

Climate of India

What do you mean by 'burst of monsoon'?

Monsoon generally starts in the south-western coast of India by the first week of June. Every year by the 5th June, the first shower starts. Monsoon sets on 4th June at Malabar coast, 10th June on Andhra coast and 13th June on West Bengal. By the 15th June, the entire subcontinent comes under the influence of monsoon. This is called the 'burst of monsoon' or 'onset of monsoon'.

Name two places in India where rainfall occurs during winter. Explain the reason.

Punjab Plain receives rainfall during winter by western disturbances. During winter moist westerlies enter in parts of Punjab Plain and western Jammu and Kashmir which brings the moisture from Mediterranean Sea and cause the rainfall in Punjab Plain. This phenomenon is known as 'Western Disturbances'.

Coromandal coast receives winter rainfall or twice rainfall in a year. During winter the Coromandal coast receives rain by north-east monsoon wind. North-East monsoon wind is dry and cold wind which do not cause rain all over the country. But after crossing Bay of Bengal it can collect some moisture which cause the rain in the coast of Tamil Nadu.

What is EL-Nino and La-Nina?

EL-Nino is a Spanish word which means Christ child. It is a warm ocean current. It flows along the coast of Peru in Pacific Ocean. But sometimes it moves towards Indian Ocean (especially during December). It disrupts the south-west monsoon winds during summer and cause drought in parts of India subcontinent.

La-Nina is a Spanish word which means 'girl child'. It is cold oceanic current. It is just opposite of EL-Nino. Sometimes it brings some moisture and influences the climate of India. It is favourable for the growth of planktons and other aquatic animals.

What is Ashwiner Jhar?

During the season of autumn or retreating monsoon period, the collision occurs between south-west monsoon winds and north-east monsoon winds. It develops mainly in coastal region due to the variation in temperature from sea to land. Thus, cyclonic condition occurs in the Bay of Bengal coast (West Bengal, Odisha and Andhra Coast). This phenomenon is named as Ashwiner Jhar as it occurs in the Bengali month 'Ashwin'.

Why Indian climate is called tropical monsoon type of climate?

India's climate is called tropical monsoon type of climatic because India lies in the tropical zone and tropic of cancer passes through middle of this country. Due to tropic of cancer most of the part receives hot summers. Thus it is a tropical climatic region.

There is a great influence of monsoon wind. Most salient feature of India climate is cycle of seasons which is mostly influenced by monsoon wind. North-East and South-West blow during winter and summer respectively. Most of the part of India except western part receive heavy rainfall due to south-west monsoon wind. Thus the climate of India is called Monsoon type of climate.

What do you mean by lapse of temp?

In the troposphere layer the temperature decreases with increasing altitude. Temp decreases 6.5°C for every 1000 m of ascent or 166 m, temp decreases by 1°C .

Discuss the origin of monsoon wind.

The south-west monsoon winds blow during rainy season (June - Sept) in Indian subcontinent. The south west monsoon wind is actually derived from south-east trade winds. During hot summer season, temp remains very high in the plainland of India. Thus low pressure belt occur in Indian mainland which attracts the south-east trade winds to cross the equator. After crossing

equator, the south-east Trade wind deflected to their right and blow as south-west monsoon winds. Thus the monsoon winds bring huge amt of moisture and cause heavy rainfall all over the country.

What is the influence of Jet stream on Indian climate?

Jet stream is the fast moving wind blowing in upper layers of troposphere. It influences climate of India immensely. In India, sub-tropical westerly Jet blows in winter and tropical Easterly Jet blows in rainy season. In winter with the advancement of westerly southward intensity of winter increases while with the shifting of Easterly Jet northward dry spell occurs resulting drought.

What is Loo?

Loo is a strong, dusty, gusty, hot and dry local wind which blows over the western Indo-Gangetic Plain region of North India and Pakistan. It is strong in the month of May and June. Due to its very high temperature exposure to it often leads to fatal heat strokes.

Differentiate btw south west monsoon and north east monsoon.

South west monsoon	North east monsoon
1) It enters India from the Arabian Sea and Bay of Bengal.	1) It enters India from Central Asia.
2) Blows during rainy season June - Sept	2) Blows during winter (Dec - Feb)

3) It's onshore wind.

4) It gives rainfall all over country.

5) It gives countrywide rainfall.

6) It is off shore wind

7) It helps in lowering the temperature of the country.

8) It gives rainfall only in Punjab plain and Coromandal coast

Explain why Shillong receives less rainfall compared to Cherrapunji.

The south-west monsoon wind of Bay of Bengal travel in north direction. Cherrapunji lies in south and Shillong in the north ward direction in Meghalaya. In between there is a border of Khasi hills so the wind first visit Cherrapunji and obstructed by Khasi hills burst there giving it highest rainfall whereas Shillong lies in the rainshadow area some winds escape and carry moisture and gives rainfall Shillong. So Shillong receives less rainfall than Cherrapunji.

Why Shimla is cooler than Delhi?

Shimla and Delhi though very close to each other has a great difference of temp. Shimla is located in higher altitude than Delhi. Temp decreases as the altitude increases. Due to normal lapse rate Shimla enjoys cooler climate than Delhi.

Name the rainshadow regions in India.

Eastern side of Sahyadri ranges on Deccan and Thar Desert which is bounded by the Aravalli Ranges to the S-E, the Himalayas to the N-E etc.

What is 'retreating of monsoon'?

During autumn 'Oct - Nov' due to sun's apparent movement when the temp starts to decrease in India and low pressure belt shifted to high pressure belt, the S-W monsoon wind change their direction from land to sea. The main cause of shifting of pressure belts. This season is called 'retreating of monsoon'.

The cyclonic storms occurs during summer in afternoon period. It is associated with thunder storm and lightning.

What is andhi?

Andhi is the local name of loo given in Rajasthan. It is a violent squally short storm occurring in late spring in northwestern India. It heralds the imminent arrival of monsoon.

Explain the influence of Himalayas on Indian climate.

The Great Himalayas lie in the northern part of India. Himalayas provide great influence on the climatic condition of country. This can be discussed in two ways -

During summer, due to severe low pressure, the monsoon winds are attracted to move in the Indian subcontinent which brings huge amt of moisture. The Bay of Bengal branch of southwest monsoon winds get obstructed by eastern Himalayas and cause heavy rainfall in the eastern states like Meghalaya, Assam, northern parts of Bengal etc. The orographic types of

rainfall occurs due to the presence of Himalayas and the avg annual rainfall is more than 100 cm.

During winter, the north-east monsoon wind which is cold and dry in nature blows from central Asia towards Indian subcontinent. Due to the presence of Himalayas, these winds can't enter with full force in Indian mainland. And thus mild winter is experienced in the plains of India.

Explain the influence of monsoon wind on soil, vegetation and agriculture of India.

Monsoon climate is primarily evident in tropical countries like India where more than 75% of annual rainfall is caused by monsoon. Due to south-west monsoon winds most of the parts of country receive huge rainfall except desert region of Rajasthan. Due to heavy rain, the top soil layers are eroded and the soil suffers from lack of nutrients, laterite and mountain soils are mostly found in Meghalaya Plateau and Darjeeling mountainous region is affected most.

Due to heavy rainfall evergreen forest occurs in western slope of western ghats and eastern Indian states. Oppositely dry deciduous forest occurs in the rain shadow region of Deccan Plateau. Thus thorny scrubs land develops here.

The impact of monsoon is mostly felt in agricultural field as our cropping seasons entirely depends on arrival and departure of S-W monsoon winds. The erratic nature of monsoon causes disruption of regular cropping seasons and affect agricultural fields.

Explain the cycle of season

Indian climate is a tropical monsoon climate. The distinct feature of Indian climate is cycle of seasons. There are three main and two transition seasons are observed in India. They are as follows -

1) Summer Season - This season prevails from March to May. The salient features are

1) Very high temp 35° - 40° C is experienced all over the country except hilly region.

2) Low pressure develops on Indian mainland.

3) Local winds like loo and andhi blow in continental part of India.

4) Cyclonic winds like Kathai shaki blow in coastal region like Kolkata.

2) Rainy season - This season prevails from June to September. The salient features are.

1) S-W monsoon wind blows in this season from the Indian Ocean and Bay of Bengal to Indian mainland and gives abundant rainfall all over the country except the desert region.

2) Mainly orographic rainfall received almost all over the country.

3) Western part of Western Ghats, Meghalaya Plateau receives heavy rainfall above 400 cm during rainy season.

4) Dooars mountainous region, plains of India receive moderate rainfall between 200-400 cm.

5) Rainshadow region of Western Ghats deserts in North-West western part of WB receives very low rainfall 50-75 cm.

6) Mawsinram of Cherrapunji is the ~~wettest~~ rainiest place in the world receiving above 1200 cm.

Autumn - This season prevails from Oct - Nov
The salient features are -

- 1) It is a transitional period b/w rainy season and winter season.
- 2) Moderate temp is experienced all over the country
- 3) Clear sky is visible during this season
- 4) Due to sun's southern apparent movement shifting of pressure belts takes place and thus south-west monsoon winds begin to retreat. So it is also called 'retreating of monsoon'.
- 5) Some cyclonic disturbances are created in Bay of Bengal which are called Ashwiner Thal in Kolkata.

Winter - This season experienced from December to Feb.
The salient features are

- 1) North-east monsoon wind which blows from Central Asia though can't enter with full force due to barrier of Himalayas but contributes in lowering the temp of Indian mainland.
- 2) Mild winter is experienced on almost all over mainland of India except mountainous regions with average temp of $10^{\circ} - 15^{\circ}\text{C}$
- 3) Cold winter is experienced on mountainous region due to high altitude where temperature falls below freezing point.
- 4) Dras in Kargil in Kashmir is the coldest place in India.
- 5) Winter rainfall is experienced in Punjab plain and Coromandel coast.