

# MONSOON



## • Factors affecting climate of India

1. Latitude
2. Altitude
3. Pressure and wind system
4. Relief features
5. Ocean Currents
6. Distance from Sea

• Climate: the average weather in a given area over a longer period of time. Data taken of 30 years

• Weather: the term refers to temporary conditions of the atmosphere, including temperature, atmospheric pressure, wind, humidity, precipitation, and cloud cover

### Winter Season

Chilling winds from Arctic/Central Asia affects winter season, but they are blocked to a certain extent by the Himalayas

### Winter Rainfall

It is known as Upper atmospheric Circulation

At 25°N latitude in February

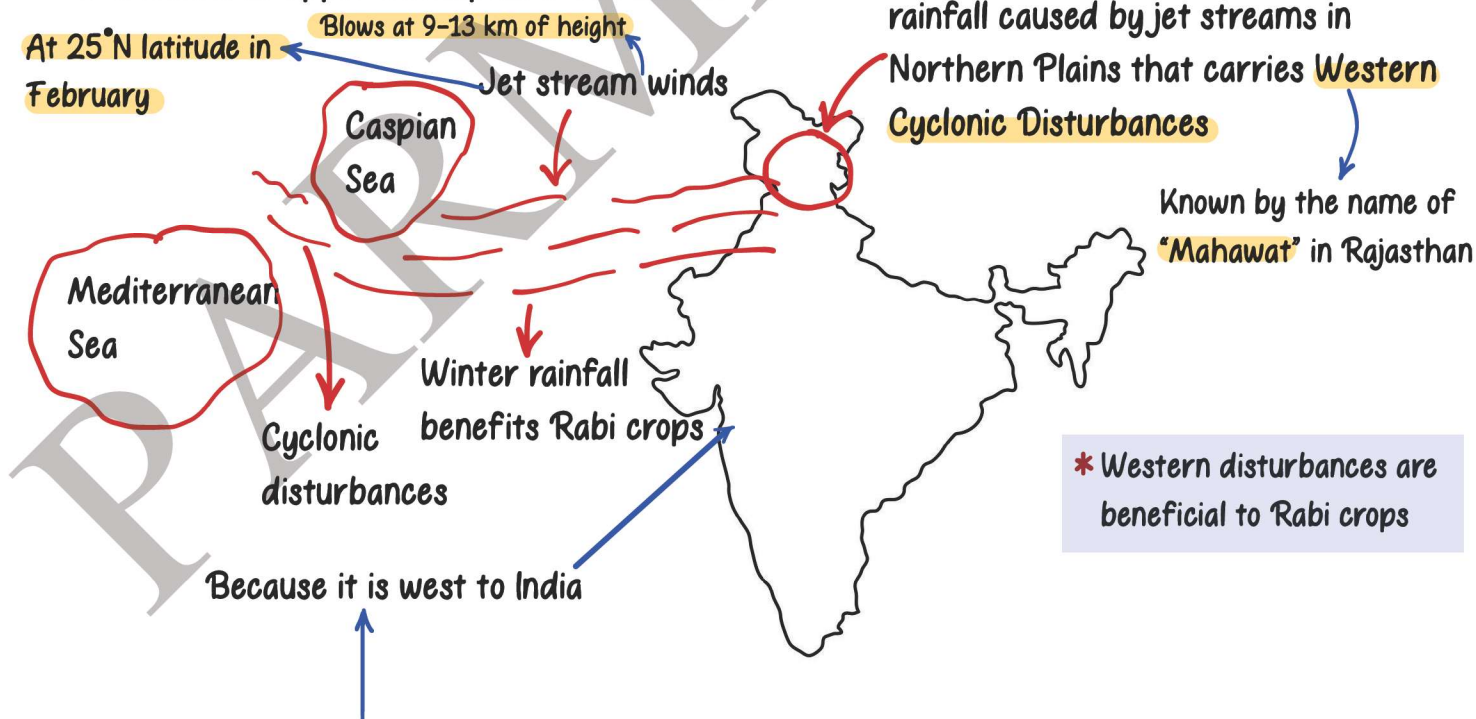
Blows at 9-13 km of height

Jet stream winds

rainfall caused by jet streams in

Northern Plains that carries **Western Cyclonic Disturbances**

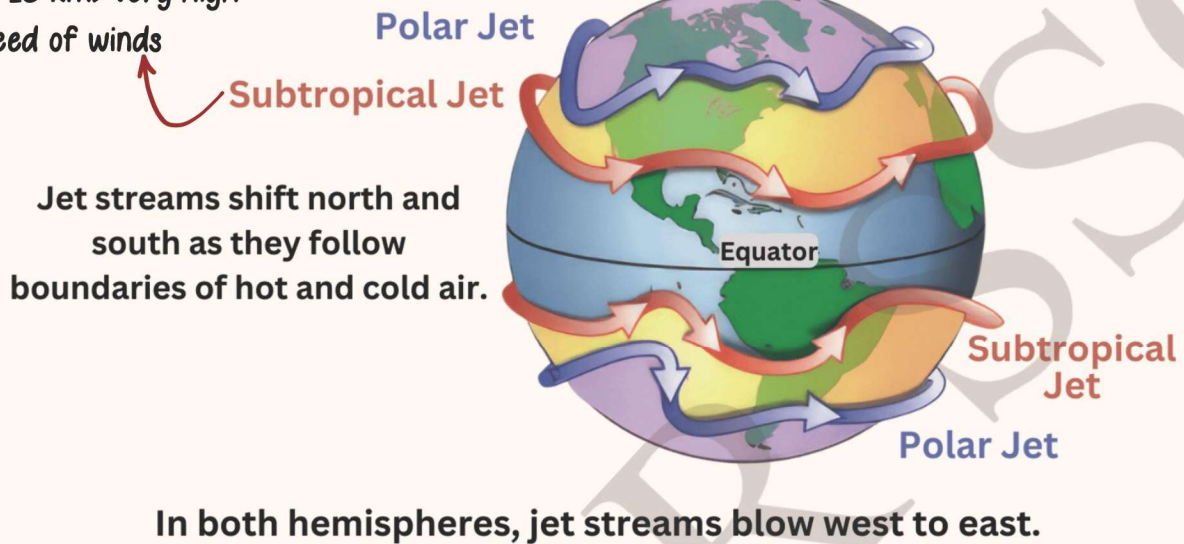
Known by the name of "Mahawat" in Rajasthan



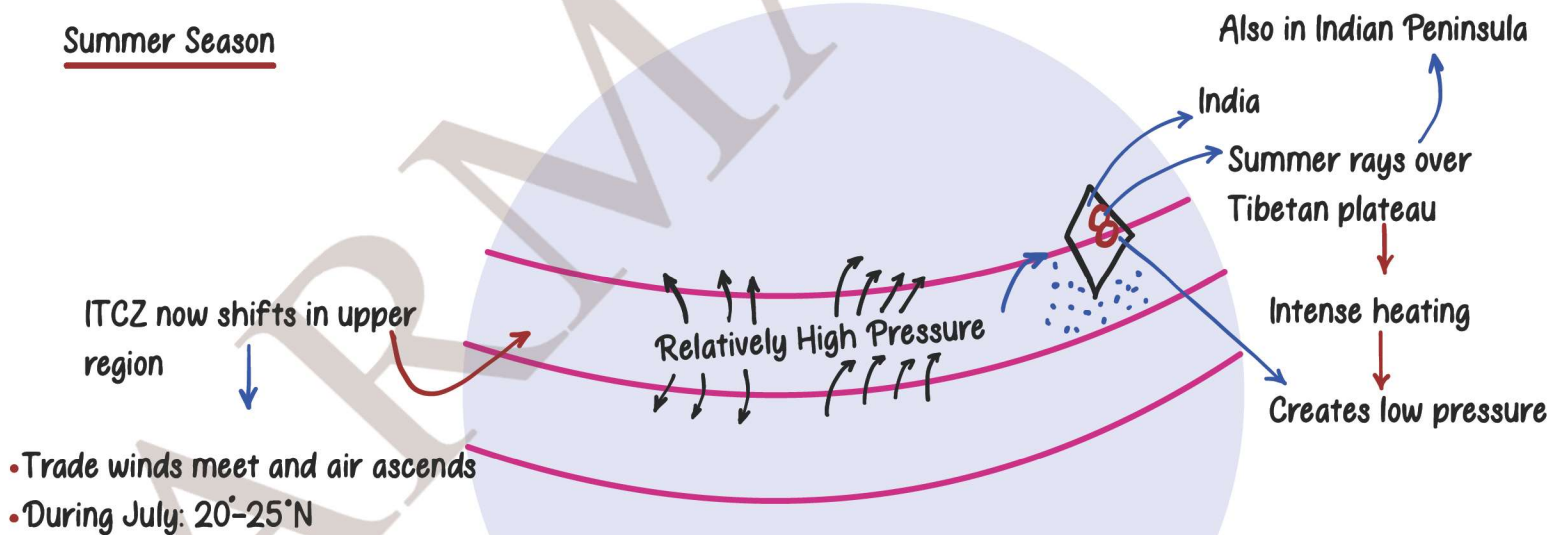
\* Western disturbances are beneficial to Rabi crops

Inward of Western Disturbances through jet streams is marked by increase in prevailing night temperature

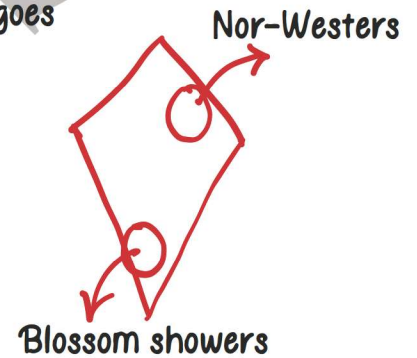
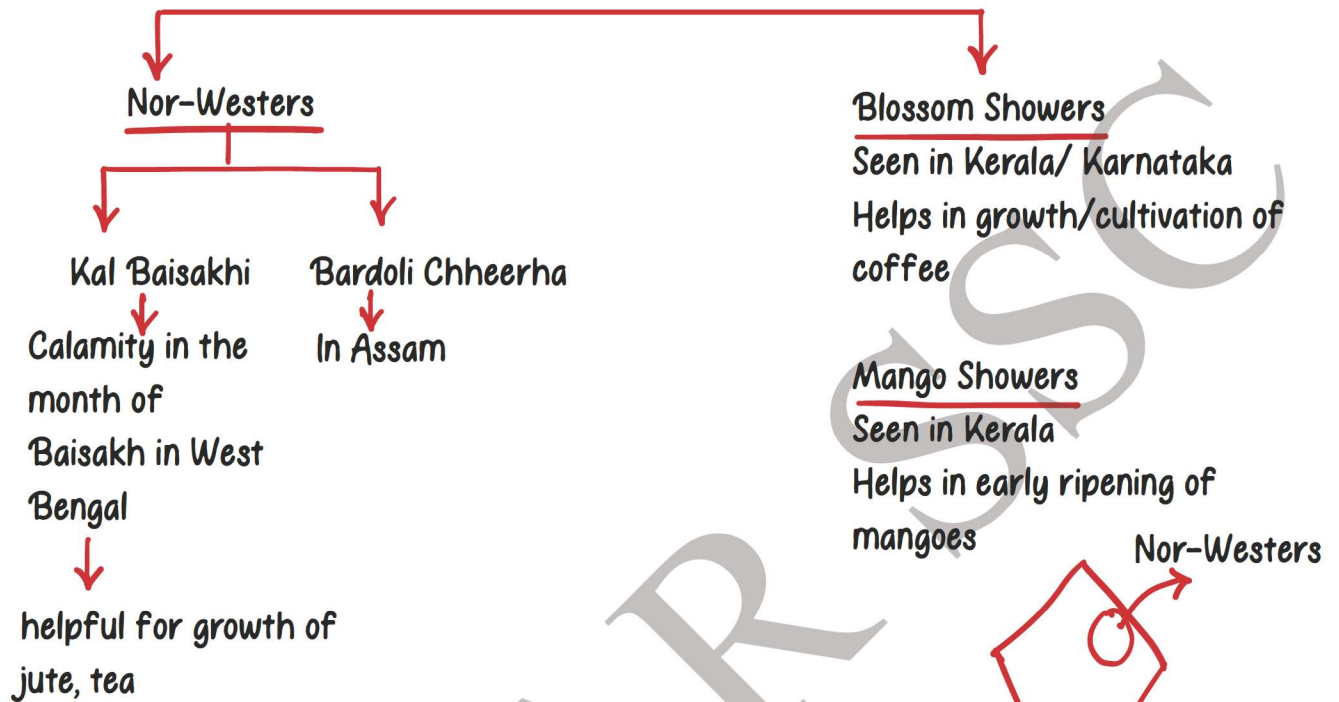
In upper troposphere  
(9–13 km) very high  
speed of winds



### Summer Season



## Pre-Monsoon Showers



### • On Set of Monsoon

It is derived from Arabic word "Mausim" meaning seasonal reversal of winds

Beginning in Kerala in 1st week of June in the Western Ghats

Orographic rainfall

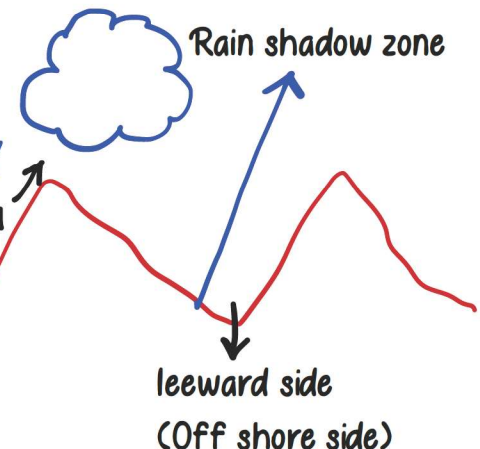
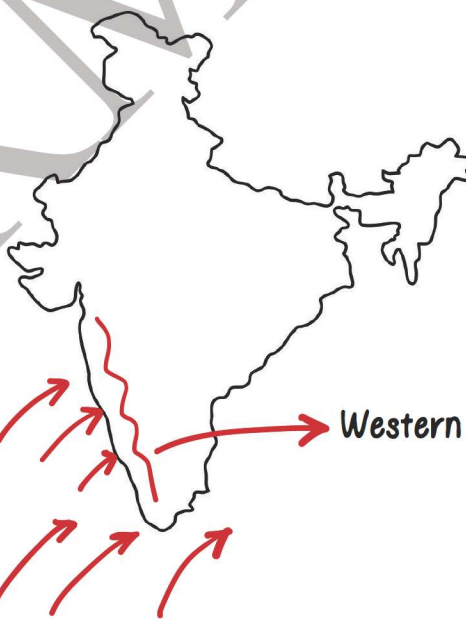
Winds from South West direction, that is why also known as **Southwest Monsoon**

Western Ghats

Wind ward side (On shore side)

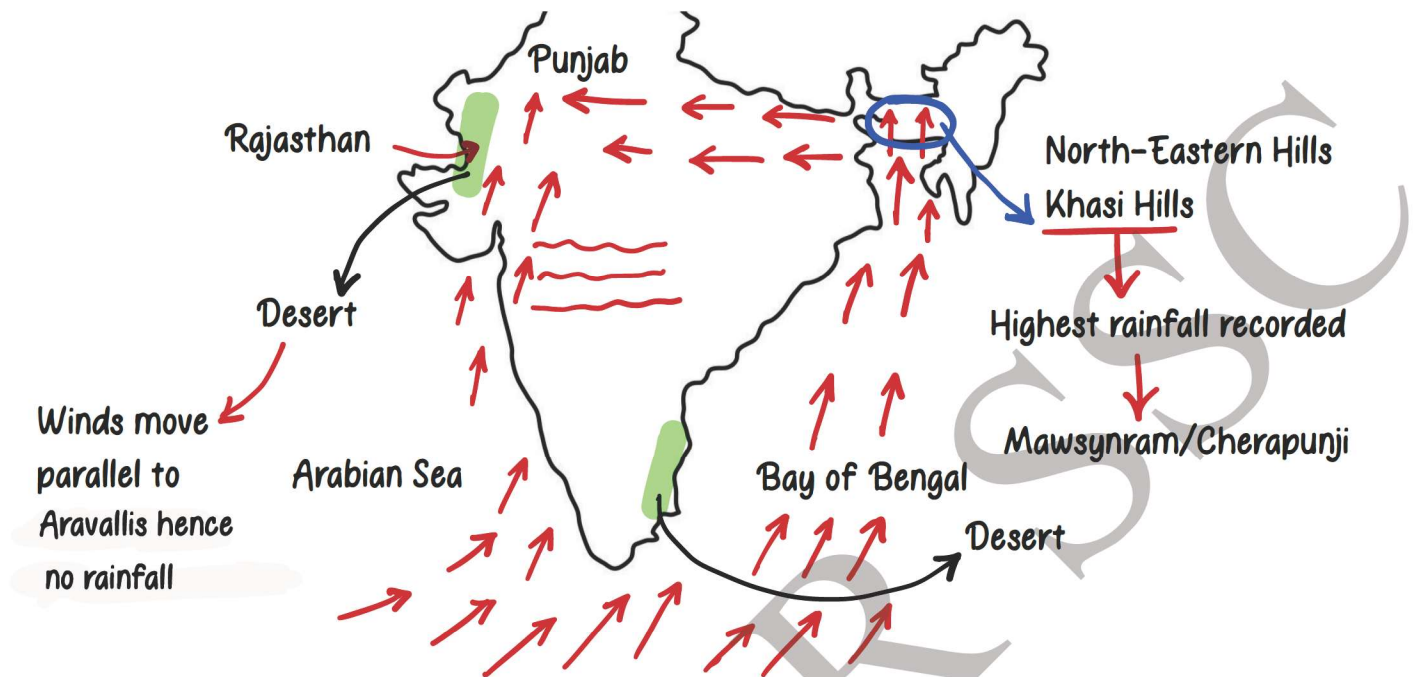
Rain shadow zone

leeward side (Off shore side)





## Rain Bearing System



- Bay of Bengal branch and Arabian Sea branch of South West Monsoon meet at Punjab

### Break in Monsoon



Sudden decrease in rainfall after the onset of monsoon

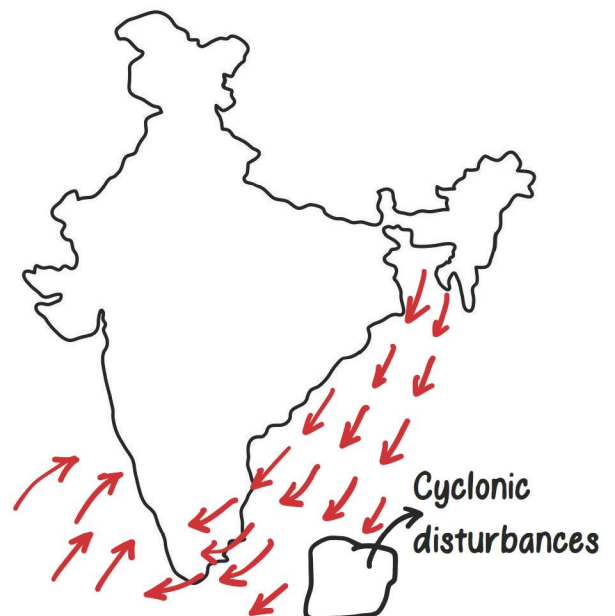
### Retreating monsoon



Also known as North-East Monsoon and it causes rainfall over Coromandel coast (Tamil Nadu/Andhra)

### In North India

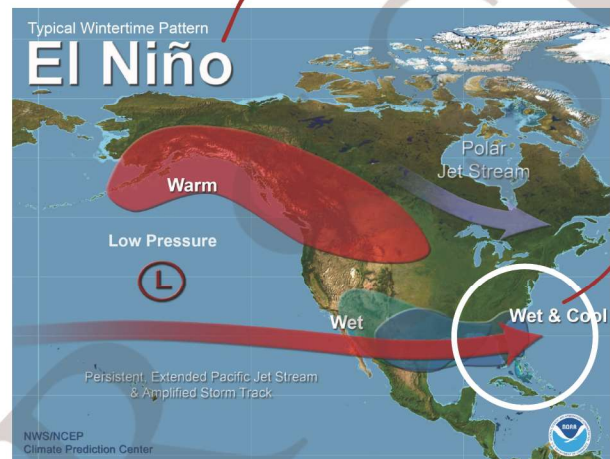
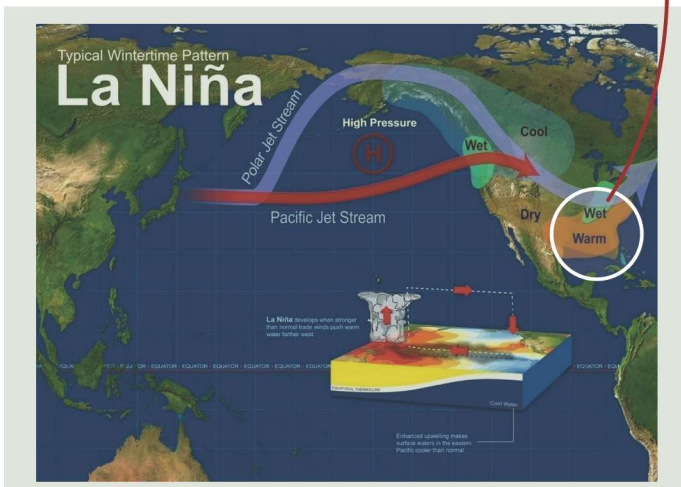
- Clear skies
- October heat: oppressing heat



Warm current

Adversely affects the monsoon

North East winds  
weakens thus  
water returns



## La Nina

## El Nino

Meaning: Small girl

Meaning: Child Christ/Small boy

Below average sea surface temperature in east-central equatorial Pacific (cold phase on ENSO cycle)

Above average sea temperatures in east-central equatorial Pacific (warm phase of ENSO cycle)

Trade winds strengthen, pushing warm water westward

Trade winds weaken, allowing warm water to spread eastwards

Seen every: 2-7 yrs

Seen every: 3-7 yrs

Leads to cooler global temperatures

Leads to warmer global temperatures

It can cause intense rainfall in Australia and India along with heavy floods; drier conditions in South America

It can cause droughts in Asia and Australia and in the US, El Nino has its strongest impact during winter

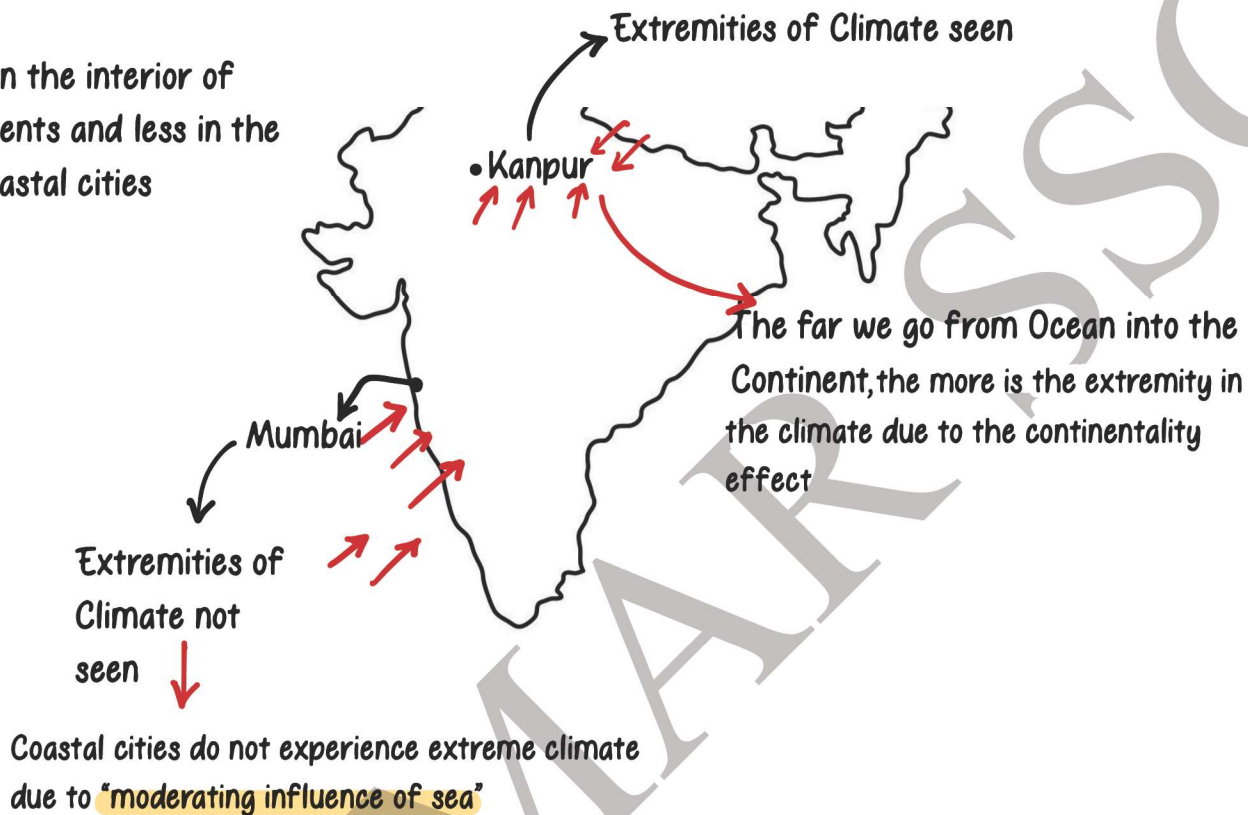
Fishing industries will flourish

Fishing industries won't flourish

## Variation in Temperature/Rainfall

1. **Diurnal** Range of Temperature: Daily range of temperature
2. Annual Range of Temperature
3. Annual Range of Rainfall

More in the interior of  
Continents and less in the  
the coastal cities



## Seasons and Months

Seasons	Months (According to the Indian Calendar)	Months (According to the Indian Calendar)
Vasanta	Chaitra-Vaisakha	March-April
Grishma	Jyaistha-Asadha	May-June
Varsha	Sravana-Bhadra	July-August
Sharada	Asvina-Kartika	September-October
Hemanta	Margashirsa-Pausa	November-December
Shishira	Magha-Phalguna	January-February