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 Nino over the Pacific Ocean.

- It is likely that a **weak and short duration El Nino** 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 Nino

- El Nino 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 Nino 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 Nino 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.