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Current condition and forecasts of ENSO and IOD for MJJ 2024

Issued on 04th June 2024 by Seasonal forecasting Division of the Department of Meteorology, Sri Lanka.

1. El Niño and La Niña update

El Niño is transitioning toward ENSO-neutral. Equatorial sea surface temperatures (SSTs) are above average in the western and central Pacific Ocean, and below-average SSTs are emerging in the east-central and eastern Pacific Ocean. A transition from El Niño to ENSO-neutral is likely in the next month. La Niña may develop in June-August 2024 (49% chance) or July-September (69% chance). (CPC-NOAA)

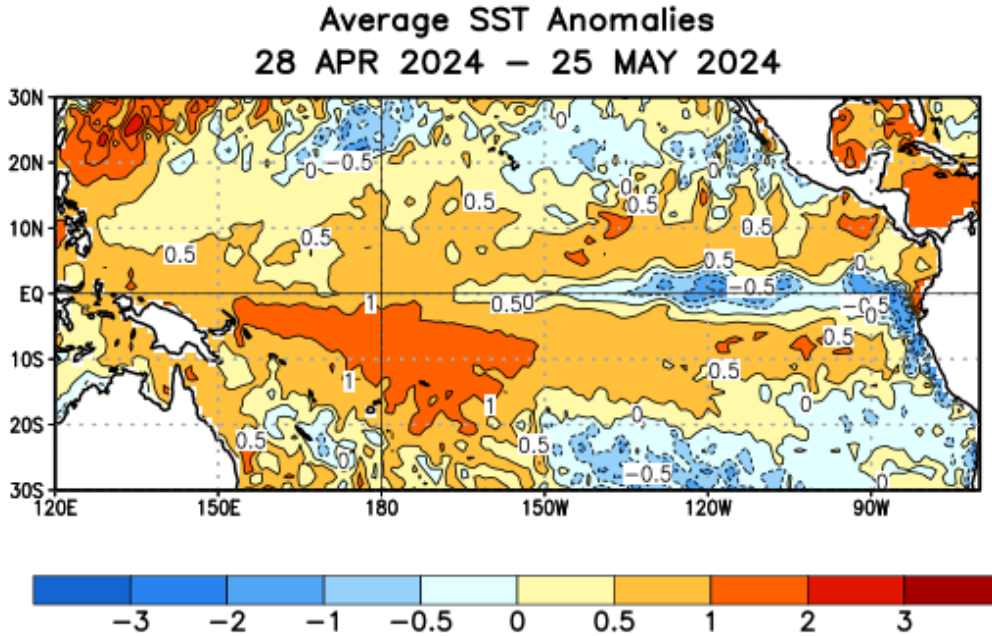


Fig 1: Observed Average sea surface temperature (SST) anomalies (°C)

Weekly SST Anomalies (DEG C)

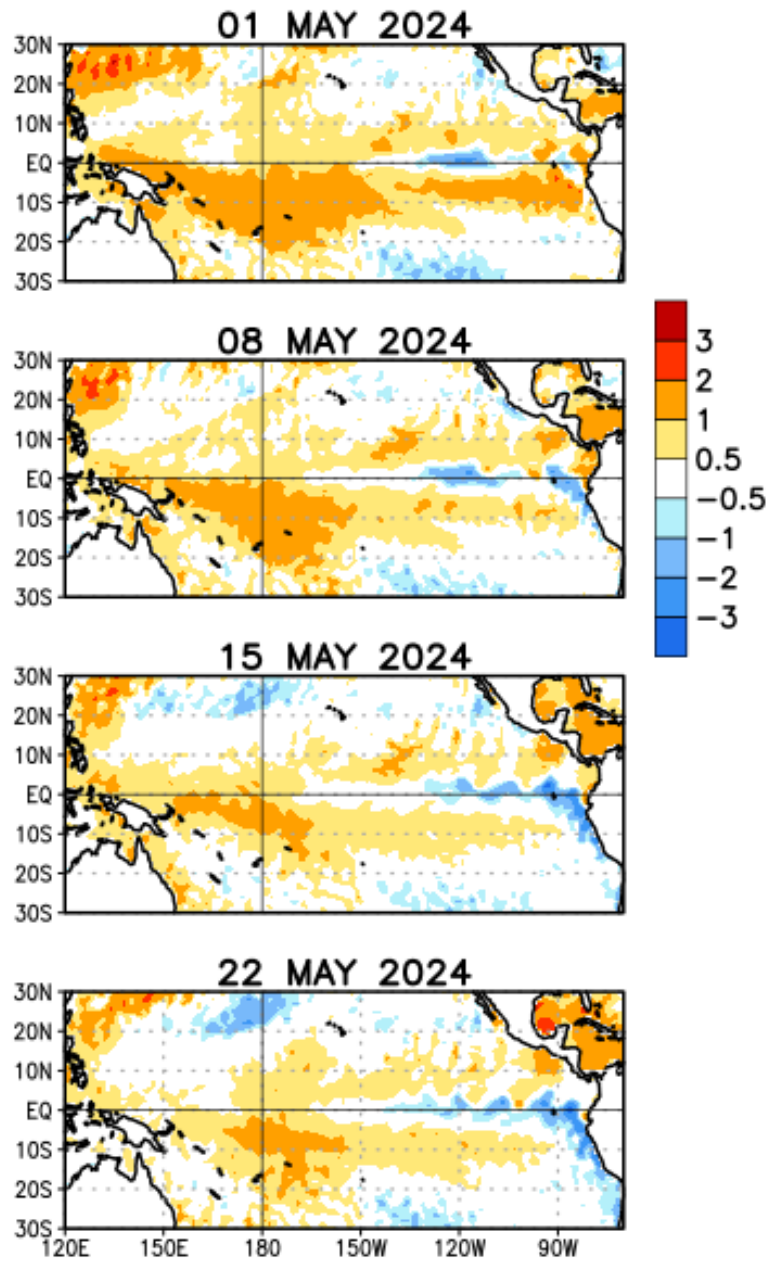


Fig 2: Weekly Observed Average sea surface temperature (SST) anomalies (°C)

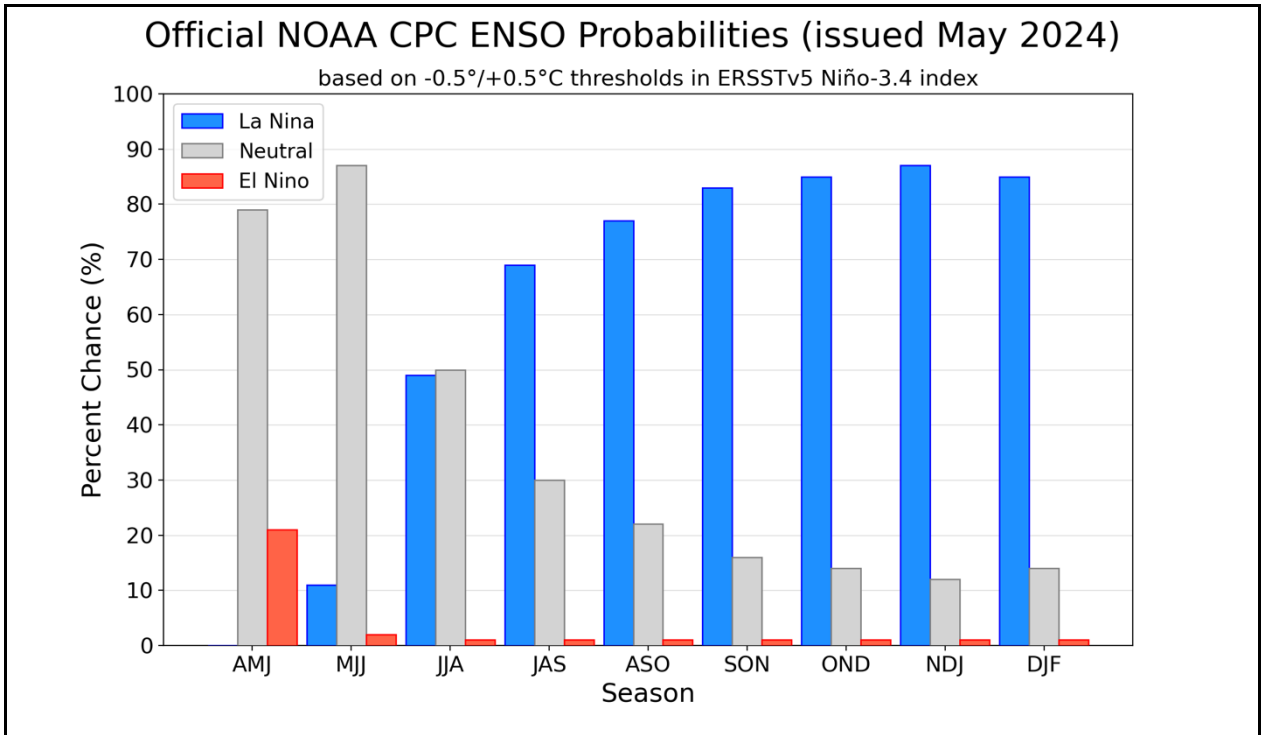


Fig 3a: ENSO forecast from Climate Prediction Center (CPC)/ IRI Forecast

1.1.1 Impacts of La-nina on monthly rainfall anomaly during June, July and August

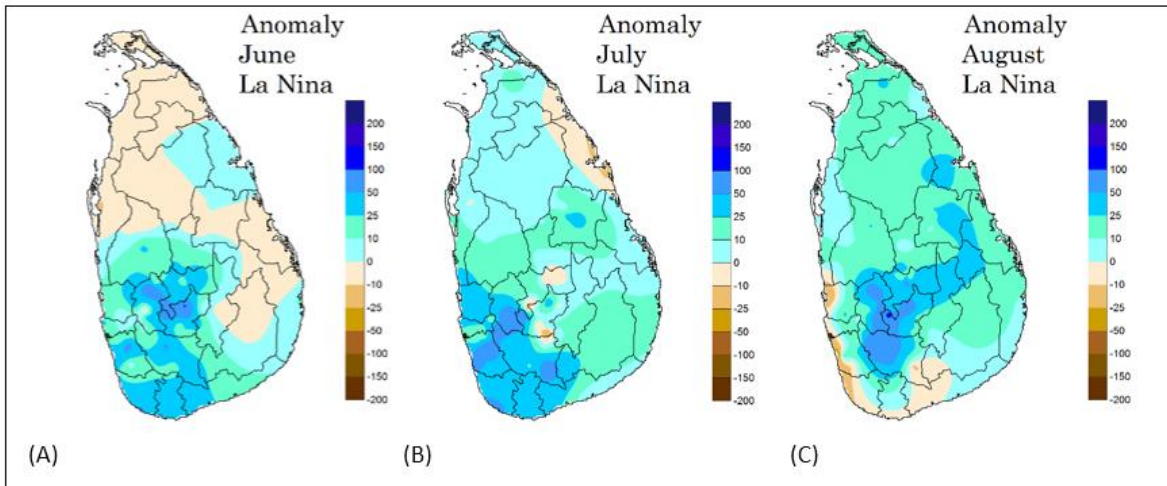


Fig 3b: Monthly Rainfall Anomaly maps of the months of June (A), July(B) and August(C) during La-nina years (Hapuarachchi et al 2016)

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

2. The Indian Ocean Dipole (IOD) update

The Indian Ocean Dipole (IOD) is currently neutral. The most recent 4 weeks have seen the IOD index within neutral thresholds, with the latest weekly value (+0.38 °C) just below the positive IOD threshold of (+0.40 °C). (source- BOM, Australia).

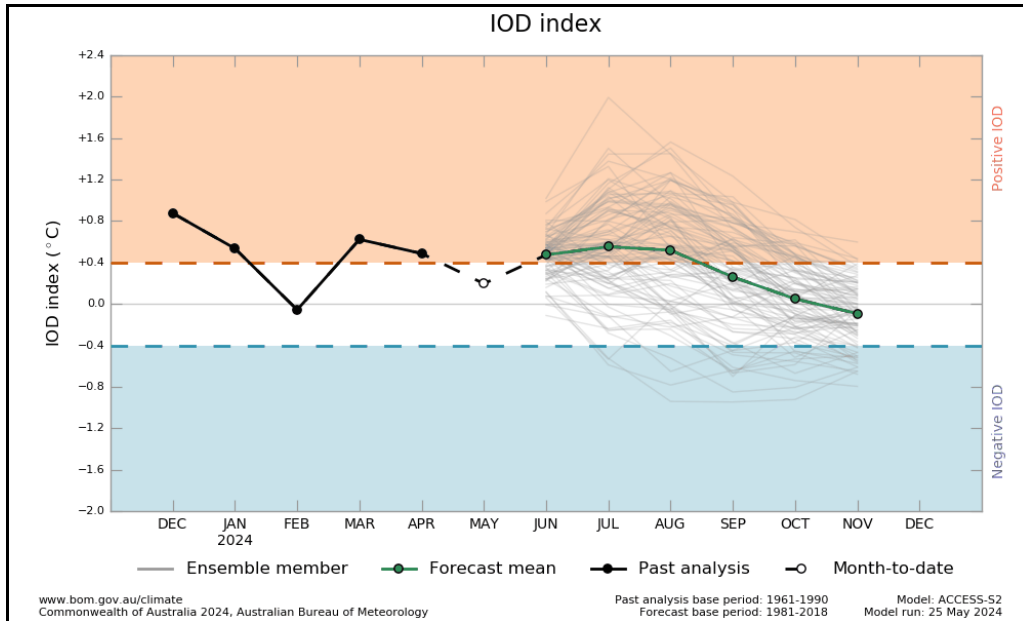


Figure 4a: IOD forecast from Australian Bureau of Meteorology

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

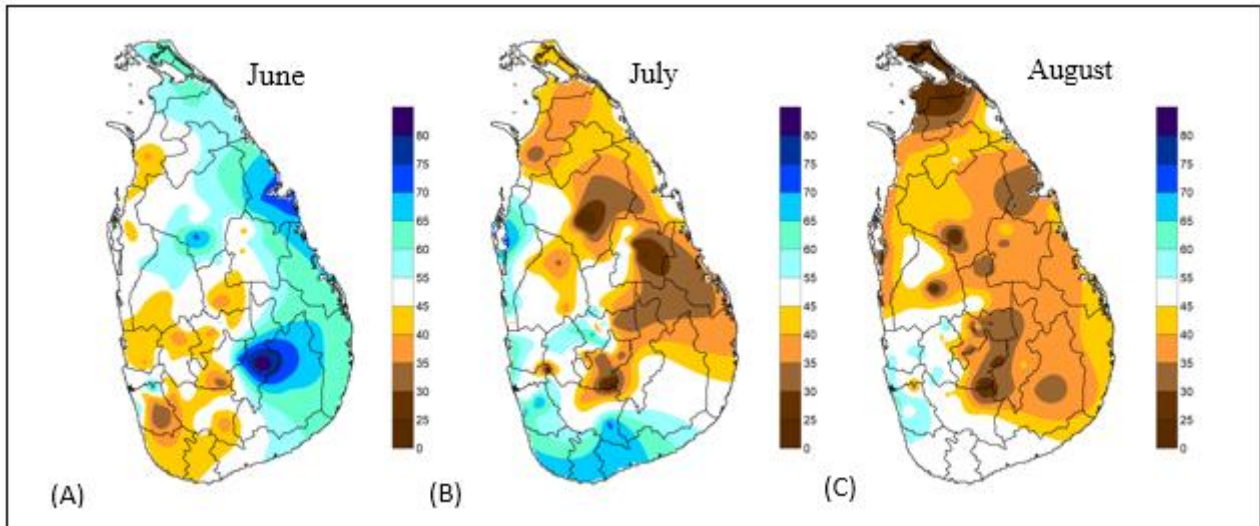


Fig 4b: Median Based Composite maps of Monthly Rainfall during June (A), July (B) and August (c) during positive IOD years (Hapuarachchi et al 2018)

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 Western, Southern,

Sabaragamuwa and Central provinces and Mannar district and near or slightly above normal rainfalls are likely over remaining areas during the month of June(Fig 4b(A)). During the month of July, it is showing a higher probability of getting above normal rainfalls in some areas in Western and Southern provinces and Kandy, Kegalle and Puttalam districts and below normal rainfalls are likely over most of the remaining areas of the country (Fig 4b (B)) under the positive IOD condition. During the month of August near normal rainfalls are likely over southwestern parts and below normal over remaining parts of the country under the positive IOD condition (Fig 4b (C)).