



**KAMARAJ IAS ACADEMY**  
Only IAS Academy by Grandson of "Perunthalsivar Kamarajar"

# El Nino's impact on India

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## Why is in news?

It's clear that El Niño is now emerging as a major economic as well as political risk in India, ahead of national elections scheduled in April-May 2024.

The effects of the abnormal warming of the central and eastern equatorial Pacific Ocean waters towards Ecuador and Peru – generally known to suppress rain in India – are already beginning to be felt.

## About El Nino:

El Nino was first recognized by Peruvian fishermen off the coast of Peru as the **appearance of unusually warm water**.

The Spanish immigrants called it El Nino, meaning “**the little boy**” in Spanish.

The El Nino is the **warmer-than-normal phase of the El Nino Southern Oscillation (ENSO)** phenomenon, during which there are **generally warmer temperatures and less rainfall than normal** in many regions of the world, including India.

During an El Nino event, the Sea Surface Temperatures (SST) in the equatorial Pacific Ocean off the northern coast of South America became at least 0.5 degrees Celsius warmer than the long-term average.

In the case of a strong El Nino event as occurred in 2015-2016, anomalies can reach as high as 3°C, which is a record.

The **El Nino event is not a regular cycle** they are **not predictable and occur irregularly** at two- to seven-year intervals.

Climatologists determined that El Nino occurs simultaneously with the Southern Oscillation. The Southern Oscillation is a change in air pressure over the tropical Pacific Ocean.

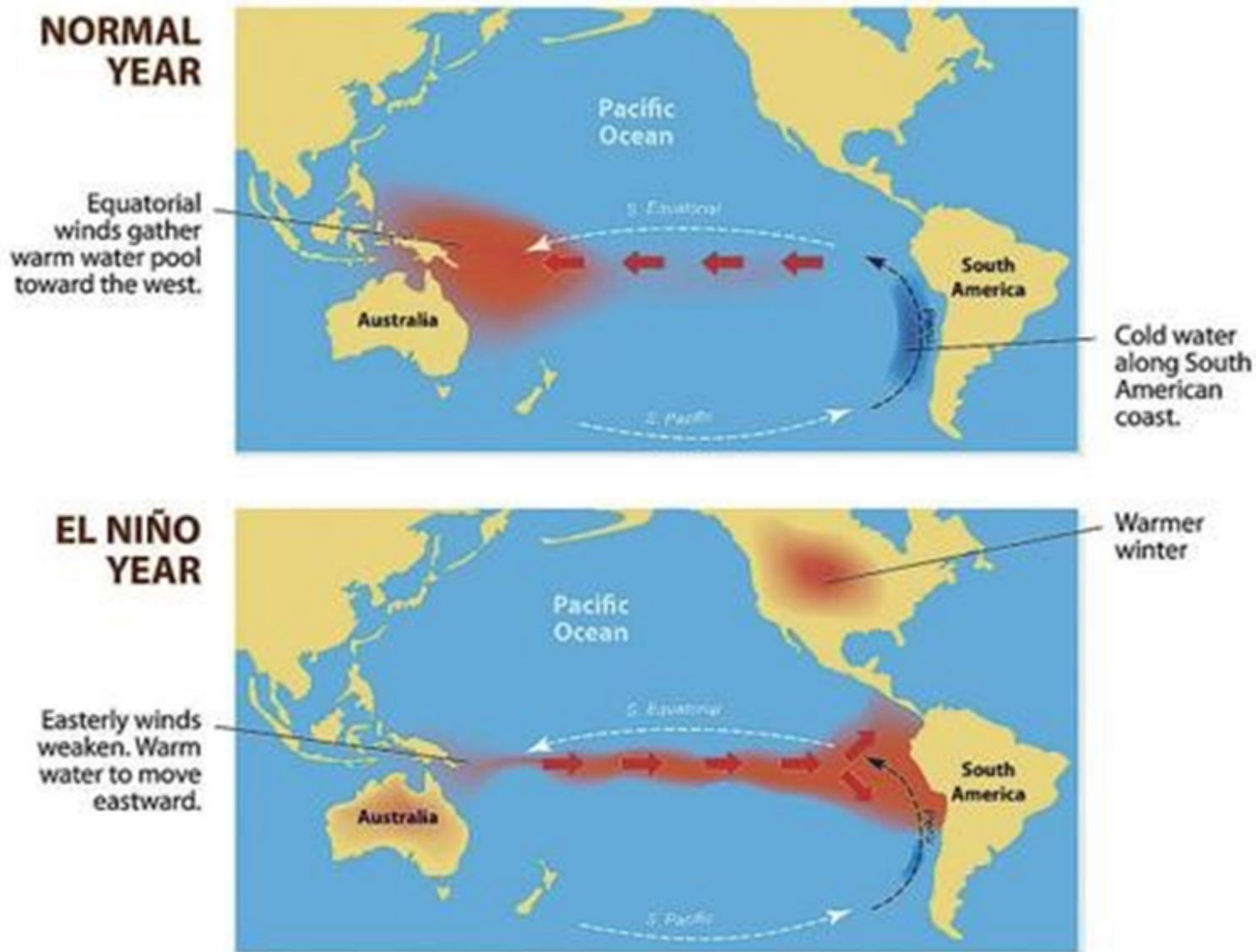
In July 2023, the **Oceanic Niño Index (ONI)** – which measures the average sea surface temperature deviation from the normal in the east-central equatorial Pacific region – touched 1 degree Celsius. **This was twice the El Niño threshold of 0.5 degrees.**

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# THE EL NIÑO PHENOMENON



## Impacts of El Nino on India:

### **Climate extremes:**

El Niño can contribute to other climate extremes in India, such as heatwaves and intense cyclones. These events can cause substantial damage to infrastructure, property, and human lives

### **Weak Monsoon for India:**

Monsoon is significant for the overall economy because it accounts for 70 percent of annual rainfall in a country where about half of the farmlands depend on annual showers for irrigation.

Agriculture employs more than half of the workforce in India and makes up about 18 percent of India's economic output.

### **Agrarian economy:**

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**El Nino directly impacts India's agrarian economy** as it tends to lower the production of summer crops such as rice, sugarcane, cotton, and oilseeds.

In some parts of India, the failure of the monsoons result in water shortages, **resulting in below-average crop yields**.

**A lot of farmers commit suicide** because they are not able to repay the loan they had taken for growing the crop.

India imports agricultural products from many countries. If these source countries experience El- Nino related drought, prices of agricultural produce may go up.

Prices of crops such as sugarcane, rice, coffee, wheat, etc, that are grown in large quantities in South Asia and South East Asia are expected to go up.

### **Impact on Rural Income:**

Any disruption in domestic agricultural production could result in lower income for rural households as about 60 percent of the rural population is still employed in the farm sector.

### **Inflation:**

Shortages in food supply then result in spike in food prices all across the country pushing inflation up.

High food inflation pushes the RBI and the government to adopt a more cautious approach to monetary and fiscal policy respectively. A **tighter monetary policy** may affect the economic growth rate of the nation.

### **Power Generation:**

Weak monsoons also result in lesser power generation from hydro power dams thus leading to lesser electricity for industries.

### **Drought:**

Ten of last 15 droughts were led by El Nino events. If the drought is severe, it would dry up major sources of fresh water leading to a water crisis like situation.

### **Forest fires:**

During El Niño years, drier conditions may increase the likelihood of forest fires, especially in regions prone to such disasters.

Forest fires can cause extensive damage to ecosystems and human settlements, leading to loss of biodiversity and property

### **Health impact:**

El Niño can also lead to public health issues in India. For instance, drier conditions and heat waves can increase the risk of heat-related illnesses.

Additionally, changes in weather patterns can also lead to the spread of vector-borne diseases like malaria and dengue

### **Way forward:**

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**Promoting climate resilient infrastructure:** Infrastructure development should be constructed to withstand extreme weather events like those brought on by El Nino

**Strengthening international collaboration:** Countries should strengthen international cooperation to share knowledge, technology, and resources to mitigate the impacts of El Nino. Climate change has no borders, and global collaboration is crucial

**Climate change mitigation:** Efforts should be heightened to reduce greenhouse gas emissions, as global warming can exacerbate the effects of El Nino. This includes promoting clean energy, reducing deforestation, and implementing sustainable practices in industries

**Adapting agricultural practices:** In agriculture-based economies, there should be widespread education on the effects of El Nino on weather patterns to help farmers adapt their practices. This can include crop diversification, implementing irrigation facilities, and promoting weather-based crop insurance

**Building disaster management capacity:** Countries should work on building their capacity to manage and respond to disasters caused by El Nino. This includes establishing effective disaster response strategies, conducting regular drills, and ensuring adequate resources are allocated to disaster management

**Conserving marine ecosystems:** El Nino severely impacts marine ecosystems, it is crucial to conserve and protect these ecosystems as much as possible. This includes preventing overfishing, reducing pollution, and protecting marine habitats like coral reefs.