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No SF-2022-01-ENSO-IOD

Current condition and forecasts of ENSO and IOD for JFM 2022

Issued on 1st January 2022 by Seasonal forecasting Division of the Department of Meteorology, Sri Lanka.

1. El Nino and La Nina update

The tropical Pacific atmosphere is consist with La Niña conditions. A majority of the statistical and dynamical models predict La Niña is favored to continue through winter 2021-22 and transition to ENSO neutral during spring 2022. Further, La Niña is likely to continue through the Northern Hemisphere winter 2021-22 with 95% chance and transition to neutral during April-June 2022 with 60% . (source-CPC-USA) (Fig.3a).

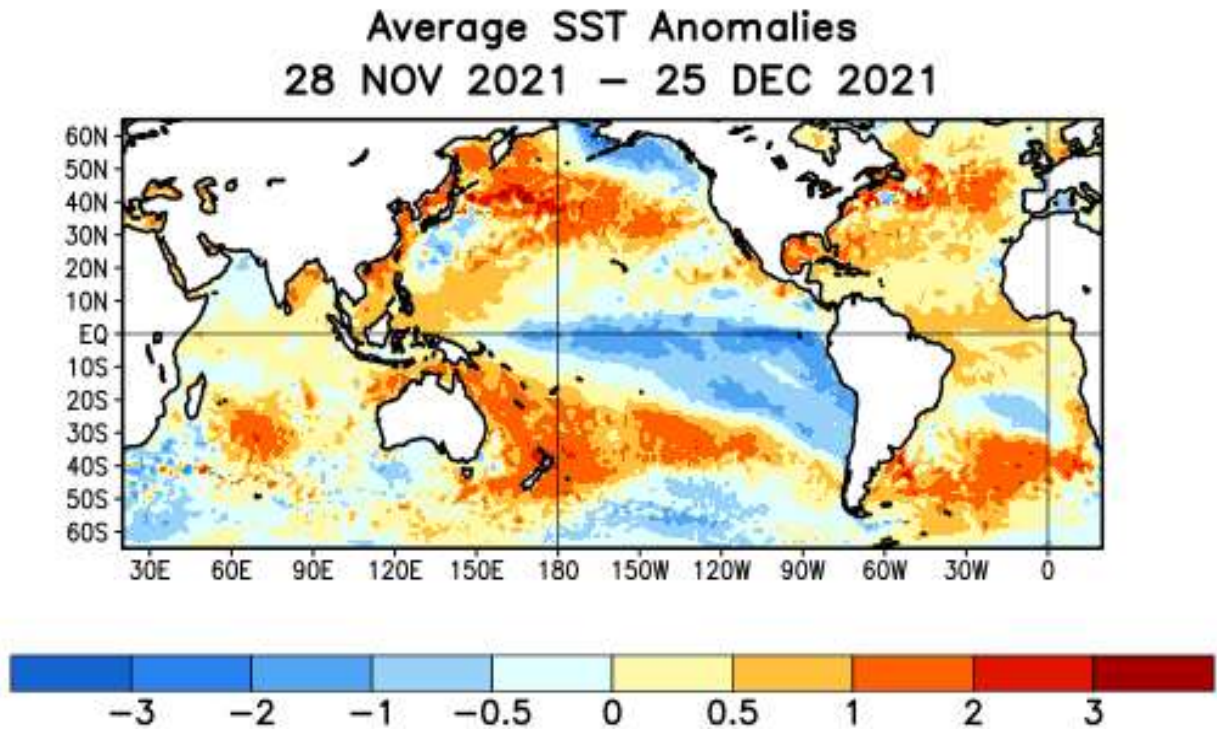


Fig 1: Observed Average sea surface temperature (SST) anomalies (°C)

Weekly SST Anomalies (DEG C)

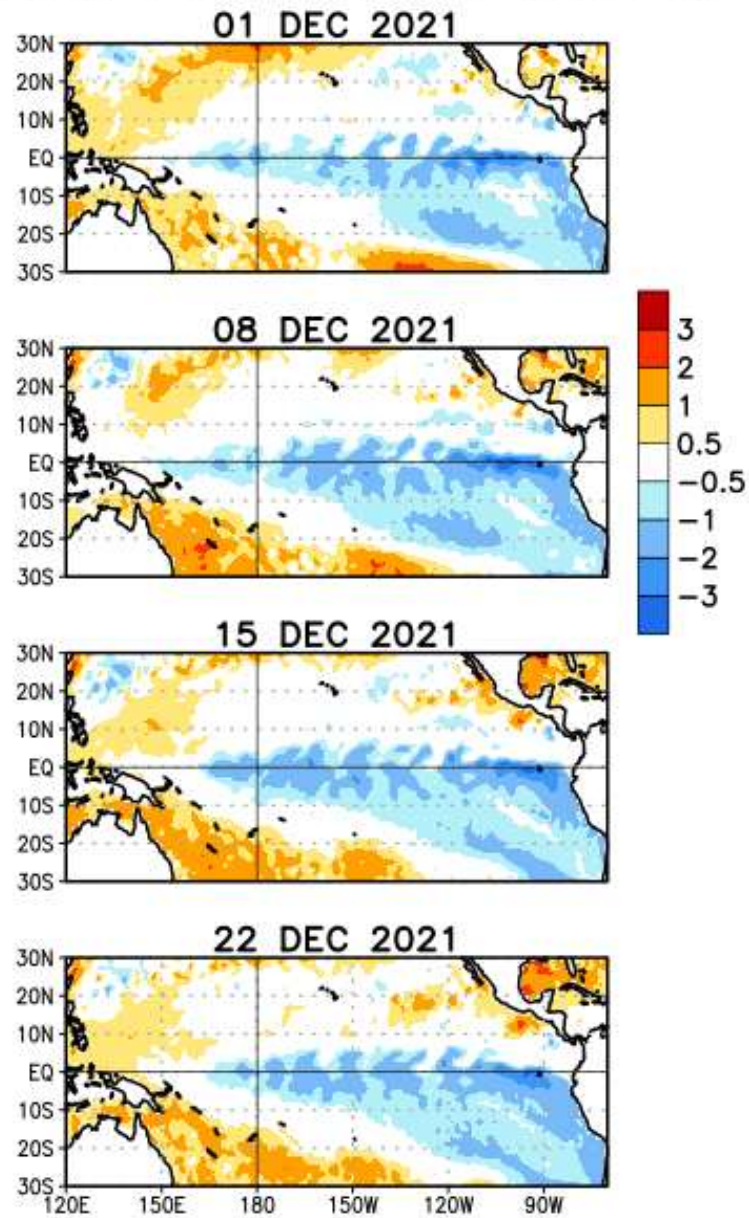


Fig 2: Weekly Observed Average sea surface temperature (SST) anomalies ($^{\circ}\text{C}$)

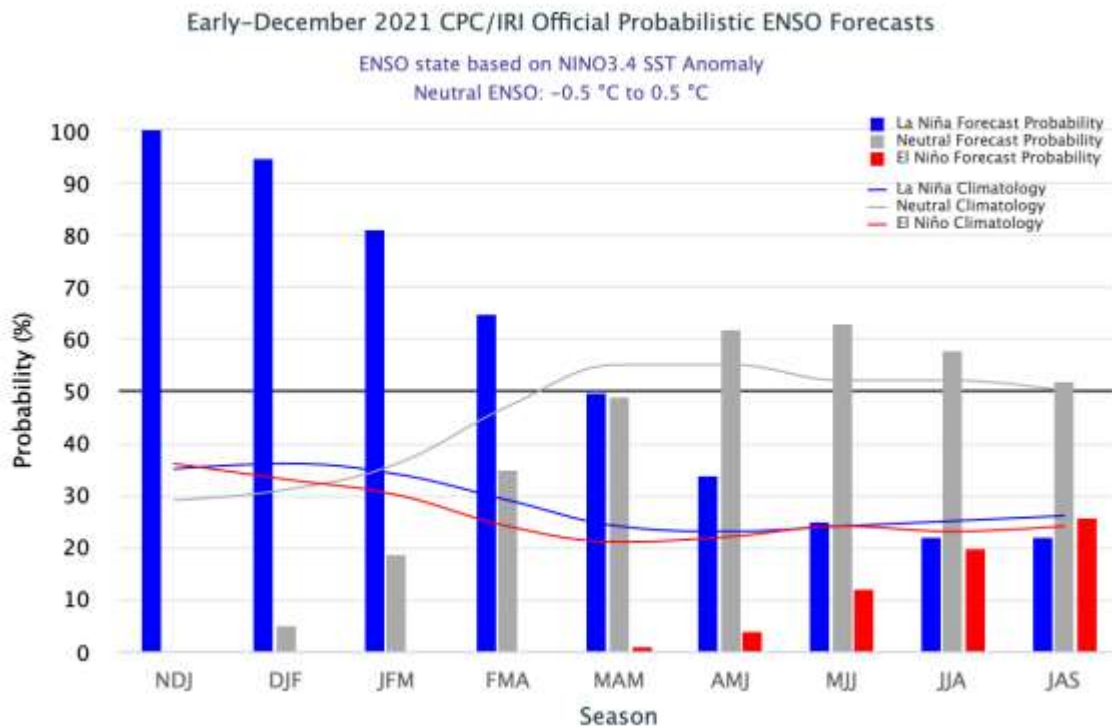


Fig 3a: ENSO forecast from Climate Prediction Center (CPC)/ IRI Forecast

1.1.1 Impacts of La-Nina on monthly rainfall anomaly during December, January and February

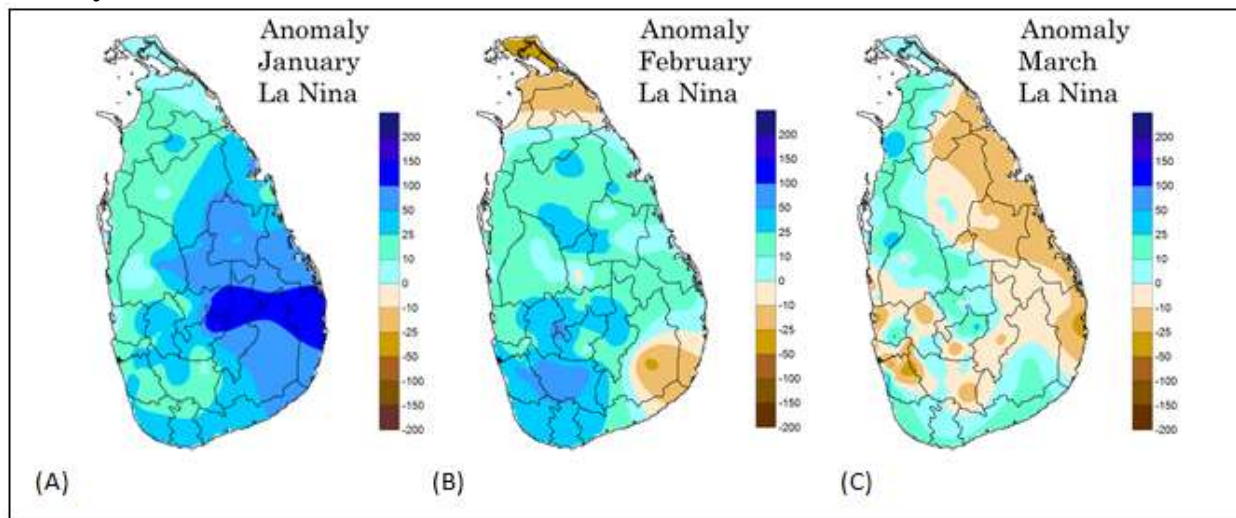


Fig 3b: Monthly Rainfall Anomaly maps of the months of December (A), January (B) and February (C) during La-Nina years (Hapuarachchi et al 2016)

Previous studies conducted by the Department of Meteorology, identified that, during La-Nina years, above normal rainfalls in most of the areas of the country during the month of January (Fig 3b-A). During the month of February it was observed that above normal rainfalls (Fig 3b-B) over the most of the parts of the country except northern and southeastern parts. During the month of

March, it could be seen above normal rainfall in some areas in Northern, Northwestern, Central and South eastern parts and below normal rainfall in remaining areas of the country(Fig 3b-C).

2. The Indian Ocean Dipole (IOD) update

Above normal Sea surface temperatures (SSTs) were observed over most parts of the Bay of Bengal and below normal SSTs were observed over most parts of the Arabian Sea area. However the Indian Ocean Dipole (IOD) is persists within neutral bounds. The latest weekly value of the Indian Ocean Dipole (IOD) index to 19th December was $-0.31\text{ }^{\circ}\text{C}$. All five international climate models surveyed by the BoM indicate the monthly IOD value will continue within neutral range for January and likely to continue coming months in 2022. (Source-Bureau of Meteorology, Australia).

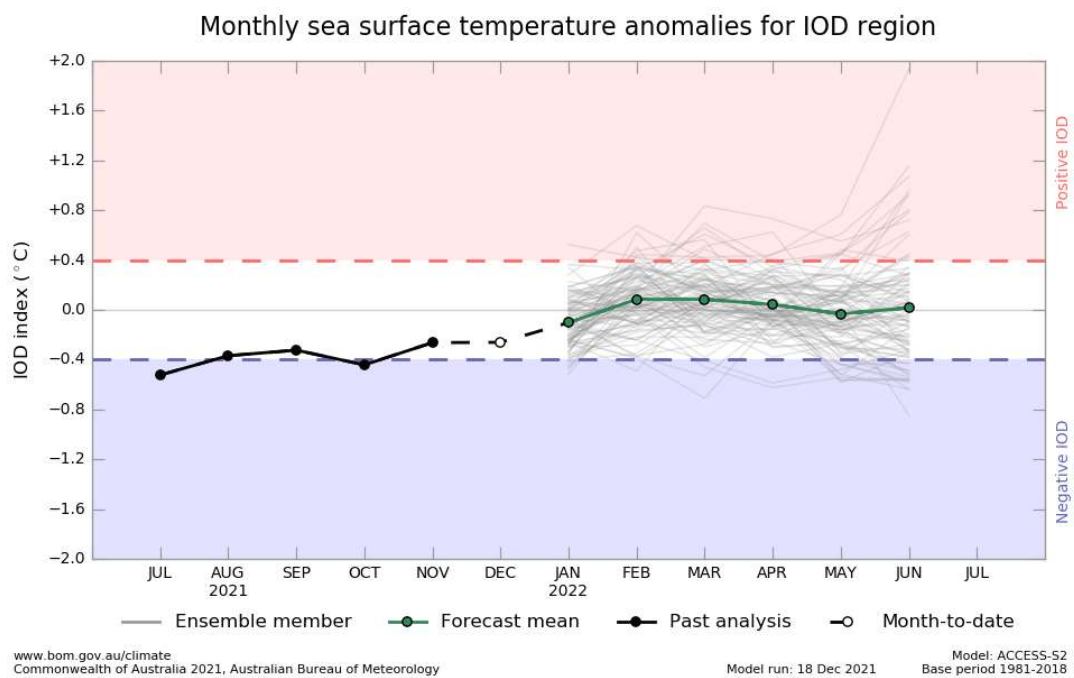


Figure 4a: IOD forecast from Australian Bureau of Meteorology