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A Geographical Analysis of Rainfall Variability in Aurangabad District

Dr.Ramesh Timbakrao Mahalkar
Department of Geography
Shri Asaramji bhandwaldar Arts, Commerce and
Science College Devgaon (R.) Tq-Kannad
Dist-Aurangabad

Abstract

Beside temperature, rainfall is another important factor of the climate. Water availability is the important factor in the origin of rural and urban settlements. On the basis of the settlements are classified in to wet and dry point settlements. Availability of water is mainly depending on amount of rainfall and its seasonal distribution. About 84 percent of the annual rainfall is occurred in rainy season

Introduction

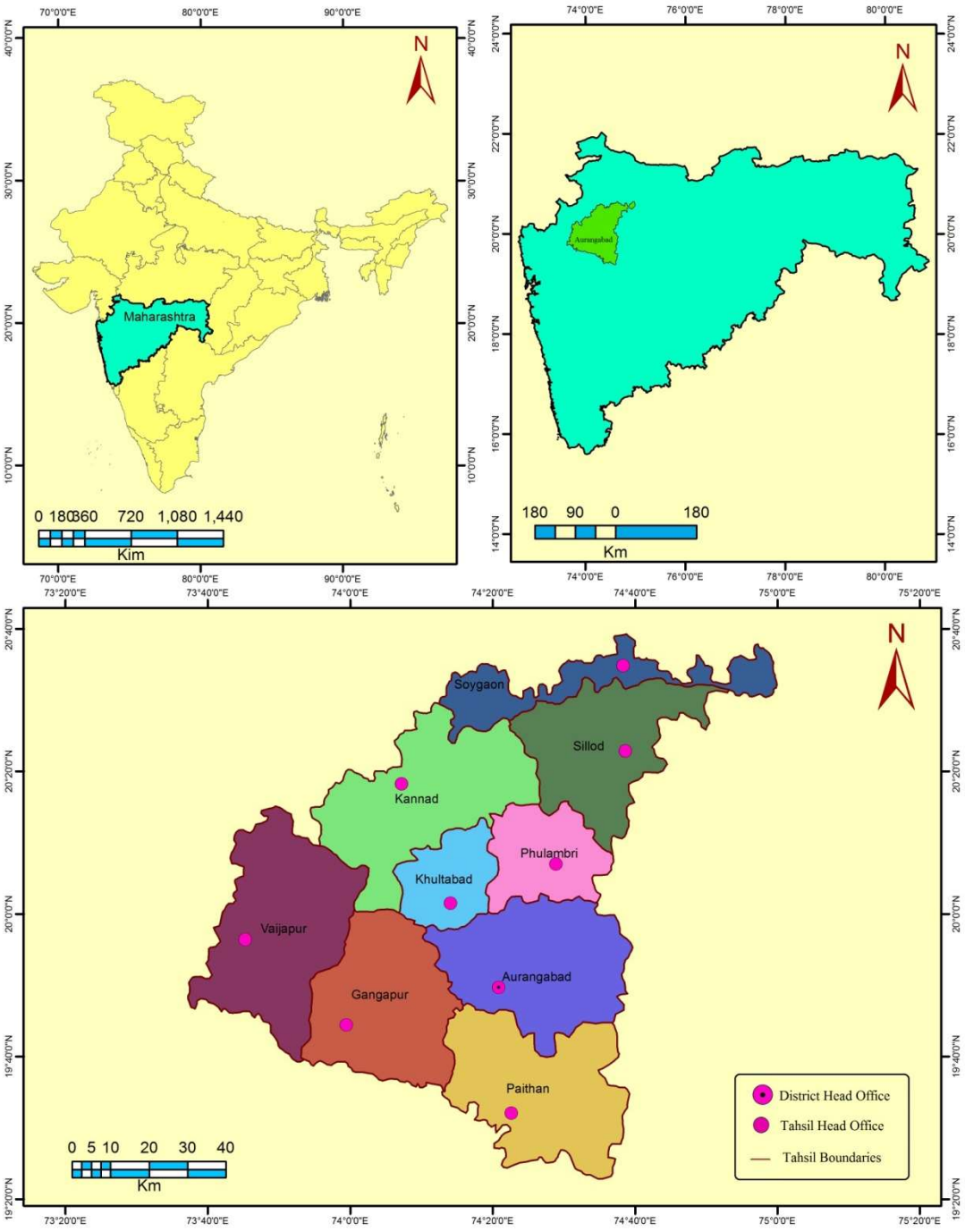
Rainfall is one of the major climatic factors influencing agriculture. The crop production and productivity depends on the amount of rainfall received, intensity and distribution of the rainfall over a particular area during particular year which indicates the growth of the economy of the country and affect both the spatial and temporal patterns on water availability**.** This study sought to determine the spatial and temporal variability of rainfall under past and future climate scenarios. Aurangabad district is one of the chronicle drought prone areas in the Maharashtra state. The average annual rainfall of the district is about 571.90 mm., present study put light on annual rainfall variation in the Aurangabad district.

Keywords: *coefficient of variation, rainfall variability, spatial variation*

Study Region -

Aurangabad is one of the district of Maharashtra states. District covers an area of 10100sq.km. Out of which 141.1sq.km. is urban area and 9.958sq.km. is rural area. Aurangabad district is approximately situated at the central part of the Maharashtra republic of India and northern direction of marathwada region. Specially district lies between 19°53’47’’ North latitude and 75°23’54’’ East longitude. District has a great historical as well as cultural heritage. According to 2001 census total population of district is 36,95,928 and population density is 365sq.km. Aurangabad district is divided in nine Tahsil for administration these are- Aurangabad, Kannad, Paithan, Phulambri, Khultabad, Gangapur, Vaijapur, Sillod, Soygaon.

STUDY REGION MAP



OBJECTIVE OF THE STUDY

1.To Study Mean Annual Rainfall of Study Region.

2.To examine spatio-temporal analysis of rainfall variability in the study region.

RESEARCH METHODOLOGY-

The rainfall of the region is erratic in nature and unevenness in spatial and temporal distribution. The rainfall variability is very important in crop agronomy. It is calculated with the formula of co-efficient of variation. Co-efficient of variation is the best measure to compare the variability of two series or two sets of observation. For this purpose tahsilwise data of nine years is considered for co-efficient of variation. For the calculation of co-efficient of variation following formula is used

$$\text{C. V.} = \frac{S.D.}{Mean} \text{ X } 100$$

Where,

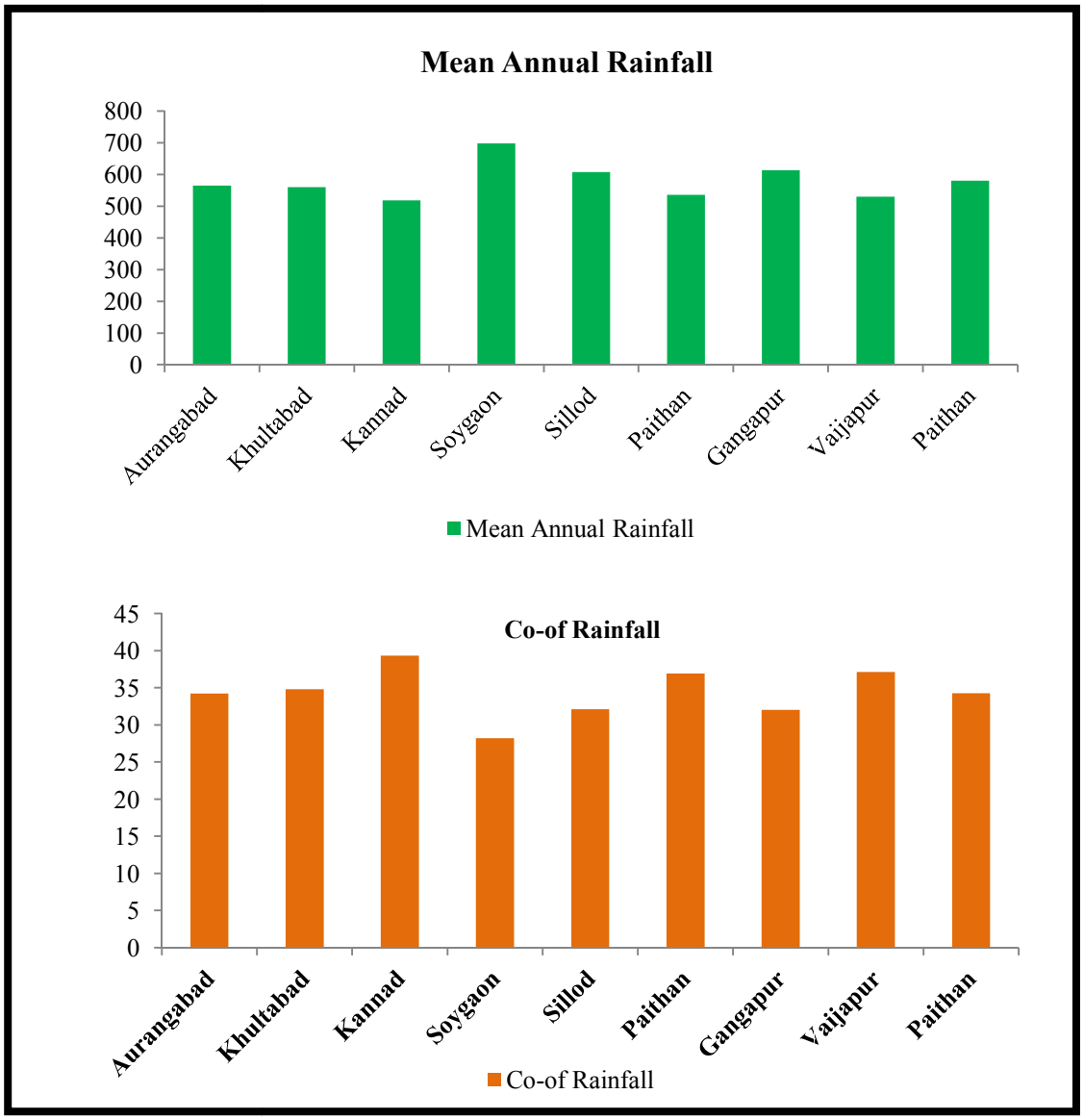
C.V. = Co-efficient of rainfall variability

S.D. = Standard Deviation

Table 1.1:
Mean Annual Rainfall and Rainfall Variability
in Aurangabad District

S.N.	Tahsil	Mean Annual Rainfall	Co-of Rainfall
1	Aurangabad	564.58	34.2
2	Khultabad	559.58	34.8
3	Kannad	518.52	39.3
4	Soygaon	697.6	28.19
5	Sillod	607.6	32.1
6	Paithan	535.37	36.92
7	Gangapur	613.38	32
8	Vaijapur	530.15	37.12
9	Paithan	580.17	34.25

Source-Data Compiled by Researcher



RESULT AND DISCUSSION-

above table shows that rainfall variability ranges from 28 to 39 percent. highest rainfall variability39.30 has seen in Kannad tahsil and lowest rainfall variability 28.19 has seen in Soyegaon tahsil. In the Soyegaon tahsil here Ajanta ranges make huge impact on south-west monsoon rain. Other tahsil shows following trends in the study region Aurangabad-34.20,Khultabad 34.80,Sillod 32.10,Paithan 36.92,Gangapur 32.00,Vaijapur 37.12,Paithan 34.25.

CONCLUSION

The present attempt made to show rainfall variability in Aurangabad district which is highly known as a drought prone area in Marathwada region result indicated that there are various temporary and physical factors make impact on rainfall distribution in the study region.

REFERENCES

1. Ahmad, E Indian Monsoon, New Perspective in Geography, Allahabad, Thinkers Library, pp.20-31
2. Deshpande, C.D. Geography of Maharashtra N.B.T. of India, New Delhi, pp.13-14
3. Tonnang HE, Kumar Z, Bal M, Singh SK, Rao NP et al. Predicting the impact of climate change on regional and seasonal abundance of the mealybug Phenacoccus solenopsis Tinsley (Hemiptera: Pseudococcidae) using temperature driven phenology model linked to GIS. Ecological Modeling. 2014; 288:62- 78.
4. Gouda KC. Sanjeeb Kumar Sahoo, Payoshni Samantray and Himesh Shivappa. Comparative Study of Monsoon Rainfall Variability over India and the Odisha State. 2017; 5:79: doi: 10.3390/cli5040079 3. Guhatakurta P. Extreme Weather Events: Floods, Droughts, Heavy Rains, Monsoon Monograph (Volume 1), Tyagi A., et al, (Eds.), Government of India, Ministry of Earth Sciences, India Meteorological Department. Gujarat