. Population distribution is a dynamic process, which is ever changing and its cause and effects vary in spatio-temporal frame. The distribution of agricultural population in study region is assessed both in terms i.e. time and space. The temporal distribution is assessed from 1991 to 2011 and tehsil is selected for spatial analysis of distribution. The distribution of agricultural population is categorised into three groups i.e. High, Moderate and Low distribution. The high distribution is considered above 10.1 percent, while moderate distribution is in between 5.1 to 10 percent and low distribution is measured below 5 percent.

**Table 1: Distribution of Agricultural Population in Kolhapur District
(In Per Cent)**

| Tehsil | 1991 | 2001 | 2011 |
|--------------|-------|-------|-------|
| Shahuwadi | 7.34 | 7.22 | 8.09 |
| Panhala | 8.79 | 8.84 | 9.04 |
| Hatkanangale | 10.99 | 9.54 | 9.45 |
| Shirol | 10.29 | 8.43 | 9.65 |
| Karvir | 13.54 | 13.67 | 13.27 |
| Bavda | 1.70 | 1.67 | 1.42 |
| Radhanagari | 8.55 | 8.48 | 9.41 |
| Kagal | 9.96 | 10.19 | 10.63 |
| Bhudargad | 6.45 | 6.65 | 6.48 |
| Ajra | 5.38 | 5.98 | 5.35 |
| Gadhinglaj | 8.19 | 10.29 | 8.44 |
| Chandgad | 8.81 | 9.04 | 8.77 |

Source: District Census Handbook of Kolhapur District 1991, 2001, 2011

Above table 1 shows the spatio-temporal distribution of agricultural population in the Kolhapur district of 1991, 2001 and 2011 census.

1991

As per 1991 census Karver tehsil has the highest (13.54 %) concentration of agricultural population, while the lowest (1.70 %) concentration was observed in Bavda tehsil. Shahuwadi, Panhala, Radhanagari, Kagal, Bhudargad, Ajra, Gadhinglaj and Chandgad tehsils has moderate (5.1 to 10 %) concentration of agricultural population while Karvir, Hatkanangale and Shirol tehsils has high (above 10.1 %) concentration of agricultural population in study region whereas Bavada tehsil has low (below 5 %) concentration of agricultural population.

2001

In 2001, Karvir tahsil has registered the highest (13.67 %) and Bavda tehsil has lowest (1.67 %) concentration of agricultural population in the Kolhapur district. High concentration of agricultural population (Above 10.1 %) has recorded in Karvir, Kagal and Gadhinglaj tehsils while Shahuwadi, Panhala, Hatkanangale, Shirol, Radhanagari, Bhudargad, Ajra and Chandgad tehsils has moderate (5.1 to 10 %) population concentration whereas low concentration of agricultural population (below 5 %) has observed in Bavda tehsil.

2011

In 2011, Karvir tehsil has highest i.e. 13.27 % and Bavda tehsil has lowest 1.42% concentration of agricultural population. During this census year of study period Karvir and Kagal tehsils has high (Above 10.1 %) concentration of agricultural population whereas Shahuwadi, Panhala, Hatkanangale, Shirol, Radhanagari, Bhudargad, Ajra, Gadhinglaj and Chandgad tehsils has moderate (5.1 to 10 %) concentration of agricultural population and remaining one tehsil i.e. Bavda tehsil registered low (below 5 %) concentration of agricultural population.

In the study period high concentration of agricultural population was observed in Hatkanangale, Shirol, Karvir and Kagal which is located in the fertile plain area of the district due to this physiographic characteristic agricultural development is high which provided more employment opportunities in the study region.

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GROWTH OF AGRICULTURAL POPULATION:

Human fertility, mortality and mobility determine the growth of population in any region. The growth of population means any change in population number. This change is in negative direction then population decreases when it is in positive direction then population increases. The growth of population may be approached just by taking into consideration the next growth of population over the basic year. The following formula is used to calculate the growth rate of population.

$$GR = \frac{(Vp1 - Vp2)}{Vp2} \times 100$$

Where, GR = Growth Rate, Vp1= Present Value, Vp2= Past Value.

**Table 2: Growth of Agricultural Population in Kolhapur District
(In Per Cent)**

| Tehsil | 1991-2001 | 2001-2011 | 1991 - 2011 |
|-----------------------|------------------|------------------|--------------------|
| Shahuwadi | 13.06 | 24.97 | 15.16 |
| Panhala | 10.62 | 17.83 | 9.11 |
| Hatkanangale | -28.11 | 15.08 | -8.79 |
| Shirol | -35.83 | 26.57 | 0.26 |
| Karvir | -10.12 | 13.40 | 4.63 |
| Bavda | -13.31 | 0.81 | -12.39 |
| Radhanagari | 12.17 | 24.28 | 15.07 |
| Kagal | 8.71 | 19.39 | 12.37 |
| Bhudargad | 8.00 | 13.74 | 6.83 |
| Ajra | 0.10 | 6.02 | 5.92 |
| Gadhinglaj | 11.49 | -2.46 | 9.31 |
| Chandgad | 8.35 | 13.37 | 6.14 |
| District Total | -1.23 | 15.93 | 6.50 |

Source: District Census Handbook of Kolhapur District 1991, 2001, 2011

1991-2001

During 1991-2001 the district average growth rate of agricultural population was -1.23 per cent. In this decade in Shirol tahsil registered highest negative (-35.83 per cent) growth rate, while the lowest positive (0.10 per cent) growth rate has recorded in Ajara tahsil whereas highest positive growth rate is observed in Shahuwadi (13.06 per cent) tehsil.

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High growth rate (above 10.1 %) of agricultural population has been observed in Shahuwadi, Radhanagari, Panhala and Gadhinglaj tahsils while Kagal, Bhudargad and Chandgad tahsils has moderate growth rate (5.1 to 10 %) and low growth rate (below 5 %) has recorded in Ajra tahsil. Hatkanangale, Shirol, Karvir and Bavda tahsils has negative growth rate during this decade because in Hatkanangale, Shirol, Karvir tahsil has development in Industrial sector during this period therefore agricultural labours turns to industry where they get more income than agriculture.

2001-2011

In this respective decade Shirol tahsil has registered the highest (26.57%) growth rate and Gadhinglaj tehsil has lowest (-2.46 %) growth rate of agricultural population where the district average growth rate is 15.93 per cent (Table 4.2).

High growth rate of agricultural population (above 20%) has been observed in Shirol, Shahuwadi and Radhanagari tahsils while Panhala, Hatkanangale, Karvir, Kagal, Bhudargad and Chandgad tahsils has moderate growth rate (10.1 to 20 %) and low growth rate (below 10 %) has observed in Ajra and Bavda tahsils. Whereas Gadhinglaj tahsil has (-2.46%) negative growth rate in agricultural population during 2001-2011.

1991-2011

During the study period (1991-2011) Shahuwadi tahsil has registered the highest (15.16 per cent) growth rate, while the lowest (-12.39 per cent) growth rate has recorded in Bavda tehsil and district average growth rate is 6.50 per cent.

Shahuwadi, Radhanagari and Kagal tahsils has high (above 10 per cent) growth rate in the study region while Panhala, Bhudargad, Ajra, Gadhinglaj and Chandgad tahsils has moderate growth rate (5.1 to 10 %) while Shirol and Karvir tahsil registered low growth rate (below 5 %) of agricultural population whereas Hatkanangale and Bavda tahsils has negative growth in agricultural population.

DENSITY OF AGRICULTURAL POPULATION:

Land and people constitute two fundamental elements of an area so that the ratio between this two is of fundamental consideration in all population studies. The agricultural density is necessary in the assessment of agricultural development of Kolhapur district. It gives clear and realistic picture of the pressure of population on land. Agricultural density has been worked out by using following formula for the year 1991, 2001 and 2011.

$$\text{Agricultural Density} = \frac{\text{Total Agricultural Population}}{\text{Gross Cropped Area}}$$

Table 3: Density of Agricultural Population in Kolhapur District
(Persons per sq.km)

| Tehsil | 1991 | 2001 | 2011 |
|-----------------------|-------------|-------------|-------------|
| Shahuwadi | 138 | 101 | 136 |
| Panhala | 205 | 163 | 202 |
| Hatkanangale | 184 | 140 | 167 |
| Shirol | 208 | 128 | 194 |
| Karvir | 225 | 175 | 239 |
| Bavda | 165 | 87 | 89 |
| Radhanagari | 179 | 153 | 202 |
| Kagal | 175 | 147 | 182 |
| Bhudargad | 170 | 125 | 160 |
| Ajra | 126 | 114 | 128 |
| Gadhinglaj | 148 | 172 | 164 |
| Chandgad | 136 | 109 | 144 |
| District Total | 172 | 137 | 172 |

Source: District Census Handbook of Kolhapur District 1991, 2001, 2011

Table 3 shows the density of agricultural population in Kolhapur district during 1991, 2001 and 2011 census years. The agricultural population density of Kolhapur district was recorded in 1991 was 172 persons per Km², 137 persons per Km² in 2001, whereas 172 persons per Km² in 2011 which indicated that agricultural population were decreased during 1991 to 2001 and again increased during 2001 to 2011.

1991

In this census year high agricultural population density (above 200 persons per Km²) was observed in Panhala, Shirol and Karvir tahsils due to these tehsils located in fertile land which reflects development in agriculture as well as high urbanization and Industrialization.

Moderate density (150 to 200 persons per Km²) of agricultural population was found in Hatkanangale, Bavda, Radhanagari, Kagal and Bhudargad tahsils. While low density (below 150 persons per Km²) of agricultural population was recorded among 4 tahsils Viz. Shahuwadi, Ajra, Gadhinglaj and Chandgad tahsils due to hilly region, undulating land, unfertile soil which reflects less development in agriculture.

In year 1981 Karvir tehsil has the highest (255 persons per Km²) density of agricultural population, while the lowest (126 persons per Km²) density was observed in Ajra tahsil.

2001

In 2001, high density of agricultural population was found in Karvir tehsil (175 persons per Km²) whereas low density was observed in Bavda tehsil (87 persons per Km²).

Low density (below 150 persons per Km²) of agricultural population was recorded in 8 tahsils Viz. Shahuwadi, Hatkanangale, Shirol, Kagal, Bhudargad, Ajra and Chandgad tahsils whereas moderate density (150 to 200 persons per Km²) of agricultural population was found in Panhala, Karvir, Radhanagari and Gadhinglaj tahsils due to these tehsils located in fertile land, developed in agricultural activities.

2011

During the last census year of study period three tehsils in the study region registered high density (above 200 persons per Km²) of agricultural population such as Karvir, Panhala and Radhanagari tahsils because these tahsils has developed agricultural and high irrigation facilities other than remaining tahsils of the study region.

Shahuwadi, Bavda, Ajra and Chandgad tahsils registered low density (below 150 persons per Km²) of agricultural population whereas moderate

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density (150 to 200 persons per Km²) was found in Hatkanangale, Shirol, Kagal, Bhudargad and Gadhinglaj tehsils.

In the study region Karvir tehsil has registered the highest (239 persons per Km²) and Bavda tehsil has lowest (89 persons per Km²) density of agricultural population.

During the study period Hatkanangale, Shirol and Bavda tehsil shows the negative change in the density of agricultural population whereas remaining Shahuwadi, Panhala, Karvir, Radhanagari, Kagal, Bhudargad, Ajra, Gadhinglaj and Chandgad shows positive change in the density of agricultural population.

CONCLUSION:

The distribution of agricultural population in study region is assessed both in terms i.e. time and space. The temporal distribution is assessed from 1991 to 2011 and tehsil is selected for spatial analysis of distribution. During the study period i.e. 1991 to 2011 Karver tehsil has the highest concentration of agricultural population, while the lowest concentration of agricultural population was observed in Bavda tehsil.

In terms of growth in agricultural population in Kolhapur district, high growth rate of agricultural population was observed in Shirol, Shahuwadi and Radhanagari tahsils while Panhala, , Kagal, Bhudargad Ajra, Bavda and Chandgad tahsils has moderate growth rate and low growth rate has observed in Hatkanangale, Karvir tehsils during the study period. Hatkanangale and Karvir tahsils has low growth rate during study period because in Hatkanangale, Shirol, Karvir tahsil has development in Industrial sector during this period therefore agricultural labours turns to industry where they get more income than agriculture.

The agricultural population density of Kolhapur district was recorded in 1991 was 172 persons per Km², 137 persons per Km² in 2001, whereas 172 persons per Km² in 2011 which indicated that agricultural population were decreased during 1991 to 2001 and again increased during 2001 to 2011.

During the study period Hatkanangale, Shirol and Bavda tehsil shows the negative change in the density of agricultural population whereas remaining
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Shahuwadi, Panhala, Karvir, Radhanagari, Kagal, Bhudargad, Ajra, Gadhinglaj and Chandgad shows positive change in the density of agricultural population.

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