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A Geographical Analysis of Rainfall Variability in Jalna District

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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. Jalna 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 studies put light on annual rainfall variation in the Jalna district.

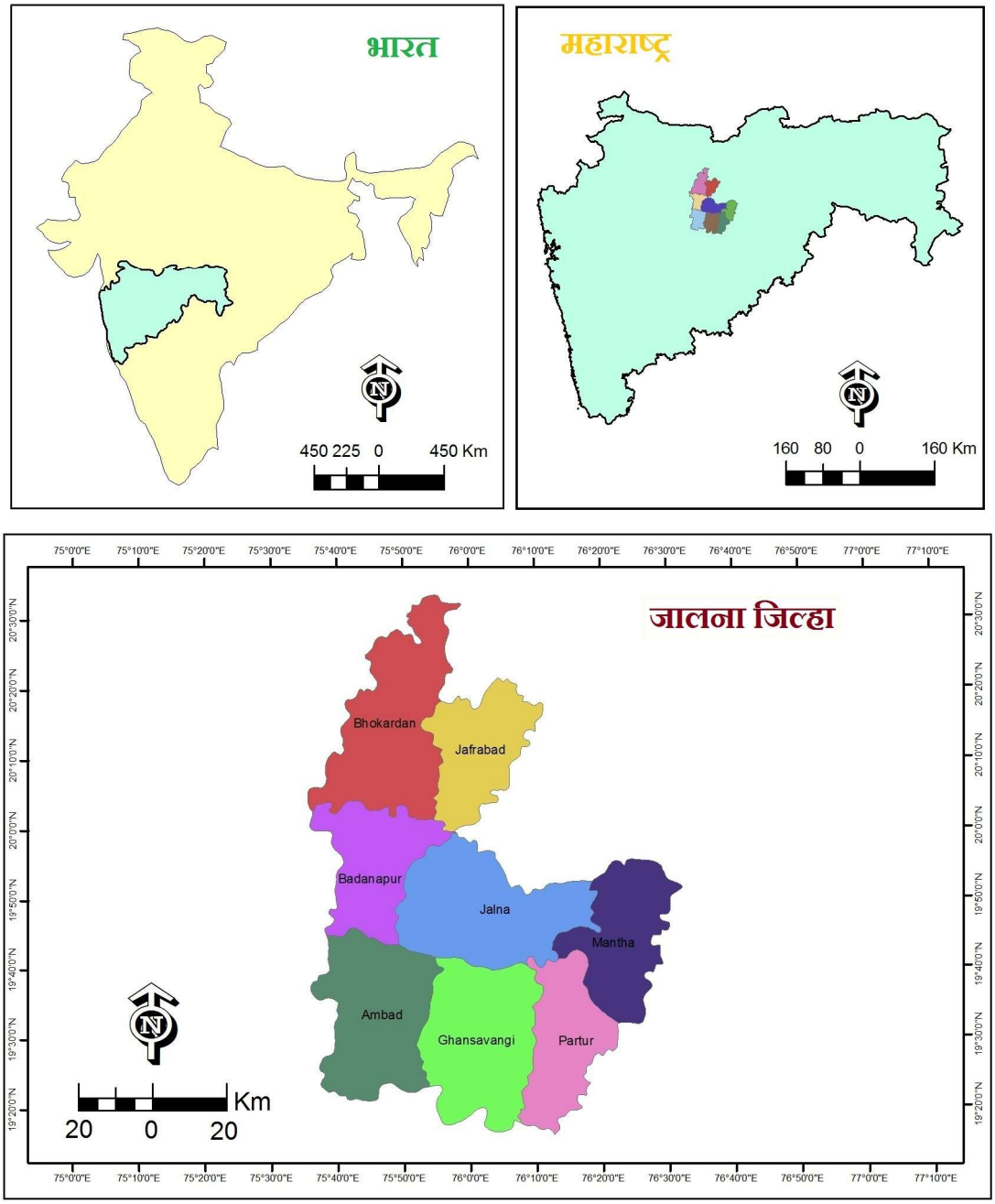
Keywords: *coefficient of variation, rainfall variability, spatial variation*

Study Region -

Jalna district is situated at the central part of the Maharashtra state of Republic of India and northern direction of Marathwada region specially district lies between $19^0$01' North to $21^0$03'North latitudes and $75^0$04' East to $76^0$04' East Longitude. Jalna district erstwhile a part of Jalna district was formed on 1st May, 1981 by carving out Jalna, Bhokardan, Jafrabad and Ambad tahsil of Jalna district and Partur tahsil of Parbhani district. The boundaries of Jalna are adjacent to Parbhani and Buldhana on east, Jalna on west, Jalgaon on north and Beed on South. Jalna district covers an area of 7,612 sq.km which is 2.47 percent of the total state area. It has population of 16.12 lakh as per 2001

census. Recently Jalna district is divided into eight tahsil for administrations these are Jalna, Ambad, Bhokardan, Jafrabad, Badnapur, Partur, Mantha and Ghansawngi.

Study Region Location 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 tahsil wise 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,

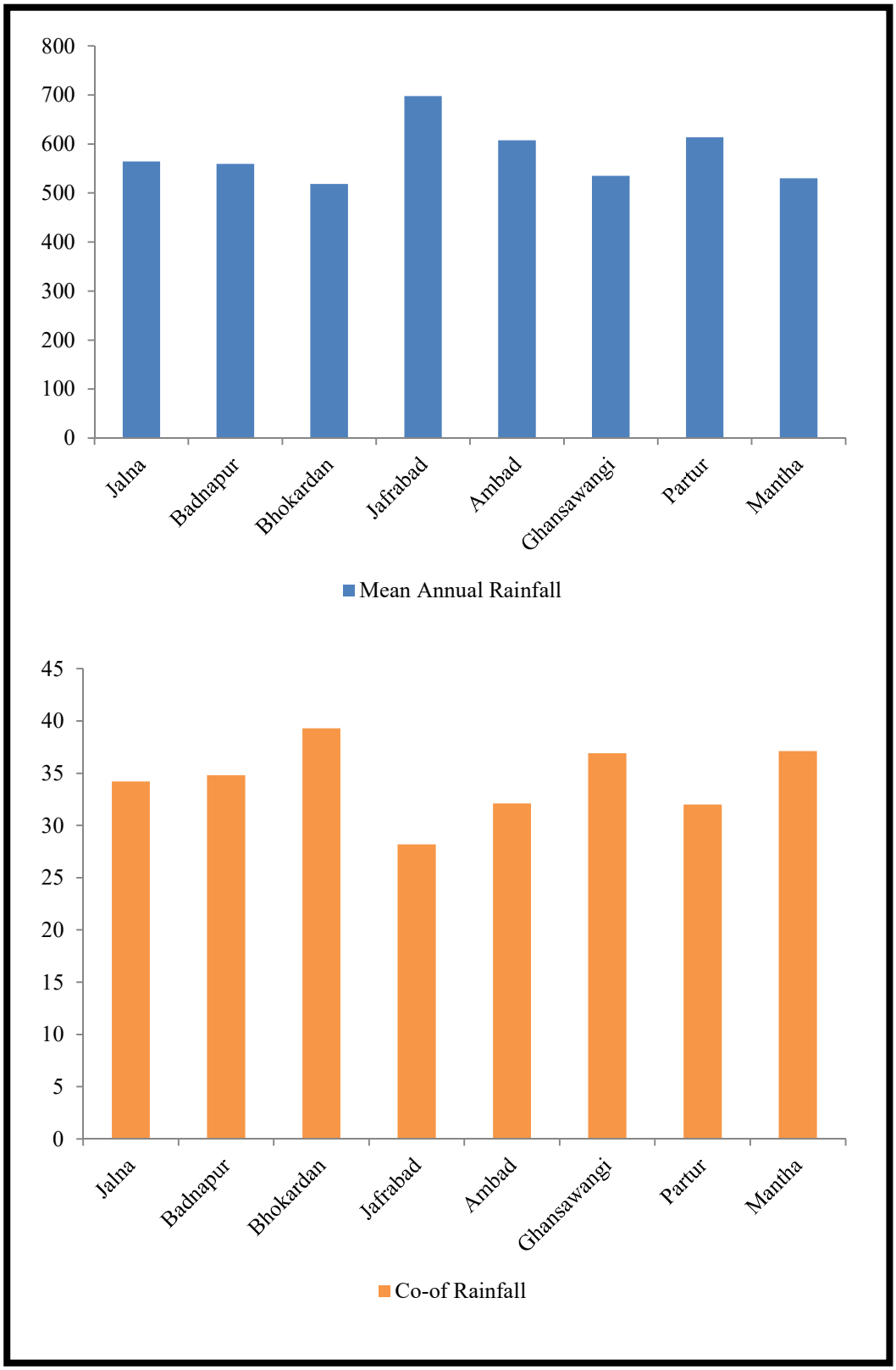
C.V. = Co-efficient of rainfall variability

S.D. = Standard Deviation

Table 1 - Mean Annual Rainfall and Rainfall Variability In Jalna District

S.N.	Tahsil	Mean Annual Rainfall	Co-efficient of Rainfall Variability
1	Jalna	564.53	34.10
2	Badnapur	559.55	34.70
3	Bhokardan	518.51	39.40
4	Jafrabad	697.61	28.12
5	Ambad	607.60	32.10
6	Ghansawangi	535.35	36.91
7	Partur	613.36	32.01
8	Mantha	530.14	37.11

Source-Data Compiled by Researcher



RESULT AND DISCUSSION-

above table shows that rainfall variability ranges from 28 to 39 percent. Highest rainfall variability 39.40 has seen in Bhokardan tahsil and lowest rainfall variability 28.12 has seen in Jafrabad tahsil. Ajanta ranges make huge impact on south-west monsoon rain.

Other tahsil shows following trends in the study region Jalna-34.10, Badnapur 34.70, Ambad 32.10, Ghansawangi 36.91, Partur 32.01,Mantha 37.11.

CONCLUSION

The present attempt made to show rainfall variability in Jalna 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.

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