



## Warmer Winters Ahead as El Niño Conditions Develop

According to the India Meteorological Department (IMD), India is likely to experience a warmer winter for a second consecutive year due to the influence of a brewing El Niño over the Pacific Ocean.

- It is likely that a **weak and short duration El Niño** will develop towards February 2019, i.e by the end of winters.
- This was stated in **IMD's 'Seasonal Outlook for Temperatures'** which it has been issuing since 2016, for both hot and cold weather seasons. These forecasts are based on predictions from the Monsoon Mission Coupled Forecasting System (MMCFS).

### India Meteorological Department (IMD)

- IMD was established in **1875**.
- It is an agency of the **Ministry of Earth Sciences of the Government of India**.
- It is the principal agency responsible for **meteorological observations, weather forecasting and seismology**.

### El Niño

- El Niño refers to the **unusual warming of the central and east-central equatorial Pacific Ocean** which affects global weather. The warmer waters of the Pacific Ocean cause the winds in various regions to reverse, like the trade winds that come towards India.
- This change of wind direction leads to warmer winters and summers and a decrease in rainfall during the monsoon. Most of the time, it also leads to drought.
- There is also an **opposite of an El Niño, called La Niña means The Little Girl in Spanish**. This refers to times when waters of the tropical eastern Pacific are colder than normal and trade winds blow more strongly than usual.
- **Collectively, El Niño and La Niña are parts of an oscillation in the ocean-atmosphere system called the El Niño-Southern Oscillation, or ENSO cycle.**

### What Happens Normally?

- Normally, the warmest part of the Pacific Ocean is the region near the equator. Due to the spinning of the earth, the prevailing winds flow from east to west. This **pushes the warm waters westwards, say towards Indonesia**.
  - **During an El Niño event**, the prevailing winds across the Pacific weaken, and sometimes they can even reverse and blow the other way. This allows some of the **warmer waters to move eastwards, away from Indonesia and towards South America**.
- In the east, around the coast of South America, **cool waters normally well up**. These waters are **rich in nutrients and fish, and provide plenty of food for the Peruvian Fisherman**.
  - It is interesting to note that the **El Niño was discovered by Peruvian Fisherman** when they noticed that every three to seven years, in the months of December and January, there would be **virtually no fish in the seas**, because of **unusual presence of warm waters**. As it was noticed around **Christmas time, they named this phenomenon El**

## **Nino (Spanish for 'the baby boy').**

### **Effects of El Nino**

- El Nino affects global weather. It **favours eastern Pacific hurricanes and tropical storms.** Recorded unusual rainfall in Peru, Chile and Ecuador are linked to the climate pattern.
- El Nino reduces upwelling of cold water, **decreasing the uplift of nutrients from the bottom of the ocean.** This affects marine life and sea birds. The fishing industry is also affected.
- **Drought** caused by El Nino can be widespread, **affecting southern Africa, India, Southeast Asia, Australia, and the Pacific Islands.** Countries dependent on agriculture are affected.
- WHO report on the health consequences of El Nino forecasts a **rise in vector-borne diseases,** including those spread by mosquitoes, in Central and South America. Cycles of malaria in India are also linked to El Nino.
- Over India, the El Nino has usually been the harbinger of drought and the La Nina of rain.

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