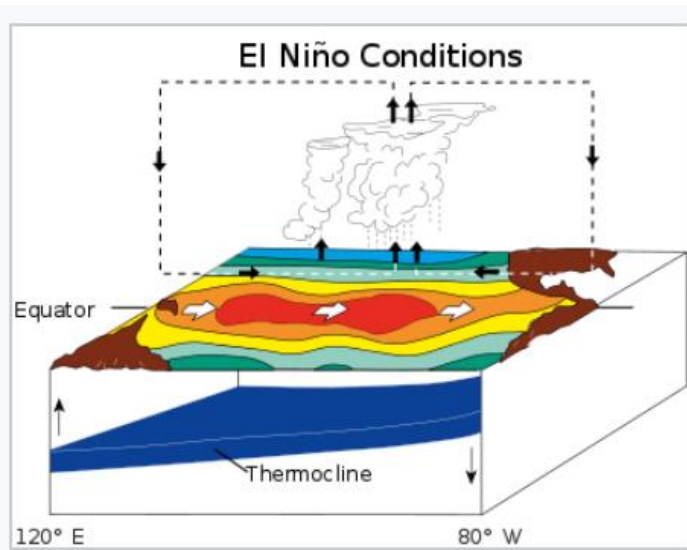
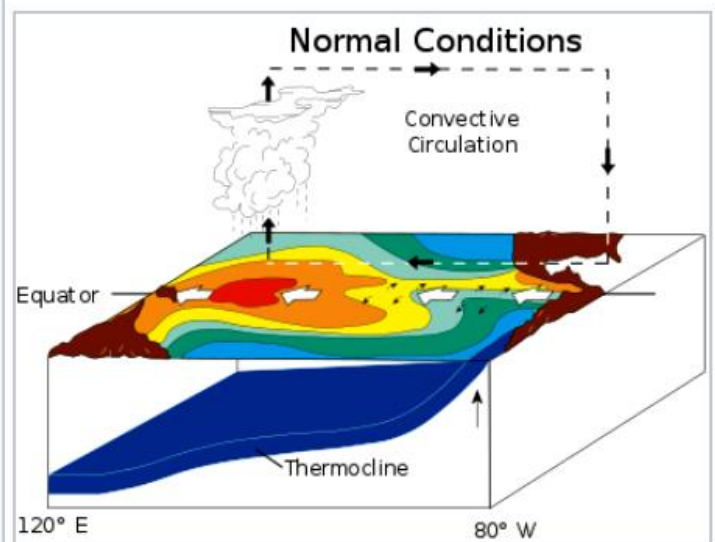


Weather prediction: 2020 will be the warmest year ever

According to a study by the Indian Institute of Tropical Meteorology (IITM), Ministry of Earth Sciences, Government of India, the country is going to have a heat wave and expansion of summer months in the year 2020. With the use of newly developed weather systems such as 'El Nino Modoki,' it has been speculated that the coastal region of South India where there was not much heat effect is going to be affected.



El Niño conditions: warm water and atmospheric convection move eastwards. In strong El Niños deeper thermocline off S. America means upwelled water is warm and nutrient poor.



Normal Pacific pattern: Warm pool in the west drives deep atmospheric convection. Local winds cause nutrient-rich cold water to upwell along the South American coast.
(NOAA / PMEL / TAO)

Image Credit: Wikipedia

National Aeronautics and Space Administration (NASA) also estimates 2020 to be the warmest year by 1.1 °C higher than ever.

El Niño is the warm phase of the El Niño–Southern Oscillation (ENSO) and is associated with a band of warm ocean water that develops in the central and east-central equatorial Pacific (between approximately the International Date Line and 120°W), including the area off the Pacific coast of South America. The ENSO is the cycle of warm and cold sea surface temperature (SST) of the tropical central and eastern Pacific Ocean. El Niño is accompanied by high air pressure in the western Pacific and low air pressure in the eastern Pacific. El Niño phases are known to occur close to four years, however, records demonstrate that the cycles have lasted between two and seven years. During the development of El Niño, rainfall develops between September–November. The cool phase of ENSO is La Niña, with SSTs in the eastern Pacific below average, and air pressure high in the eastern Pacific and low in the western Pacific. The ENSO cycle, including both El Niño and La Niña, causes global changes in temperature and rainfall.

Developing countries that depend on their own agriculture and fishing, particularly those bordering the Pacific Ocean, are usually most affected. In American Spanish, the capitalized term El Niño means "the boy". In this phase of the Oscillation, the pool of warm water in the Pacific near South America is often at its warmest about Christmas.[4] The original phase, El Niño de Navidad, arose centuries ago, when Peruvian fishermen named the weather phenomenon after the newborn Christ. La Niña, chosen as the "opposite" of El Niño, is American Spanish for "the girl".

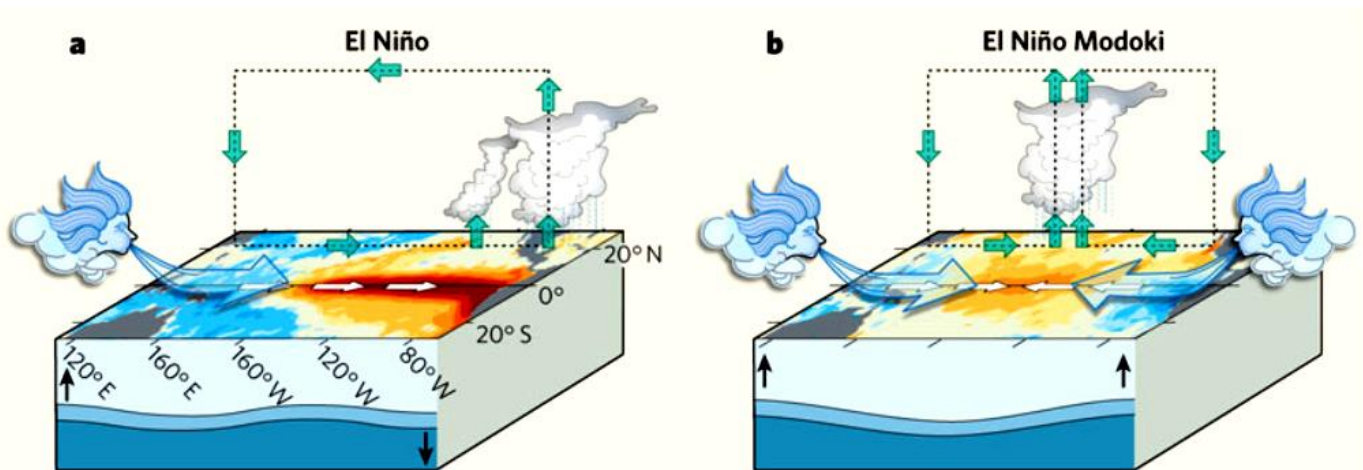


Image Credit:

<https://earthscience.stackexchange.com/questions/2822/what-is-el-ni%C3%B1o-modoki>

An El Niño event is produced when the easterly winds weaken; sometimes, in the west, westerlies prevail. This condition is categorized by warmer than normal sea surface temperatures (SSTs) in the east of the ocean, and is associated with alterations in the thermocline and in the atmospheric circulation that make the east wetter and the west drier.

An El Niño Modoki event is an anomalous condition of a distinctly different kind. The warmest SSTs occur in the central Pacific, flanked by colder waters to the east and west, and are associated with distinct patterns of atmospheric convection. c, d, The opposite (La Niña) phases of the El Niño and El Niño Modoki respectively. Yeh et al. argue that the increasing frequency of the Modoki condition is due to anthropogenic warming, and that these events in the central Pacific will occur more frequently if global warming increases.

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