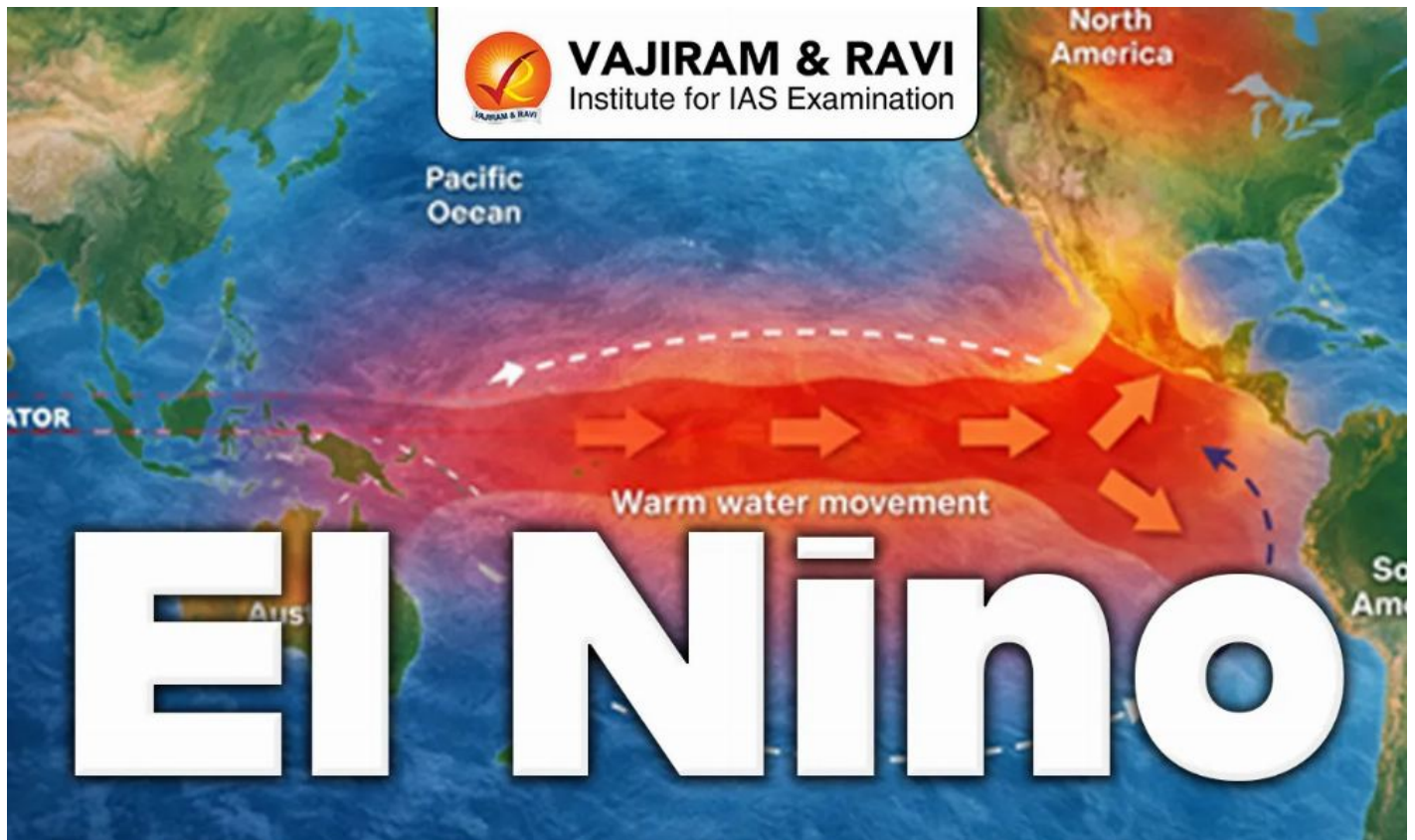


El Nino, Meaning, Effect in India and World, Weather Conditions

August 3, 2026 • vajiramandravi.com



Why in News?

The **Ministry of Agriculture and Farmers' Welfare** recently reviewed the availability of **fertilizers, seeds, monsoon progress, and El Niño conditions** during its weekly review meeting. The Union Agriculture Minister **Shivraj Singh Chouhan** stated that the **Southwest Monsoon has covered the entire country**, creating favourable conditions for **Kharif crop sowing**, and directed officials to **continuously monitor agricultural activities in sensitive districts** to ensure smooth progress of the cropping season.

What is El Nino?

El Nino is the warm phase of the ENSO which is one of the world's most important natural climate patterns. It develops when sea surface temperatures in the central and eastern equatorial Pacific Ocean become unusually warm, changing global wind systems and rainfall patterns. It normally occurs every two to seven years and lasting

about nine to twelve months. Its effects depend on intensity, duration and interaction with other climate systems such as the **Indian Ocean Dipole**.

El Nino 2026

El Nino Weather conditions strengthened during 2026, with global agencies warning of widespread weather disruptions, higher temperatures and changing rainfall patterns.

- WMO Forecast: The **World Meteorological Organization (WMO)** estimated an 80% probability of El Niño during June-August 2026, with the likelihood rising to 90% or more of continuing until at least November 2026.
- Ocean Monitoring: Observations during late April to mid-May showed sea surface temperatures in the central-eastern equatorial Pacific approaching El Nino thresholds. Subsurface waters exceeded 6°C above average, providing a large heat reserve that continued warming the ocean surface.
- Atmospheric Signals: The Southern Oscillation Index (SOI) also shifted towards El Niño conditions, confirming weakening atmospheric circulation. Together with warmer ocean waters, these indicators showed that El Niño development was well underway during 2026.
- NOAA Advisory: On 11 June 2026, the National Oceanic and Atmospheric Administration (NOAA) officially issued an El Nino Advisory. It forecast a 63% probability of sea surface temperatures crossing 2°C above average, indicating the possibility of a very strong El Niño (Super El Nino).

El Nino Effects on India and World

El Nino influences rainfall, temperatures and weather systems worldwide, affecting agriculture, food security, public health, water resources and economic activity.

Effect on India

- El Niño weakens the Southwest **Monsoon** by shifting the Walker Circulation eastward. During late June 2026, India's cumulative monsoon rainfall remained around 42% below normal, increasing drought risk, reducing reservoir levels and affecting agricultural production.
- Reduced rainfall and prolonged heat increase temperatures above 45°C across many parts of India. Lower **hydropower** generation, combined with rising electricity demand exceeding 240 GW, places additional pressure on thermal power generation and electricity prices.
- Nearly 45% of India's workforce depends on agriculture. Weak monsoon conditions reduce crop yields, raise food **inflation**, lower rural incomes, affect FMCG and automobile demand, and increase government spending on relief measures and food imports.

Global Impact

- Rainfall Changes: El Niño generally brings heavier rainfall to southern South America, southern United States, the Horn of Africa and Central Asia, while causing drier conditions across Australia, Indonesia, Central America, northern South America, the Caribbean and parts of southern Asia.

- **Europe Heatwaves 2026:** During June 2026, Europe experienced record-breaking heat, with temperatures reaching 43.8°C in France, 41.7°C in Germany, and 40.7°C in Hungary, causing severe stress on agriculture, infrastructure and public health.
- **Human Health Risks:** Prolonged El Niño-driven heatwaves increase heat stress, dehydration and heat-related illnesses. **WHO** reported more than 1,300 excess deaths in Europe after 21 June 2026, while over 150 million people were affected by extreme heat conditions.
- **Agriculture and Food Security:** Rising temperatures and changing rainfall reduce crop productivity across several regions. The 2026-27 El Niño is expected to affect **agriculture in India**, China, Australia, Brazil and Sub-Saharan Africa, increasing food security concerns and disrupting global agricultural markets.
- **Wildfires and Drought:** El Niño raises drought risk in Australia, South-East Asia, southern Africa and Central America, while prolonged dry conditions increase the probability of **forest fires**, water shortages and ecosystem degradation across vulnerable regions.
- **Flood and Disaster Risk:** While some regions become drier, East Africa, parts of Central and East Asia, and large areas of North and South America are expected to receive above-normal rainfall, increasing the risk of **floods, landslides, soil erosion** and waterlogging.
- **Urban Heat Stress:** El Niño intensifies the urban heat island effect, where cities remain much hotter than surrounding areas. Warm nights prevent the human body from recovering, increasing health risks, especially for elderly people, children, outdoor workers and those with chronic illnesses.
- **Water Resource Pressure:** Reduced rainfall and prolonged drought lower reservoir levels and groundwater recharge in many regions, increasing competition for drinking water, irrigation and industrial use while raising the likelihood of water scarcity.
- **Marine Ecosystems:** Warmer Pacific waters alter fish migration patterns, push cold-water species into deeper waters and encourage harmful **algal blooms** in some coastal regions, affecting fisheries, marine biodiversity and coastal livelihoods.
- **Compound Climate Disasters:** WMO highlighted that El Niño can trigger multiple hazards simultaneously, including **heatwaves**, droughts, floods, **storms** and wildfires, creating cascading impacts on food systems, water availability, public health and national economies.

El Nino Formation

El Nino develops when the normal ocean-atmosphere system of the Pacific Ocean gets disturbed due to changes in wind patterns and heat distribution, leading to large-scale climatic impacts across the globe.

- **Weakening of Trade Winds:** The easterly **trade winds**, which normally push warm water toward the western Pacific, lose strength or may even reverse direction.
- **Eastward Movement of Warm Water:** Warm surface water accumulated near Asia and Australia starts flowing back toward the central and eastern **Pacific Ocean**.
- **Reduction in Upwelling:** The usual rise of cold, nutrient-rich water along the western coast of South America decreases significantly, affecting ocean productivity.
- **Increase in Sea Surface Temperature (SST):** The central and eastern Pacific Ocean experience abnormal warming, which is the core feature of El Nino.

- **Shift in Convection Zone:** The region of rising warm air and cloud formation moves eastward, changing rainfall patterns across the Pacific.
- **Disturbance in Atmospheric Circulation:** The Walker Circulation weakens or shifts, disrupting the balance between ocean and atmosphere.
- **Change in Pressure Systems:** The pressure difference between the eastern and western Pacific reduces, influencing global wind systems.
- **Alteration of Jet Streams:** The Pacific **jet stream** shifts its path, affecting weather patterns in different parts of the world.

Also Read: [Primary Winds](#)

El Nino and Indian Monsoon

El Nino has a strong and often negative impact on the Indian monsoon, which is crucial for agriculture, water supply, and the overall economy. When El Nino develops, the warming of the Pacific Ocean weakens the monsoon circulation over India, leading to reduced rainfall and increased chances of drought.

- **Weak Monsoon Winds:** El Nino reduces the strength of southwest monsoon winds, leading to less moisture transport toward India.
- **Deficient Rainfall:** Many regions experience below-normal rainfall, especially during strong El Nino years.
- **Increased Drought Risk:** Lower rainfall increases the chances of drought, particularly in central and northwestern India.
- **Rise in Temperature:** Reduced cloud cover and rainfall lead to higher temperatures and heatwave conditions.
- **Agricultural Impact:** Crop yields decline due to insufficient water, affecting food production and farmer income.
- **Water Scarcity:** Reservoir levels, groundwater, and **rivers** receive less recharge, causing water shortages.
- **Regional Variability:** While most areas face deficit rainfall, some regions may still receive normal or even excess rain due to local factors.

Impacts of El Nino

El Nino significantly alters global weather systems by redistributing heat and moisture across the Pacific Ocean. This leads to widespread climatic disturbances such as floods, droughts, and temperature extremes in different parts of the world.

eastern Pacific Ocean.

- **Australia and Indonesia:** Face severe drought conditions and increased risk of forest fires due to reduced rainfall.
- **North America:** Southern regions (like California) may receive heavy rainfall, while northern areas experience warmer winters.
- **Asia:** Countries like India may face weak monsoon and drought-like conditions, while Southeast Asia also sees reduced rainfall.

- **Africa:** Eastern Africa often receives above-normal rainfall causing floods, while Southern Africa may experience drought.
- **Global Temperature Rise:** El Nino years are generally warmer, contributing to short-term **global warming** spikes.
- **Marine Ecosystem Impact:** Reduced upwelling affects fish populations, especially along the South American coast.
- **Coral Bleaching:** Warmer ocean temperatures lead to widespread coral bleaching events in tropical oceans.
- **Cyclone/Hurricane Patterns:** Decreases Atlantic hurricanes but may increase cyclone activity in the Pacific.
- **Agriculture Impact:** Crop yields decline in drought-affected regions, while floods damage crops elsewhere.
- **Water Resources:** Causes water scarcity in some regions and excess water in others, disrupting supply systems.
- **Economic Losses:** Leads to global economic impacts due to damage to agriculture, fisheries, and infrastructure.

El Nino Management

Early monitoring, climate planning and resilient infrastructure help governments reduce the economic and humanitarian impacts of El Nino.

- **Early Warning Systems:** WMO issues global El Niño/ **La Niña** Updates, seasonal climate forecasts and regional outlooks to support governments, humanitarian agencies and sectors such as agriculture, water management, health and energy in timely decision-making.
- **Scientific Monitoring:** Continuous monitoring through ONI, RONI, SOI, satellite observations, ocean buoys and atmospheric measurements enables earlier detection of changing Pacific Ocean conditions and improves forecast accuracy.
- **Climate-Resilient Agriculture:** Promoting millets, pulses and oilseeds, expanding drip irrigation, using AI-based weather advisories and developing drought-tolerant crop varieties improve agricultural resilience against weak monsoon conditions.
- **Water and Urban Management:** Rainwater harvesting, groundwater recharge, restoration of wetlands, canal-top solar projects, efficient reservoir management and urban “cool roof” programmes help reduce water shortages and heat stress.
- **International Coordination:** Organizations including WMO, NOAA, IMD, IITM, ECMWF, IRI and regional climate forums regularly share forecasts, technical expertise and humanitarian guidance for coordinated preparedness across countries.

Also Check: **Difference Between El Nino and La Nina**

Source: <https://vajiramandravi.com/current-affairs/el-nino/>

© Vajiram & Ravi. For personal use only.