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Current condition and forecasts of ENSO and IOD for FMA 2024

Issued on 31st January 2024 by Seasonal forecasting Division of the Department of Meteorology, Sri Lanka.

1. El Nino and La Nina update

Prevailing El Niño is expected to continue for the next several months, with ENSO-neutral favored during April-June 2024 (73% chance)(NOAA CPC).

Model forecasts and observations indicate sea surface temperatures in the central tropical Pacific have peaked and are now declining. Sea surface temperatures in the tropical Pacific are expected to return to neutral El Niño–Southern Oscillation (ENSO) levels in the southern hemisphere autumn 2024. Some atmospheric indicators, such as cloudiness near the Date Line, are close to normal levels. The Southern Oscillation Index (SOI) has recently increased (BoM, Australia).

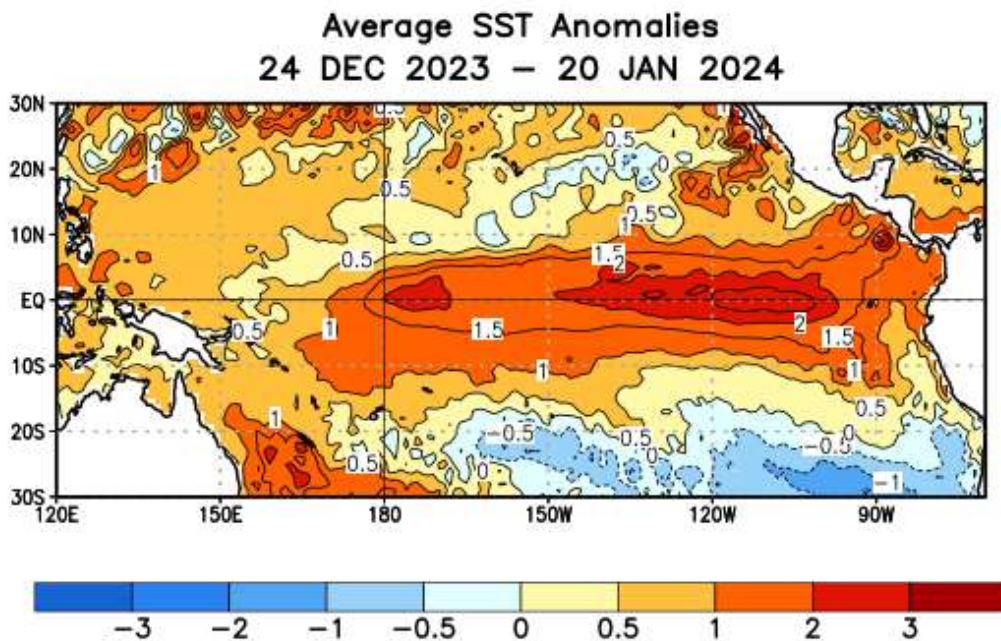


Fig 1: Observed Average sea surface temperature (SST) anomalies (°C)

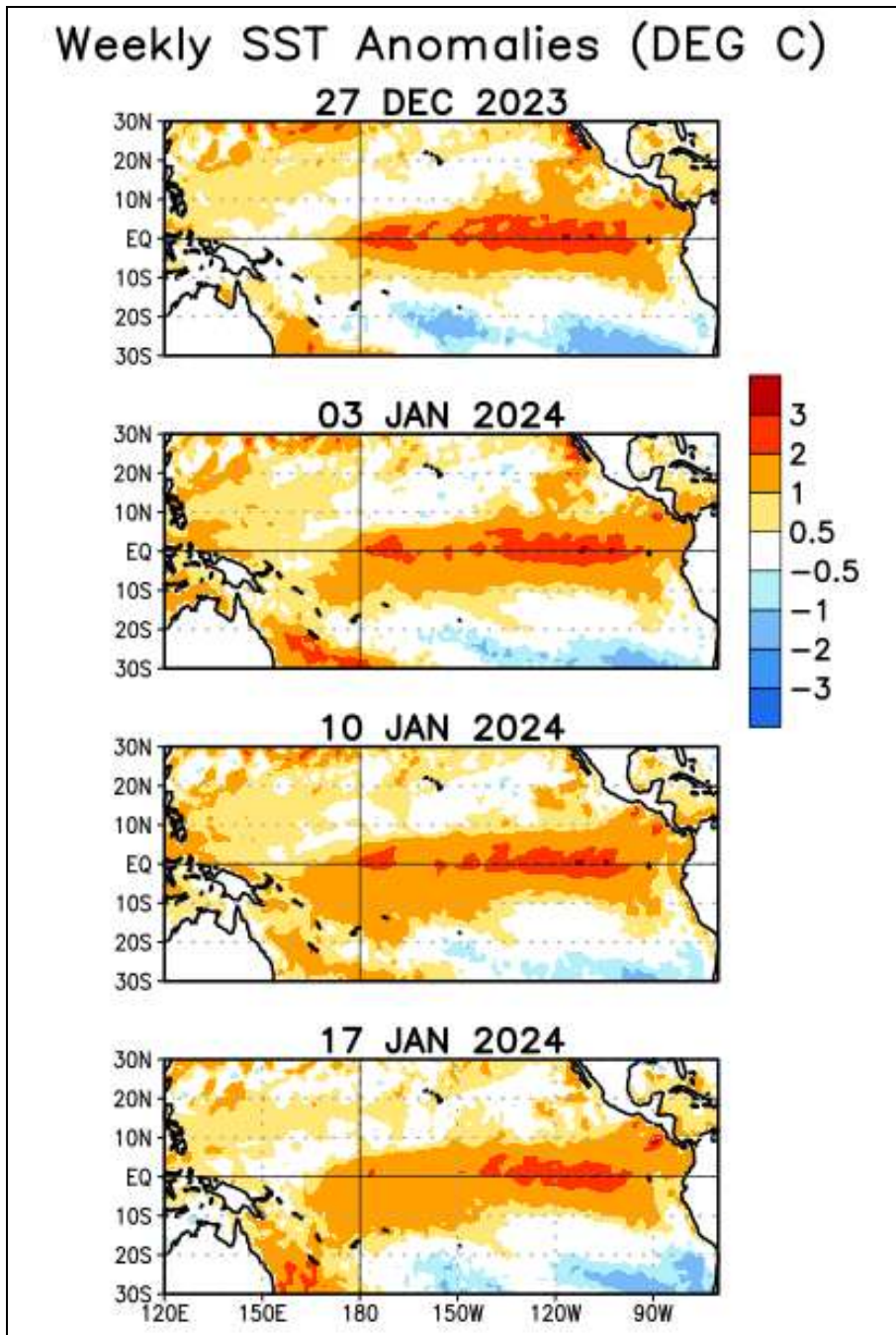


Fig 2: Weekly Observed Average sea surface temperature (SST) anomalies (°C)

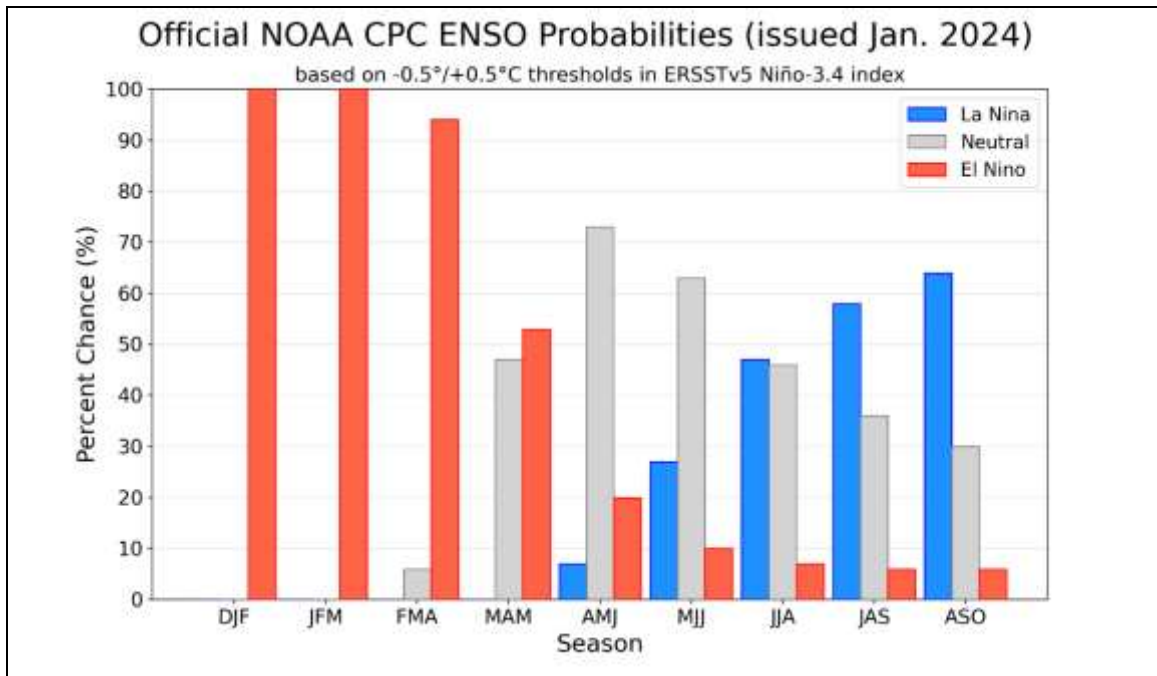


Fig 3a: ENSO forecast from Climate Prediction Center (CPC)/ IRI Forecast

1.1.1 Impacts of El-Niño on monthly rainfall anomaly during February, March and April

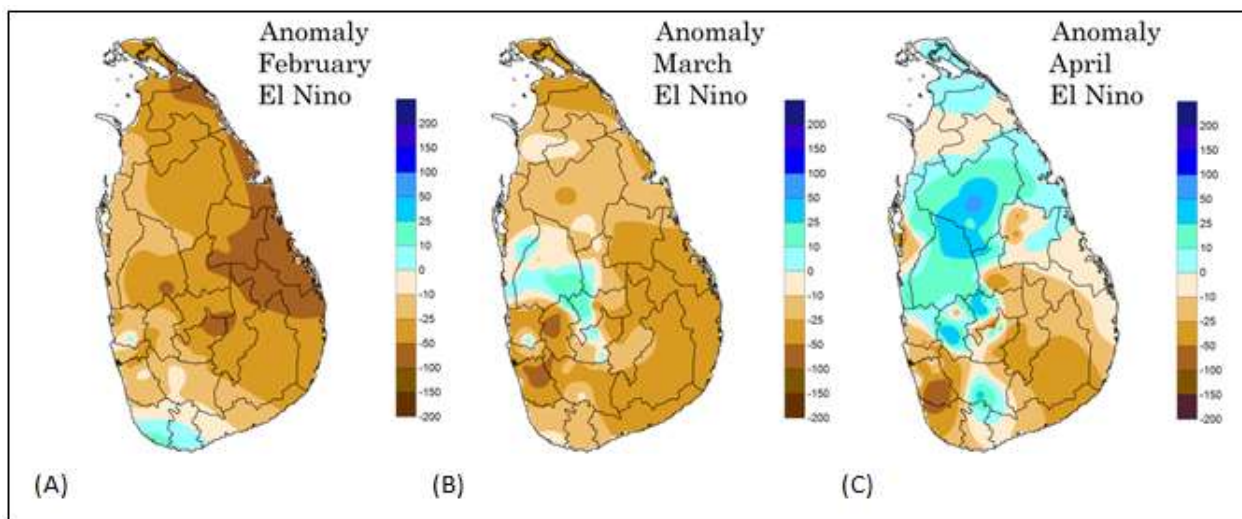


Fig 3b: Monthly Rainfall Anomaly maps of the months of February (A), March (B) and April (C) during El-Niño years (Hapuarachchi et al 2016)

A research conducted by the Department of Meteorology, it has been found that, most parts of the country had experienced below normal rainfall during the months of February and March and slightly above normal rainfalls were observed Anuradhpura, Trincomalee, Kilinochch, Jaffna and Kurunegala districts and below normal over remaining areas during the month of April during past El Niño conditions (Fig 3b(C)).

2. The Indian Ocean Dipole (IOD) update

The positive Indian Ocean Dipole (IOD) event has weakened from the strong values seen in late 2023. IOD events typically breakdown as the monsoon trough shifts south into the southern hemisphere. Due to the strength of the positive IOD in 2023, the event decay has been later than usual. Model forecasts and observations suggest the positive IOD is near its end, with the majority indicating the IOD index will fall below $+0.4\text{ }^{\circ}\text{C}$ in the coming weeks.(source- BOM,Australia).

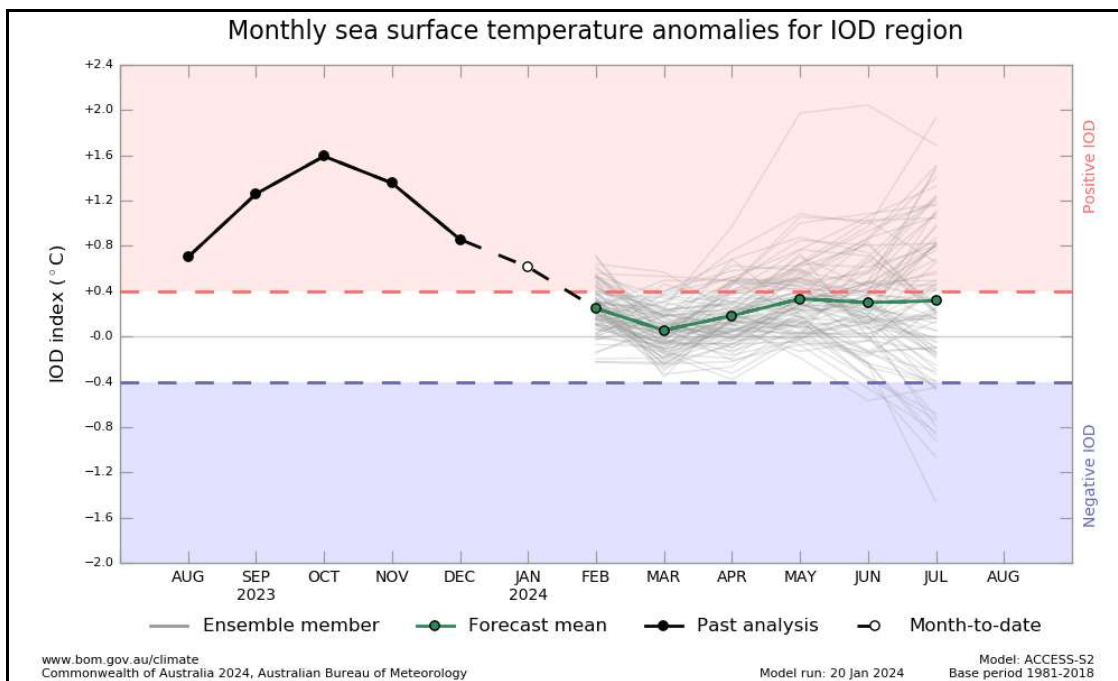


Figure 4a: IOD forecast from Australian Bureau of Meteorology