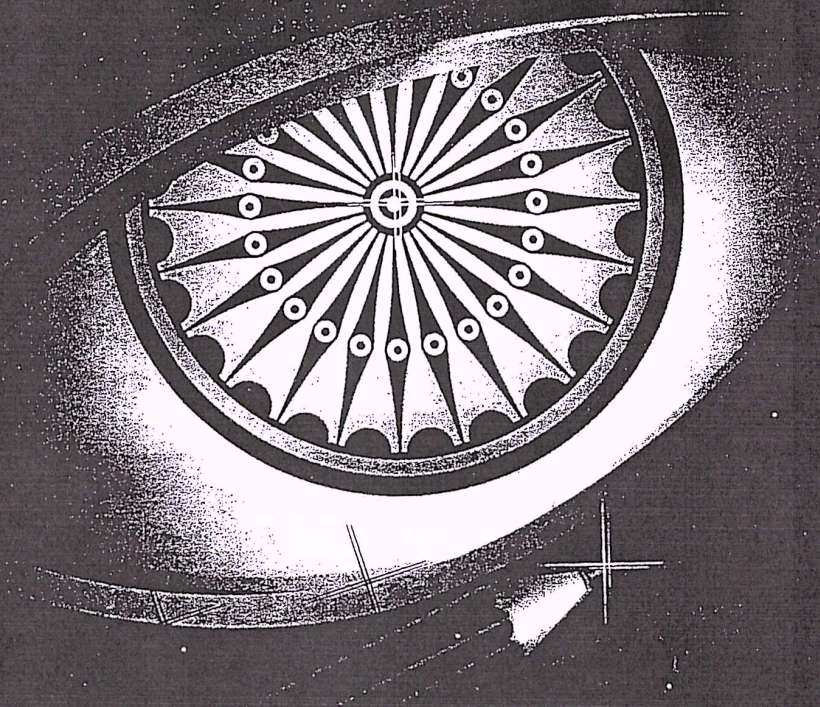


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"Rainfall Intensity of Beed District, A Geographical Study".

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Abstract:

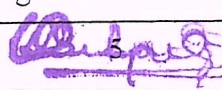
Rain is liquid water in the form of droplets that have condensed from atmospheric water vapor and then precipitated. Rain is a major component of the water cycle and is responsible for depositing most of the fresh water on the Earth. It provides suitable conditions for many types of ecosystems, as well as water for hydroelectric power plants and crop irrigation. The major cause of rain production is moisture moving along three-dimensional zones of temperature and moisture contrasts known as weather fronts. If enough moisture and upward motion is present, precipitation falls from convective clouds such as cumulonimbus (thunder clouds) which can organize into narrow rain bands. In mountainous areas, heavy precipitation is possible where upslope flow is maximized within windward sides of the terrain at elevation which forces moist air to condense and fall out as rainfall along the sides of mountains. On the leeward side of mountains, desert climates can exist due to the dry air caused by downslope flow which causes heating and drying of the air mass.


Keywords: - Intensity of rainfall, hydroelectric power, spatial-temporal, humidity.

Introduction:

The intensity of rainfall is a measure of the amount of rain that falls over time. The intensity of rain is measured in the height of the water layer covering the ground in a period of time. It means that if the rain stays where it falls, it would form a layer of a certain height. We say things like: 30 millimeter of rain fell today or it rained 20 millimeter in two hours. Sometimes people speak of the volume of water that falls on a square meter in a period of time: ten liter per square meter per day for instance. A millimeter of water equals a liter of water on a square meter. What a high or low intensity is hard to say. It depends on the local circumstances. Generally speaking a relatively low intensity is for instance 2 millimeter of rain a day and relatively high may be 30 millimeter an hour. High intensity of rainfall on steep slopes, may lead to flash floods. On flat areas it may lead to ponding or urban floods when the drainage capacity is insufficient for the intensity of the falling rain. The urban heat island effect leads to increased rainfall, both in amounts and intensity, downwind of cities. Rainfall is very important for every crop. Rainfall is water particles, either in the form of drops more than 0.5 mm diameter. Soil is providing the water and humidity to crops. Rainfall is cheap and important source to provide water to crops. Different crops need different quantity of water. Rainfall is increasing west to east in Beed district. The annual rainfall is received from south-west monsoon period that is about 80 percent of total rainfall. The characteristics of monsoon rainfall are variability, intensity, unreliability variations in rainfall effect on agriculture. The average rainfall in study region is 674.77 mm but spatial variation in average rainfall.




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Study Area:

Beed district is located in the central part of Maharashtra in Aurangabad division and forms a part of Marathwada region. The district lies between 18°28' and 19°28' North Latitudes and 74°54' and 76°57' East Longitudes. The district is bounded by Aurangabad and Jalna in the North, Parbhani and Latur in the East, Ahmednagar and Osmanabad in the South and Ahmednagar in the West. Godavari is the most significant river that flows on the borderline of Georai and Majalgaon Tehsils. The total area of Beed district is 10693. Sq.Kms and it is 3.47% of Maharashtra State. Further division of area is 40.25 Sq.Kms in urban parts and 10652.75 Sq.Kms in rural area. According to the 2011 census the total population of Beed district is 2,585,962 with 1352468 male and 1233494 female. In 2001 census, Beed had a population of 2,161,250 of which males were 1,116,356 and remaining 1,044,894 were female. Beed District population constituted 2.30 percent of total Maharashtra population. In 2001 census, this figure for Beed District was at 2.23 percent of Maharashtra population. There was change of 19.61 percent in the population compared to population as per 2001.

The objectives of the paper:

1. To study the importance the intensity of rainfall.
2. To study the impact of the intensity of rainfall on Agriculture.
3. To study Tehsilwise Changes the intensity of rainfall in study region.

Data base and Methodology:

The present study is based on secondary data. The data has been obtained from the related articles, research papers, reports, policies and plan documents of Government of India and Maharashtra. Some data has been obtained from websites of Govt. of India and Govt. of Maharashtra, beed.nic.in, been undertaken to know the environmental status. Secondary data will be collected from social economic review district census handbook, gazettes, decennial census Reports of Government of India.

Intensity of rainfall:

The intensity of rainfall is a measure of the amount of rain that falls over time. Intensity of rainfall is very important of crops production. Intensity of rainfall indicate that probability of irrigation and availability of water. The intensity of rain is the height of water layer covered ground in period of time. The formula of rainfall intensity is as fallow (Monkhouse and Wilkinson 1971.)

$$I = A/N$$

Here, A= Total rainfall in period of time.

N=Number of rainy days.

I= rainfall Intensity.

The study of rainfall intensity is important for identify rainy period and dry periods. This knowledge is useful for farming as well as irrigation management. Average intensity of rainfall in Beed district is 18.23 mm. Range of intensity of rainfall is 14.98 mm to 25.08 mm. The lowest intensity of rainfall in Patoda tehsil and that is 14.98 mm only and the highest rainfall intensity of



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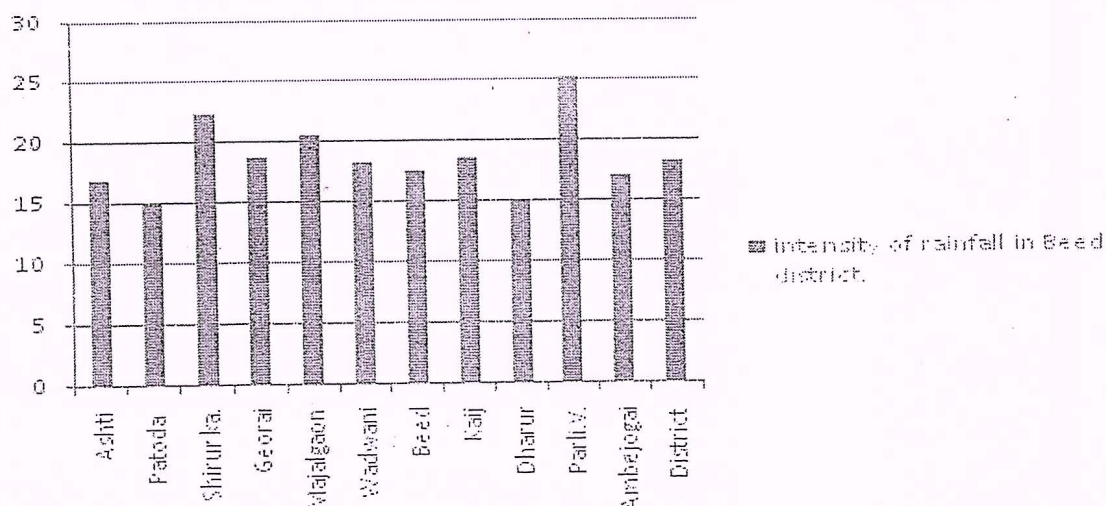
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rainfall is Parli (V.) and which is 25.08 mm.

Sr. No.	Name of Tehsils	Yearly rainfall	Total no.of rainy days	Intensity of rainfall.
1	Ashti	589.70	35	16.84
2	Patoda	599.40	40	14.98
3	Shirur (Ka.)	599.40	27	22.20
4	Georai	689.40	37	18.63
5	Majalgaon	800.90	39	20.53
6	Wadwani	800.90	44	18.20
7	Beed	629.90	36	17.49
8	Kajj	627.90	34	18.46
9	Dharur	629.80	42	15.00
10	Parli V.	727.60	29	25.08
11	Ambejogai	727.60	43	16.92
District average		674.77	37	18.23

Intensity of rainfall in Beed district.



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Conclusion:

The study of rainfall intensity is important for identify rainy period and dry periods. This knowledge is useful for farming as well as irrigation management. Average intensity of rainfall in Beed district is 18.23 mm. Range of intensity of rainfall is 14.98 mm to 25.08 mm. The lowest intensity of rainfall in Patoda tehsil and that is 14.98 mm only and the highest rainfall intensity of rainfall is Parli (V.) and which is 25.08 mm.

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