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Class IXth.

SUBJECT GEOGRAPHY

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Ch: CLIMATE (NOTES)

READ THE FOLLOWING PARAGRAPH THOROUGHLY AND TRY TO UNDERSTAND.

The Indian Monsoon

Monsoon winds strongly influence climate of India. The monsoons are experienced in the tropical area roughly between 20° N and 20° S.

Mechanism of Monsoon

The following facts are important to understand the mechanism of the monsoons

The differential heating and cooling of land and water creates low pressure on the landmass of India while the seas around experience comparatively high pressure-

The Inter-Tropical Convergence Zone (ITCZ) in summer season shifts its position over the Ganga plain. This is the equatorial trough normally positioned about 5°N of the equator. It is also known as the 'monsoon trough' during the monsoon season.

The presence of the high-pressure area, East of Madagascar (approximately 20°S over the Indian Ocean). The intensity and position of this high-pressure area affect the Indian monsoon.

The Tibetan plateau gets intensely heated during summer, which results in strong vertical air currents and the formation of low pressure over the plateau at about 9 km above sea level.

The movement of the westerly jet stream to the North of the Himalayas and the presence of the tropical Easterly jet stream over the Indian peninsula during summer.

Apart from the given facts, it has been noticed that changes in the pressure conditions over the Southern oceans also affect the monsoons. Normally, when the tropical Eastern South Pacific Ocean experiences high pressure, the tropical Eastern Indian Ocean experiences low pressure.

But in past a few years, there is a reversal in the pressure conditions and the Eastern Pacific has lower pressure in comparison to the Eastern Indian Ocean. This periodic change in pressure conditions is known as the Southern Oscillation (SO).

EL Nino Southern Oscillations (ENSO)

The difference in pressure over Tahiti (Pacific Ocean, 18°S/149°W) and Darwin in Northern Australia (Indian Ocean, 12°30'S/131°E) is computed to predict the intensity of the monsoons.

If the pressure differences were negative, it would mean below average and late monsoons.

The EL Nino phenomenon is a feature connected with the Southern Oscillation. In this, a warm ocean current flows past the Peruvian Coast, in place of the cold Peruvian current. It occurs at the interval of 2 to 5 years.

The changes in pressure conditions are connected to the EL Nino. Hence, the phenomenon is referred to as ENSO (EL Nino Southern Oscillations).

The Onset and Withdrawal of the Monsoon

The trade winds are steady but the monsoon winds are pulsating in nature. They are affected by different atmospheric conditions encountered by it, on its way over the warm tropical area. Starting from early June in the Southern part of the Indian peninsula, the monsoon lasts between 100 and 120 days, withdrawing by mid-September.

Rainfall increases suddenly and continues for several days at the time of arrival of monsoon. This phenomenon is called as Burst of monsoon. It is different from pre-monsoon showers. Afterwards, it alternates with wet and dry spells.

Onset of Monsoon

Monsoon generally reaches the Southern tip of the peninsula during the first week of June. After striking the Southern tip, it branches into two parts- the Arabian Sea branch and the Bay of Bengal branch; both branches move rapidly.

The Arabian Sea branch advances North along the Western Ghats, reaching Mumbai by about 10th of June and soon covers the Saurashtra-Kuchchh and central most part of the Deccan Plateau also.

The Bay of Bengal branch reaches Assam in the first week of June and gets deflected towards the West by the mountain ranges, thus giving rainfall to the Ganga plains.

Both the branches again merge over the North-Western part of the Ganga plains. Delhi receives rainfall from Bay of Bengal branch by the end of June (tentative date is 29th June) and by the first-week of July, monsoon covers Western Uttar Pradesh, Punjab, Haryana and Eastern Rajasthan.

Withdrawal of Monsoon

Withdrawal or the retreat of the monsoon is a more gradual process. The process begins by early September in North-Western states. By mid-October, it withdraws completely from the Northern half of the peninsula.

The withdrawal from the Southern half of the peninsula is fairly rapid. By early December, the » monsoon has withdrawn from the rest of the country.

Onset and Withdrawal of Monsoon in the Indian Islands

The islands receive the very first monsoon showers from the last week of April to the first week of May. The withdrawal takes place progressively from North to South (in reverse direction) from the first week of December to the first week of January. By this time, the rest of the country is already under the influence of the winter monsoon.

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