



No SF-2024-05-ENSO-IOD

Current condition and forecasts of ENSO and IOD for MJJ 2024

Issued on 06th May 2024 by Seasonal forecasting Division of the Department of Meteorology, Sri Lanka.

1. El Nino and La Nina update

A transition from El Niño to ENSO-neutral is likely by April-June 2024 (85% chance), with the odds of La Niña developing by June-August 2024 (60% chance). Fig 3a). (Climate Prediction Center / NCEP).

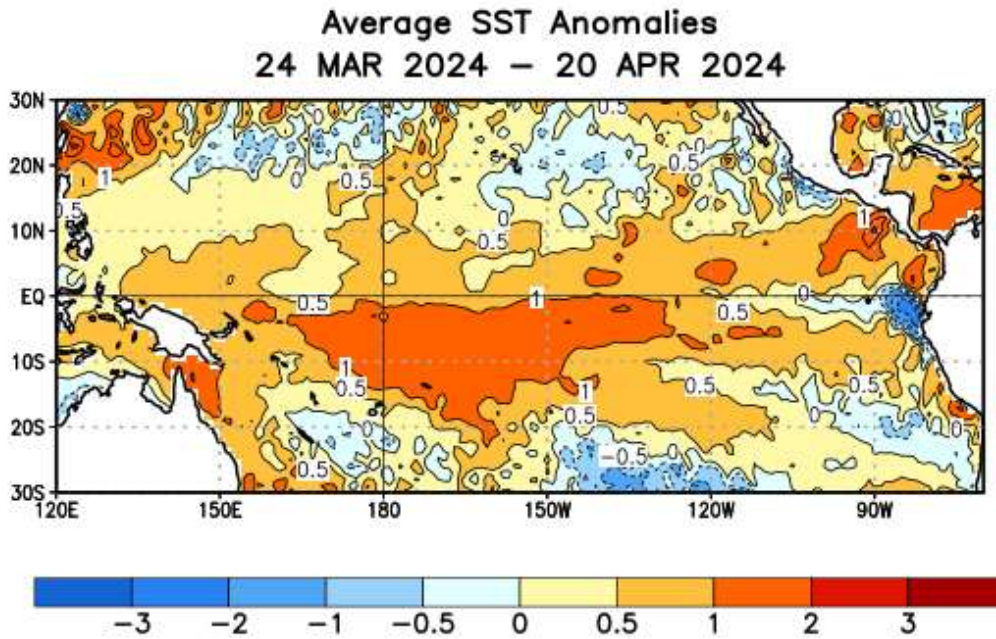


Fig 1: Observed Average sea surface temperature (SST) anomalies (°C)

Weekly SST Anomalies (DEG C)

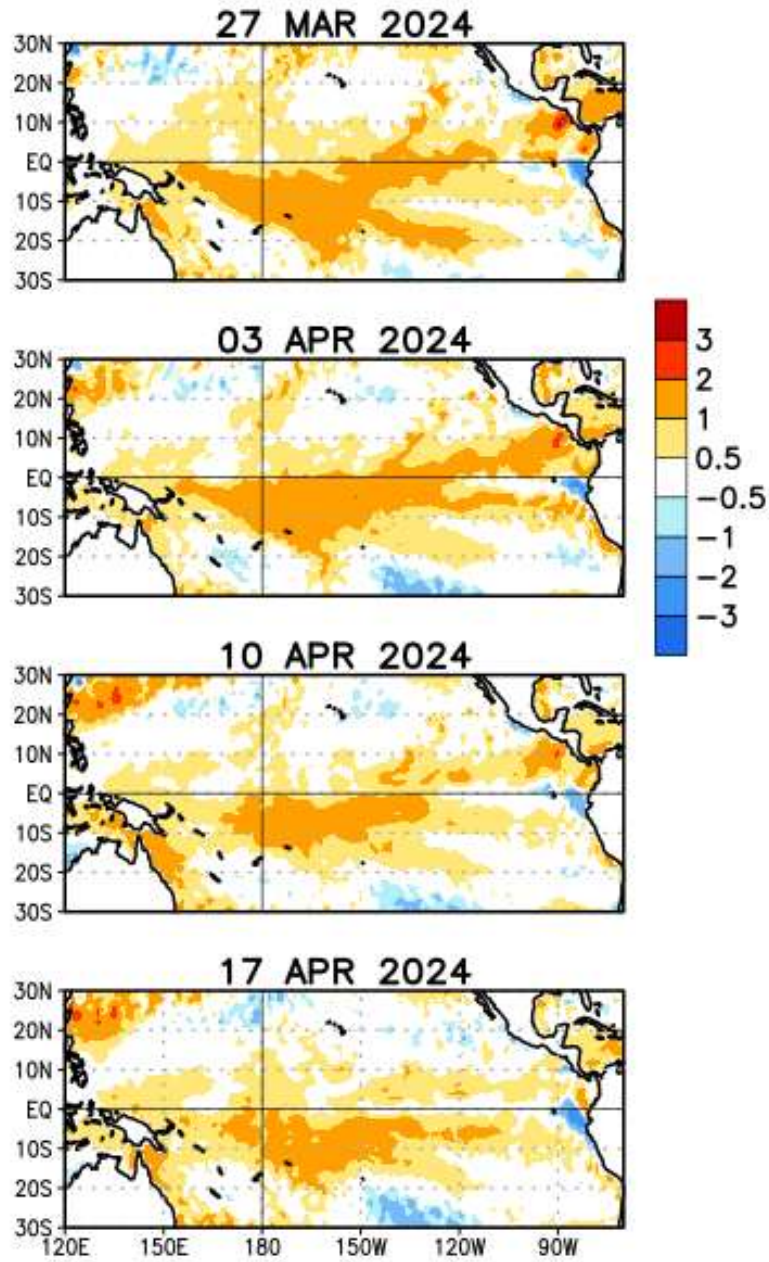


Fig 2: Weekly Observed Average sea surface temperature (SST) anomalies (°C)

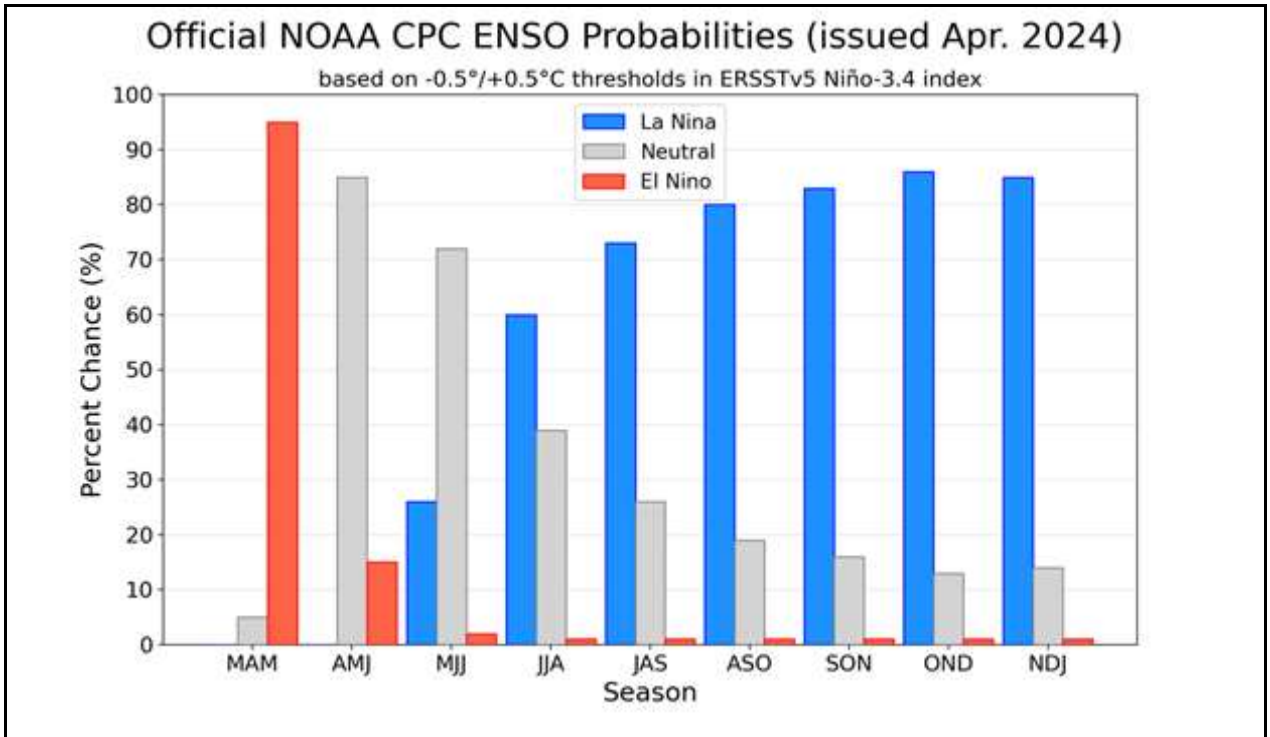


Fig 3a: ENSO forecast from Climate Prediction Center (CPC)/ IRI Forecast

1.1.1 Impacts of El-Niño on monthly rainfall anomaly during May, June and July

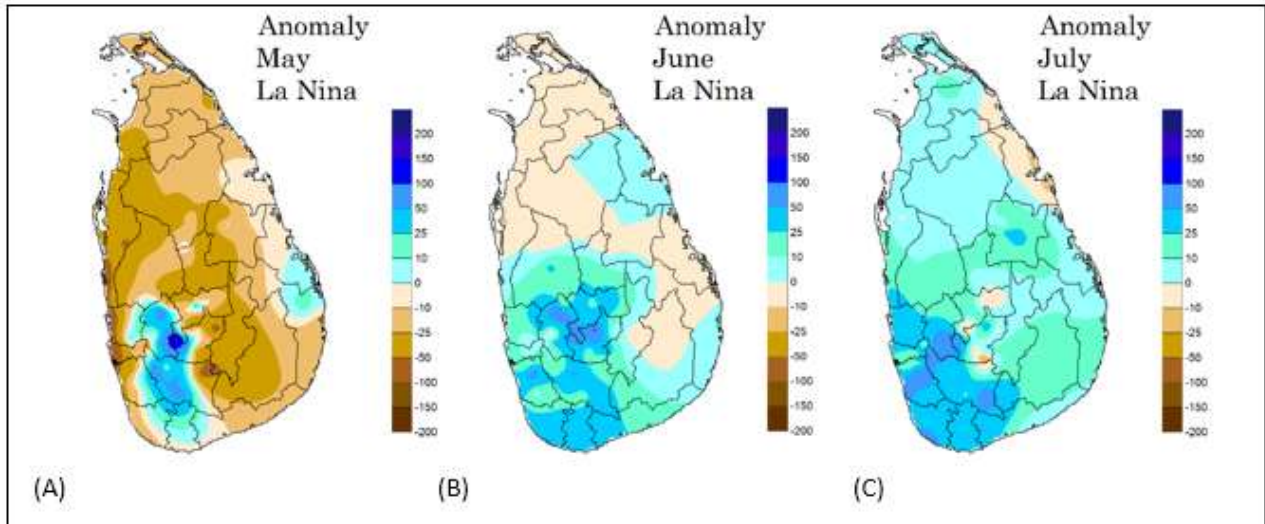


Fig 3b: Monthly Rainfall Anomaly maps of the months of May (A), June (B) and July (C) during El-Niño years (Hapuarachchi et al 2016)

A research conducted by the Department of Meteorology, it has been found that, above normal rainfalls over in some areas of the south western part and in Ampara and Batticaloa districts and below normal rainfalls over remaining areas of the country during the month of May while the La nina conditions were prevailed. It has been observed above or near normal rainfalls over most parts of the country during the months of June and July (Fig 3b).

2. The Indian Ocean Dipole (IOD) update

The Indian Ocean Dipole (IOD) index for the weekend 14 April 2024 is +0.57 °C. While the IOD index is above the positive IOD threshold, the IOD is currently neutral. Currently, record warm ocean temperatures in the north-west Indian Ocean are leading to these positive values of the IOD index. While the positive IOD values are mostly from record warmth in the north-west Indian Ocean, atmospheric indicators in the east may be consistent with developing positive IOD (source- BOM, Australia).

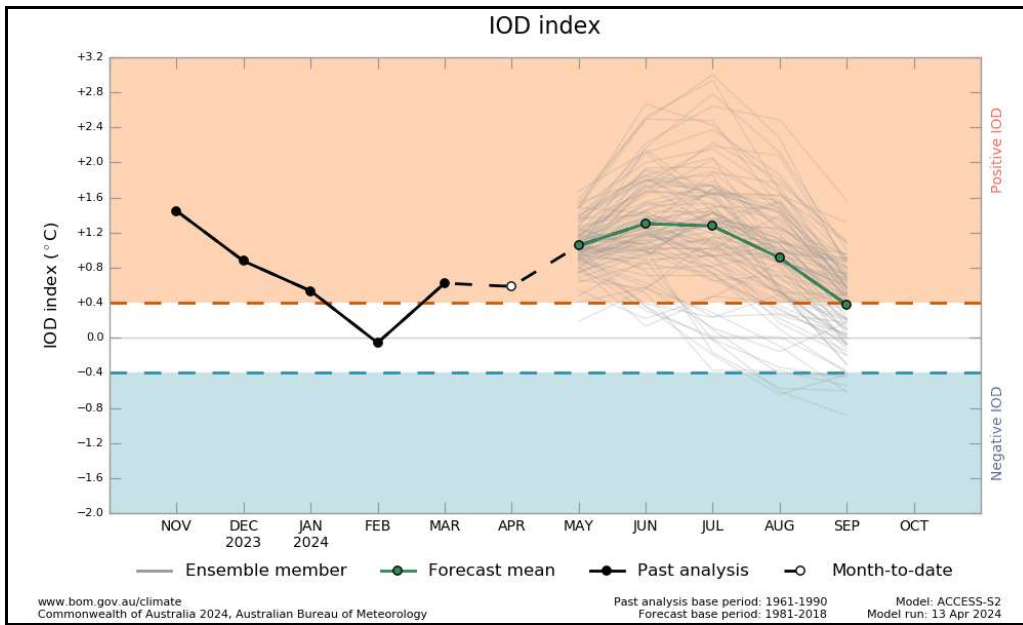


Figure 4a: IOD forecast from Australian Bureau of Meteorology

1.2.1 Impacts of positive IOD on monthly rainfall anomaly during May, June and July

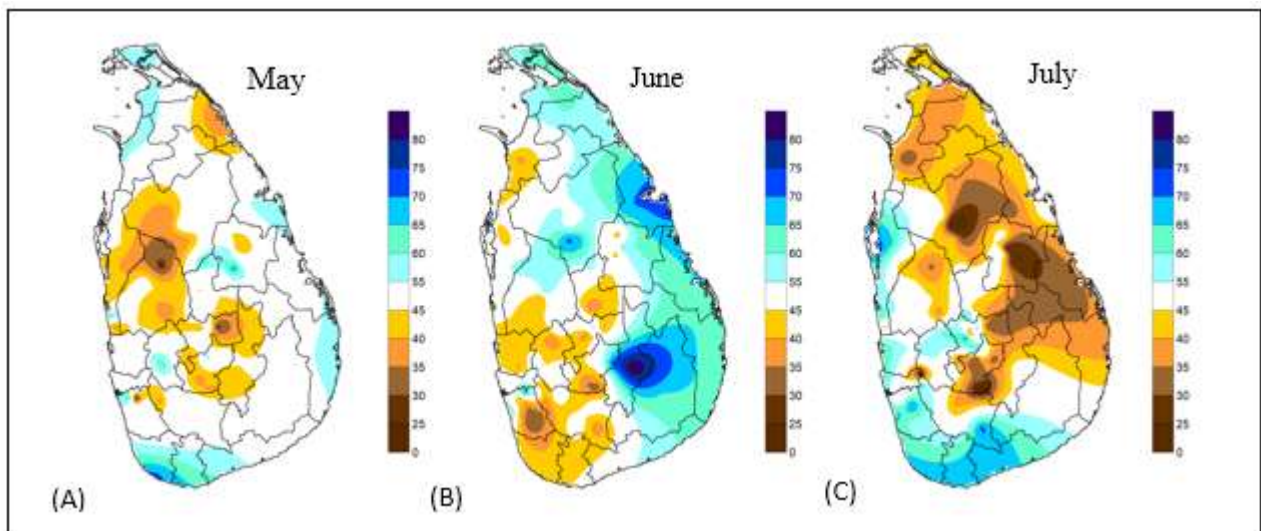


Fig 4b: Median Based Composite maps of Monthly Rainfall during May (A), June (B) and July (C) during positive IOD years (Hapuarachchi et al 2018)

Previous studies conducted by the Department of Meteorology identified that there is a higher probability of getting below normal rainfall all over some parts in North western and Central provinces and Anuradhapura and Mullativu districts. Near or slightly above normal rainfalls are likely over remaining areas during the month of May (Fig 4b (A)). During the month of June it is showing a higher probability of getting below normal rainfalls in some areas in Western, Southern, Uwa and Central provinces and above or near normal rainfalls over remaining areas of the country (Fig 4b (B)) under the positive IOD condition. During the month of July below normal rainfalls are likely over most parts in Eastern, Northern, Central and Northcentral provinces and some areas in Kurunegala and Rathnapura districts. Above or near normal rainfalls are likely over elsewhere of the country under the positive IOD condition (Fig 4b (C)) during the month of July.