

Q. Discuss the spatial and Temporal Variation of Rainfall in India. Has this pattern been changing in recent years? Explain.

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Ans - Temporal variation of rainfall is variation in rainfall over time in specific area while spatial variation is variation over area in specific time.

Temporal variation of rainfall in India.

- Temporal variation can be divided into 4 parts.

1. South West Monsoon season :- 80% of total rainfall occurs during this season between June to August last week.

2. Retreating monsoon season :- Inter tropical coverage zone (ITCZ) starts moving towards south and Tamilnadu gets substantial rain between September to November.

3. Winter season :- Rain mostly mostly occurs in northern part of India due to western disturbance between the months of December, January and February.

4. Summer season : occurs in months of March, April and May. ~~and rain happens~~ due to storms and torrential rainfall are prevalent in this season.

Spatial variation

- In terms of rain India can be divided into 4 regions.

1. High rain region :- mainly mountain areas of Uttarakhand and Himachal. And sub Himalayan area of North East region. Rainfall above 200 cm.

2. Mid Rain Region :-

- Bihar, U.P., M.P., Orissa, West Bengal e.t.c, and rain between 150 to 200 cms.

3. Low rain Area :- Gujarat, Andhra Pradesh Karnataka rainfall around 100 cm.

Extremely low

4. Low Rainfall Area :- Below 100 cm rainfall. western part of Rajasthan and by neighbouring Gujarat. some some part of Andhra Pradesh.

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Recent Variation

spatial variation: ① From the hydrograph of various rivers - South Indian states are becoming more rain deficit while heavy flood is evident in Brahmaputra and Ganga Basin.

② As per meteorological department report extreme rain and drought has increased by 3 folds over last decade.

Temporal Variation

- ① Delay in rain onset.
- ② sudden break in rainy season
- ③ short duration of rain.

Reasons of variation

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1. Global Warming: After US and China researchers global warming and ~~dust~~ excess of dust formation has affected the Indian monsoon.
2. El Nino and La Nina : This year ~~El Nino~~ affected the onset of Indian monsoon.
3. Western Disturbance : May ~~off~~ affected the cyclone formation in Mediterranean sea which ultimately affect the winter rain. This may threat the food security mainly ~~the~~ Ravi crops.
4. Indian ocean dipole :-