

North India more affected by El Nino

written by iasexam.com | 14/08/2023



Context:-With only 10% of droughts or excessive rains being attributed to ENSO changes, the monsoon's influence over Central India, which is known as the monsoon core zone where most agriculture is rainfed, is fading away.

What is La Nina and El Nino?

- El Nino and La Nina are very Important climatic phenomena that occur in the central eastern Pacific.
- In the eastern Pacific between the coast Australia and Peru.

La lina:-

La lina refers to a condition where abnormally cold temperatures are reported along the Peruvian coast due to the upwelling of this cold current. So the appeal of this cold current along the Peruvian coast causes an abnormal drop in temperature towards the coast of Peru and this in turn triggers a strong convention that has an influence on the movement of trade winds in the Indian Ocean and it has an impact on the weather system around the world.

La lina condition is said to be beneficial for the Indian monsoon because it will bring more rainfall.

El Nino:-

Under El nino condition you witness abnormally high temperature along the Peruvian coast, these abnormally high temperature along the Peruvian coast reverses the convection

current and affects the trade winds in the Indian Ocean affects the collection of moisture by these trade winds which are responsible for monsoons in India so El Nino is bad news for India.

Impact on India this year:-

Currently this year we have entered a El Nino season. The last three years were La Nina years which is good news for Indian monsoons and the country received plenty of rainfall.

Starting from this year at least for a few seasons we are expected to go through an El Nino phenomenon which will likely have a diverse impact on India monsoons.

Key Features:-

- An El Nino event, which occurs six times every ten years in the central and eastern Pacific Ocean, causes India's rainfall to decline.
- The converse, or La Nina, is linked to increased rain.
- However, a study published this week suggests that the El Nino Southern Oscillation (ENSO), which is a cyclical phenomenon, has a different impact on large portions of India.
- Only 10% of droughts or excessive rains in Central India, the monsoon core zone where most agriculture is rainfed, are linked to ENSO oscillations.
- On the other hand, the ENSO cycle's connection to North India was growing, since it was responsible for 70% of variations in rainfall.
- In southern India, the relationship has remained largely stable.
- Two main elements influence monsoon rainfall, causing up 80% of India's yearly rainfall
 - The external factor is ENSO's impact, which affects the trade winds' capacity to carry warm, humid air into India during the monsoon season.
 - The "monsoon trough," which is another internal low pressure system, extends from over Pakistan to the Bay of Bengal.
 - This swings between north and south India via the monsoon, bringing rain wherever it is active and is nourished on moisture carried in from the Bay of Bengal (and, to some extent, the Arabian Sea) in the form of low level cyclones known as "depressions."
- **Rise in temperature:-**
- Climate change significantly increased ocean temperature in the Indian Ocean in recent decades.
 - This was affecting the number of depressions that formed over the season, which in turn affected the amount of rain that fell over Central India.

Conclusion:-

As a result, El Nino, which is known to disrupt the trade winds and the monsoon circulation over India, will now have a greater impact on North India.

