In Brief

El Niño, La Niña and Southwest Monsoon in India

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The usual forecast by the India Meteorological Department about more than normal rainfall during monsoon season for this year in 2020 considering ENSO Neutral (El Niño Southern Oscillation) as one of the major factors for such huge rainfall is a great and pleasant surprise to some of my friends, belonged to the subject Geography. They are surprised at the particular event of El Niño controlling the Indian monsoon rainfall which is a natural phenomenon in the Pacific Ocean. Apparently mild El Niño phenomenon influence only the equatorial south Pacific Ocean while strong to very strong El Niño events can influence worldwide weather. It is still difficult to predict exactly how a particular El Niño will affect any region's weather. Further, the scientists add - the Atlantic Ocean and the Indian Ocean both experience events similar to that of the El Niño of the Pacific Ocean, but these events are not nearly as strong as the equatorial Pacific Ocean that can do the same influence on worldwide weather phenomena. Any way, El Niño is a warm-weather current, occurred around Christmas and that's why the phenomenon is called El Niño, Spanish word, means 'The Little Boy', in reference to little Jesus. At first, these events of El Niño is seen by the inhabitants of Peru who know that every a few years gap, the warm-water current of the east Pacific Ocean used to reduce the abundance occurrence of anchovy fishes leading to dramatic decline of sea birds, seals and other marine lives that depend on anchovies as their source of food. The El Niño affects traditional fishing and fisheries not only in Peru, but in other countries of South America including Ecuador. In El Niño affected years, warmed, low nutrient-rich water spreads along the coast, and the catch is severely affected. Even for the people of Australia and south eastern Africa, the El Niño even causes severe droughts resulting in devastating forest fires. Not only that, the residents of Peru, Ecuador and California face torrential rain, storms and deadly mudslides due to the events of El Niño. The El Niño effects in Indonesia included reduced rainfall in southern Sumatra and Java reduces the third harvest in some areas and intensified seasonal fires. These fires burn uncontrolled throughout September and October, blanketing Indonesia in dangerous levels of smoke for several weeks and affect palm oil and rubber plantations. On contrary, El Niño has a counter part - La Niña, a cold water phenomenon. La Niña, a Spanish term, means 'The Little Girl' is associated with a cooling of the eastern tropical Pacific Ocean. La Niña is sometimes called as El Viejo, means anti-El Niño. El Niño and La Niña phenomena appear about three to seven years, varying up to ten years alternately. Of late, the combined oceanic and atmospheric effects are called El Niño Southern Oscillation (ENSO) having alternate warm and cold phases. The warm phase persists in very strong El Niño phenomenon, the trade winds blow in reverse direction as the high pressure along the coast of South America weakens and cause to diminish southwest trade wind. On contrary, in cold phases of ENSO, with the presence of stronger trade winds, causes cooler than normal water that occurs along the coastal stretch of equatorial Pacific Ocean parallel to South American coastline. El Niño phenomenon occurred in 1982-83 and 1997-98 in the twentieth century and 2015-16 in the 21st century, though the 1982-83 El Niño is the strongest ever recorded.

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At present, Tropical Ocean-Global Atmosphere Programme develop some models and those models make possibilities in prediction of El Niño phenomenon one year in advance, though the causes for the origin and occurrence of El Niño are still not well-known to the scientific communities.

El Niño and La Niña, both appear on alternate years causing reverse events of warming and cooling, sometimes drought and flooding, though La Niña favour the southwest monsoon rain in India. La Niña phenomenon is associated with sea surface temperatures and weather phenomena opposite to those of El Niño. Indian Ocean monsoon, for instance, are typically drier than usual in El Niño years but wetter than usual in La Niña year - explain Trujillo and Thurman, the world-class oceanographers. During forecast of southwest monsoon, these phenomena are also mentioned and supported by the experts of India Meteorological Department that states that the ENSO Neutral conditions are currently prevailing over the equatorial Pacific Ocean. The IMD officials add that the global models indicating cool ENSO conditions are likely to prevail during the monsoon season with some possibility of development of weak La Niña conditions in the later part of the monsoon season. Overall, ENSO Neutral and strong La Niña conditions have major influences and impacts on the expected above normal rainfall during southwest monsoon season of 2020 in and around the entire India.

History of Technology

The Needle's Eye of World Trade: 150 years of Suez Canal

After a very troublesome beginning of the great human project the Suez Canal was opened 150 years before. Ten thousand people gathered on the 16th and 17th November 1869 in the Egyptian city Port Said. At the top of the list of guests along with the Egyptian Viceroy Ismail Pascha before all there were representatives of big European governments King Franz Joseph of Austria-Hungary, the French queen Ēugenie, Crown prince Freedrich of Prussia. They all came in order to celebrate the opening of the millennium old dream: the completion of Suez Canal, the waterway between the red sea and Mediterranean sea, the artificial man made connection between the two seas. The ship carrying the noble guests moved more or less in a convoy on the water surface of 58 meter wide and 8 meter deep canal.

The construction work continued for ten years. Infinite troubles had been overcome. Ten thousand workers had been active in the middle of the coast without infrastructure and machines. The strategy was relatively simple. On the far reaching surface of the isthmus between the Mediterranean and gulf of Suez in the red sea there were several big and small natural water bodies. Between these water bodies to begin with a small channel had to be dug with great difficulty with dredging ship. This great human project was designed in France.