



A Study of Climatic Conditions in Jalna District

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Climate is the long-term average of weather, typically averaged over a period of 30 years. More rigorously, it is the mean and variability of meteorological variables over a time spanning from months to millions of years. Some of the meteorological variables that are commonly measured are temperature, humidity, atmospheric pressure, wind, and precipitation. The climate of the study region is generally dry except rainy season. The climate of Jalna district is pleasant during the greater part of the year. The climate may be divided into four short seasons. The cold season from December to February is followed by the hot season from March to May. The period from June to September constitutes the south west Monsoon season. October to November forms the post – monsoon season.

i) Temperature:

Temperature conditions have been far less erratic from year to year than rainfall conditions. There is no meteorological observatory in the district but it is located at Chikalthana (Aurangabad) and the records of this observatory may be taken as representative of the meteorologically conditions prevailing in the district in general.

December is the coldest month of the year. The mean daily minimum temperature is 13⁰ C. From the beginning of the month of March, there is a rapid rise in the both day and night temperatures. May is the hottest month of the year with the mean daily maximum temperature 39.8⁰C and mean daily minimum temperature 24.4⁰C. During the hot season, the heat is often intense and the dry temperature on individual days may rise about 45⁰C. With the withdrawal of monsoon by about the end of September, the day temperature increases a little. Nevertheless, night



temperature decrease progressively, after the withdrawal of the monsoon. After October both day and night, temperature steadily decreases.

The detail annual average temperature in Jalna district is shown in table 1 with a period of year 2001 to 2015.

Table 1

**Annual Average Temperature in Jalna District
(Year 2001 to 2015)**

Year	Annual Average Temperature in ⁰ C	
	Maximum	Minimum
2001	36	12
2002	34	11
2003	37	10
2004	36	12
2005	35	13
2006	36	11
2007	37	12
2008	36	13
2009	38	12
2010	38	15
2011	37	14
2012	39	12
2013	39	13
2014	38	12
2015	39	13

Source: Jalna District Socio-Economic Abstract-2016

The statistics of temperature of Jalna district shows fluctuation during 2001 to 2015. The highest annual temperature is found in the year 2012, 2013 and 2015 and that is 39⁰C on the contrary lowest annual temperature is observed for the year 2002 and 2006 which is only 11⁰C. It has been observed that, year by year, the temperature is increasing. The study of 15 years reveals 2⁰C increase in temperature in the district which is a sign danger.



Mostly, growths in temperature in Jalna district is a result of growth in settlements, increasing industrial area and increasing number of vehicles, declining forest land, erratic nature monsoon and its consequences on natural vegetations.

ii) **Rainfall:**

More than 85 percent of annual rainfall on the study region receives from south-west monsoon. The rainiest month being July and August, July and August gets the heaviest rainfall from southwest monsoon winds. The south-west monsoon is the pivot around which almost the entire farm life and economy swings. Rainfall has control and for this reason is a seasonal rhythm of conditions influencing the patterns of landuse.

In order to find out the trend of rainfall, researcher has calculated co-efficient of variability using the data from 2001 to 2015. The record of the rainfall in the district is available for the period ranging from 2001 to 2015. The detail of mean annual rainfall and rainfall co-efficient of variation is given in table 2.

Table 2

Mean Annual Rainfall & Co-efficient of Rainfall Variability in Jalna District (Year 2001 to 2015)

Sr. No.	Tahsil	Mean Annual Rainfall in M.M.	Co-efficient of Variability in %
1	Partur	702.3	69.54
2	Bhokardan	675.97	68.79
3	Mantha	690.33	65.73
4	Badnapur	711.26	63.11
5	Ghansawangi	648.84	61.36
6	Ambad	705.74	60.24
7	Jafrabad	656.89	59.95
8	Jalna	698.5	59.25
Jalna District		686.22	63.34

Source: Computed by the Author.



The mean annual rainfall in the region varies from 690 mm to 711 mm. It has been observed from table 2 that, co-efficient of rainfall variability ranges from 59.25% to 69.54% in study region. Rainfall variability in percentage is observed highest in Partur tahsil (69.54%) whereas lowest variability is found in Jalna tahsil (59.25%) during the period of investigation. Map 2.4 indicates that Partur, Bhokardan & Mantha tahsils has above 65% variability and Badnapur, Ghansawangi and Ambad comes under 60% to 65% variability and below 60% variability is observed in Jafrabad & Jalna tahsils.

Other weather phenomena:

a) Humidity: Except during the south-west monsoon season, when the relative humidity are high and the air is generally dry over the entire study region. The summer monsoons are the driest when the relative humidity is generally between 20% to 25% in the afternoon.

b) Cloudiness: During the south-west monsoon the skies are generally heavily clouded or overcast. In the rest of the year, the skies are mostly clear.

c) Winds: Winds are generally light to moderate with increase in speed during the latter half of the hot season and in the monsoon season.

iii) Special weather phenomena: Thunderstorms occur in all months of the year. They occur more frequently during April to June and from September to October. Dust storm occurs sometimes during summer afternoon in the study region.

References:

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