

## A Study of Climatic Conditions in Beed District

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### Introduction:

Climate plays an important role in the affecting the characteristic of the agriculture economy in a region. It can influence the choice of the farming system either indirectly through its impact on the soil formation or the directly through such as the length of the growing season, the occurrence of the forest and the availability of the water for the crop growth.

Climate plays an important role in the development of the nation economy through affecting the energy of and stimulates to, man in his various environment. Climate is also reflected in the habits and the requirements of the consumers and thus affects the prospect for the consumer goods and Marketing. In a large measure climate determines where man may live and thrive what crops he may raise? What types of the home he may appropriately build? What sort of the clothing he may wear? And what pests and the diseases he must be combat? The potential crop producing capability of the given area is dependent mainly on the existing climatic and the soil condition, the success or the failure of the cropping season is determined by the intensity of the climatic factors. The three most important factors of the climate from the standard point of the plant response are the temperature, water, supply, and the light and they may be treated as primary determinants of the crop growth.

### Study Region:

Beed District is located to the south of Aurangabad District and centre of Marathwada. Geographically, Beed is spread over 18°27' to 19°27' North latitude and 74°49' to 76°44' East longitude. The district had total population of 2585049 as per 2011 census which account to 2.30% to total. The

total area of the Beed District is 10694 sq.km which account to 3.47% to Maharashtra State. There are 11 tahsils in the district, i.e. Beed, Georai, Patoda, Ashti, Shirur, Ambajogai, Kej, Majalgaon, Dharur, Parli and Wadvani. In 2011 census, the district has 9 towns and 1368 villages (including 11 uninhabited villages). The total literacy rate of the district as per 2011 census is 76.99%. The rural and urban literacy rates are 74.73% and 86.04% respectively.

Sex ratio of the District is 916 and ranks 31st among the Districts in the State. The sex ratio for rural and urban areas of the district is 912 and 933 respectively. In 2011 Census, the district recorded 3,51,254 (13.6 percent) Scheduled Caste population and 32,722 (1.3 percent) Scheduled Tribe population. It is surrounded by Aurangabad and Jalna in the North, Parbhani and Latur in the East, Ahmednagar and Osmanabad in the south and Ahmednagar in the west. The east - west extension of Beed district is 268 kms and north-south distance of the district is 127 kms. The shape of the Beed district is broadly likely that of a trapezium, the northern and southern sides of which are nearly parallel. Godavari, Manjra, Seena, Bindusara, and Kundalika are important rivers in the district. The Godavari forms the boundary of the district from the village of Kuranpimpri to Borkhed throughout the northern border. The southern boundary mostly coincides with the course of the Manjra but makes a considerable number of deviations from it, comes to the north and others to the south.

### Climatic Conditions in Beed District:

The climate of this district is on the whole dry expected in the south – west monsoon season. The year may be divided into four seasons. The cold season from the December to the February is followed by the hot season from the March to the May. The

period from the Jan to the September is the south-west monsoon season while October and the November constitute the post – monsoon season. There are a number of the important elements of the climatic condition they are as follows:

**A) Rainfall:**

Rainfall is the dominant single weather element influencing on the Agricultural production and marketing. It is also becomes a climatic hazards to farming when it is characteristic with scantiness, concentration intensity variability and the unreliability.

For current research data of last 25 years (year 1990 to 2015) as been considered for calculation of mean annual rainfall and co-efficient of rainfall variability. The same is depicted in table 1.

Table No. 1

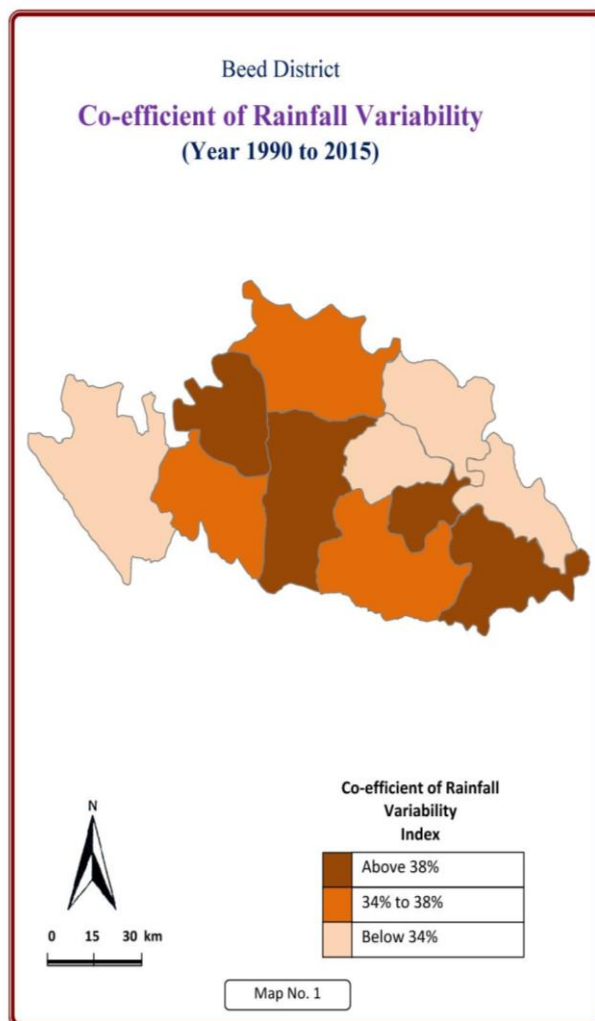
**Mean annual rainfall and co-efficient of rainfall variability (Year 1990–2015)**

Sr No	Name of the tahsil	Mean annual rainfall in mm	Co-efficient of rainfall variability
1	Ambajogai	650.88	43.49
2	Ashti	789.05	29.65
3	Beed	678.78	40.10
4	Dharur	641.46	38.76
5	Georai	655.59	35.96
6	Kej	584.10	36.18
7	Majalgaon	728.88	32.95
8	Parli	724.61	32.52
9	Patoda	677.25	35.33
10	Shirur Kasar	647.20	38.85
11	Wadwani	678.68	29.90
	Average	677.86	35.79

Source : Socio-Economic Abstract of Beed District.

Table 1 shows that, the district has annual rainfall of 677.86 mm. It will be seen from the table 2.1 that mean annual co-efficient of rainfall

variability in the district ranges between 29.65 to 43.49 which is observed for Ashti and Ambajogai tahsils respectively.



Beed, Shirur Kasar and Dharur has high co-efficient of rainfall variability (above 38) whereas medium co-efficient of rainfall variability (34 to 38) has been observed for Kej, Georai and Patoda. Low co-efficient of rainfall variability has been noticed from the tahsils of Majalgaon, Parli, Wadwani and Ashti tahsil.

The district could be divided on the basis of the rainfall returns for the series of the years in to three zones as given bellows:

- I. The Eastern Zone which comprises Ambajogai, Kaij, parts of the Majalgaon and the Beed tahsils. This zone gets more or the less assured rainfall.
- II. The central zone which comprises parts of the Beed Western part of the Majalgaon and the part of the east Georai tahsils and receives moderate rainfall.

III. The western zone which comprises western part of the Georai west part of Beed, Ashti and the part of the Patoda tahsils and receives irregular and uncertain rains.

The south –west monsoon during June September influences the agronomy of the district to a very great extent. It also affects the agricultural operations cultivable practices and the system of the crop –rotation. The rainfall during the north- west monsoon i.e. October to November though scanty is a very helpful for the rabbi crops and also augments water in the water wells and the tanks, some showers in the first quarter of the year have also beneficial effects on the growth of the rabi crop and the summer crop.

#### B) Temperature:

Each crop plant needs a certain number of the effective heat units for the generation, growth, staking, maturity and ripening. This is called as the thermal constant and the various from crop to crop. the temperature above the minimum is therefore effective in furthering the growth of the plant towards maturity and the ripening the crucial air temperature is 16<sup>0</sup>c at which plant grows. Ideal temperature condition for crop production are between 18.3<sup>0</sup>c and 23.9<sup>0</sup> c.

Although on an average the temperature in January and February are slightly higher than in December, the rapid rise in temperature starts only by about beginning of the march may is the hottest month with the mean daily maximum temperature may be as high 46<sup>0</sup>C with the advance of the south west monsoon in to the district by the about the second week of the June the temperature falls appreciably and the weather is the pleasant through out the south west monsoon season by the about the first week of October the monsoon withdraws and the day temperature increases slightly and a secondary maximum is reached in October up to 32<sup>0</sup>C (table 2.1) thereafter the temperature begin to decrease gradually.

#### C) Humidity:

The relative humidifies are high during the south west monsoon season. After September the humidifies decreases gradually and in the cold summer season the air dry particularly in the afternoon when relative humidity may be less than 30 percent.

#### D) Cloudiness:

Skies are heavily clouded to overcast in the south-west monsoon season. There is a rapid decrease of cloudiness in the post-monsoon month. In the rest of the rest of the year the skies are generally clear or the lightly clouded

#### E) Winds:

Winds are moderate in the strength in the latter half of the summer and in the south –west monsoon period and the light in the rest of the year. During he south–west monsoon season winds blow from predominantly from the direction between south–west to the north–east. In the post monsoon and the winter months winds are from directions between east and north. from about the beginning of the swimmer winds from directions between south – west and north – west appear and these predominantly by my continue till the onset of the monsoon.

#### F) Special weather phenomena:

Thunder showers occur in the summer and monsoon month, their frequency being higher in June and September. Dust raising winds are common in the summer afternoons.

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