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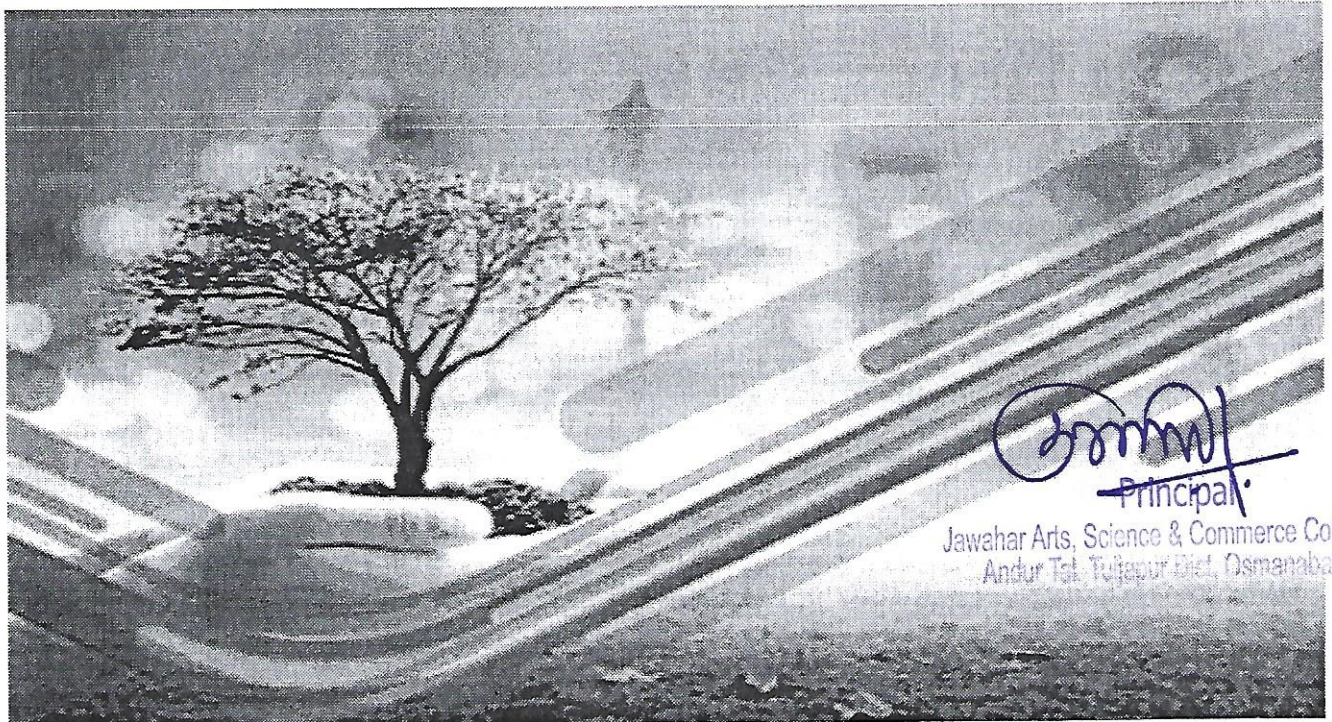
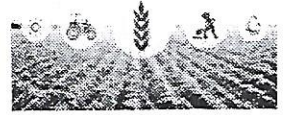
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Rainfall Variability in Sangli District (Maharashtra) Dayanand S. Kamble¹ Omprakash V. Shahapurkar²

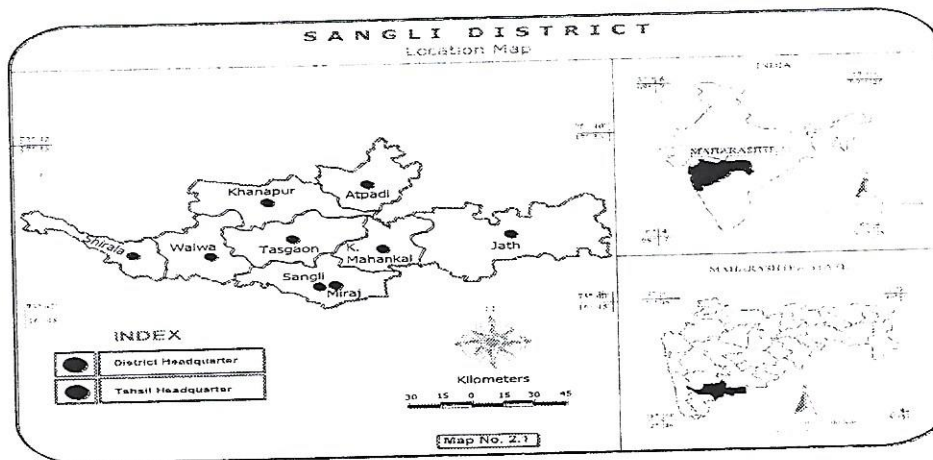
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Introduction:

Water is the most important Natural source for all living things without water living things are does not survival on the earth surface; more than 70% of the Population in India is engaged in Agricultural. Rainfall is the best indicator to show the development of Agricultural. Indian economy is completely associated with the monsoon. Temperature and Rainfall is the huge parameters which affecting Agriculture activity of man.

Study Area:



The Sangli district is one of the district of Maharashtra states. It is located in the western part of Maharashtra. Sangli district. it is situated between $16^{\circ} 45'$ north to $17^{\circ} 33'$ north latitudes and $73^{\circ} 42'$ east to $75^{\circ} 40'$ east longitude. It is bounded by Satara and Solapur district in the north, Bijapur district in the east, Kolhapur and Belgaum district in the south and the Ratnagiri district to the west. The east-west length of Sangli district is about 205 km and south-north width of the district is about 96 km. The area of the district is 8572.00 square kilometers and it is 21st highest geographical area in Maharashtra state. It is at a height of 553 meter from normal Sea level. According to 2011 census there are 724 villages in Sangli District. There are 705 Grampanchayat and 10 Panchayat Samiti in the District.

Objectives:

The Present Study has been undertaken with following Specific Objectives:

- 1) To study the average annual rainfall during the year 1991 to 2015 in study area
- 2) To find out trends of rainfall and Co-efficient of variations.

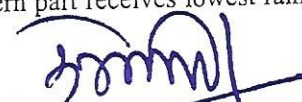
Data Base and Research Methodology:

The present study is based on secondary source of data it has collected from Indian Metrological Department for 25 years. Agricultural statistical information state Economic Review in Sangli District. The Data has been collected from 1991 to 2015 the trends of rainfall is calculated and re-present by mean.

Rainfall:

Distribution of rainfall over a region depends, apart from the latitudinal location, on the nature of topography and the distance from the sea. These features affect differently the seasonal rhythms of the air circulation and therefore also the rainfall distribution (Subrahmanyam).

The rainfall begins with an approach of South-West Monsoon from the middle of June and lasts up to the end of September. Sometimes the rainfall receives from the Bay to Bengal Cyclones during October and November. The uneven distribution of rainfall is a remarkable characteristic of the region. The western hill tracts of Shirala tahsil on an average receives rainfall of over 1000 mm in a year, whereas the Krishna basin, in the centre has about 750 mm rainfall. The north-eastern and eastern part receives lowest rainfall in the region averaging about 500 mm.


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The rainfall is heavy in Shirala tahsil area. Yearly average rainfall is 1085 mm in the areas bordering Shirala tahsil on the east. As we go towards west of the region, the rainfall goes on increasing and in the extreme west the rainfall in about 6000 mm.

Table No. 2.4: Mean Annual Rainfall and Co-efficient of Rainfall Variability in Sangli District (1991 to 2015)

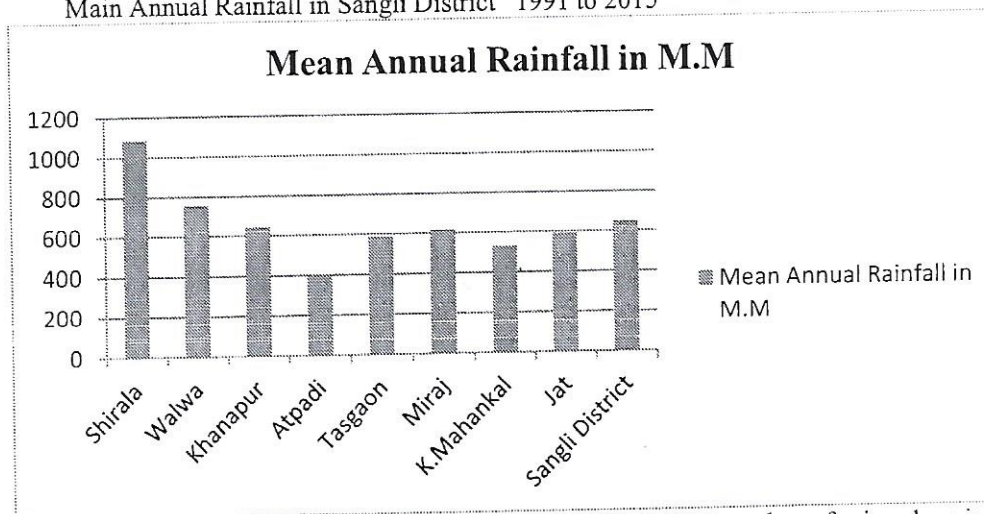
| Name of the Tahsil | Mean Annual Rainfall in M.M | Co-efficient of Rainfall Variability in % |
|--------------------|-----------------------------|-------------------------------------------|
| Shirala | 1085 | 23.65 |
| Walwa | 756 | 30.73 |
| Khanapur | 642 | 22.11 |
| Atpadi | 397 | 36.92 |
| Tasgaon | 586 | 32.08 |
| Miraj | 616 | 30.94 |
| K.Mahankal | 530 | 27.61 |
| Jat | 592 | 27.01 |
| Sangli District | 649 | 19.63 |

Source:-1) Socio-Economic Abstract of Sangli District 1994-95, 2015-16.

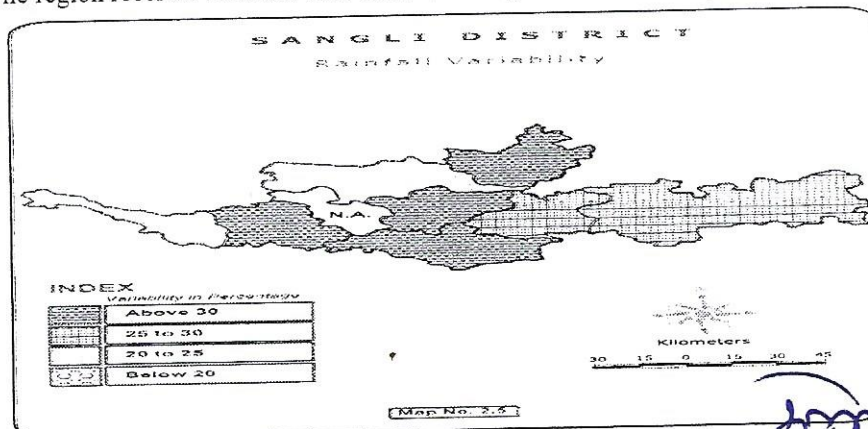
2) Compiled by the researcher.

The tahsil of Walwa, western part of Khanapur, Tasgaon and western part of Miraj fall within the rainfall range of 600 mm to 1000 mm. The rainfall goes on decreasing as we go towards east from the western boundary of Walwa tahsil. The rest of the region i.e. eastern part of Tasgaon and Miraj; Kavathe Mahankal, Atpadi and Jat tahsils receive scanty rainfall which is less than 600 mm.

Main Annual Rainfall in Sangli District 1991 to 2015



The other peculiar characteristic of the rainfall is that the average number of rainy days is about 49. Nearly 68% of the total rainfall receives during June to September and 19% during October and November. The region receives showers with thunder during the month of May.



Rainfall Variability:

The rainfall statistics have important bearings on water resources management, adjusting cropping pattern, improving the technique for flood forecasting etc. It is an established fact that any departure from the normal rainfall for a definite period will inevitably upset the characteristic water balance for that area leading to reduced fields or crop failure. A variability of rainfall in excess of 20% of the normal implies a great risk in farming (Singh). Thus a study of coefficient of rainfall variability (CV) is essential. Coefficient of Variation is worked out in percentage (Table No. 2.5 and Map No. 2.9) with the help of following formula:

$$C.V. = \frac{\text{Standard deviation}}{\text{Mean}} \times 100$$

Above 30 percent rainfall variability was noticed in Walwa, Atpadi and Tasgaon tahsils whereas 25 to 30 percent rainfall variability was found in K. Mahakal and Jat tahsils of the region. Below 25 percent rainfall variability was observed in Shirala and Khanapur tahsils of the study region.

Conclusion:

The rainfall varies from west to east. The extreme western part receives heavy rainfall and therefore, this region has very low concentration of population. The central part of the district receives moderate rainfall and hence, the intensity of population concentration is high. About one-third of the area under study, i.e. the eastern drier part of the district receives very low amount of rainfall inducing the drought condition. Obviously, this region is having moderate to low concentration of population.

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