



No SF-2022-06-ENSO-IOD

## Current condition and forecasts of ENSO and IOD for JJA 2022

Issued on 4<sup>th</sup> June 2022 by Seasonal forecasting Division of the Department of Meteorology, Sri Lanka.

### 1. El Nino and La Nina update

The tropical Pacific atmosphere is consistent with La Niña conditions. A majority of the statistical and dynamical models predict La Niña is favored to continue through Northern Hemispheres summer 2022. Further, La Niña is likely to continue into the Northern Hemisphere summer with a 58 % chance during August – October 2022 before slightly increasing through the Northern Hemisphere fall and early winter 2022 with the 61% chance. (source-CPC-USA) (Fig.3a).

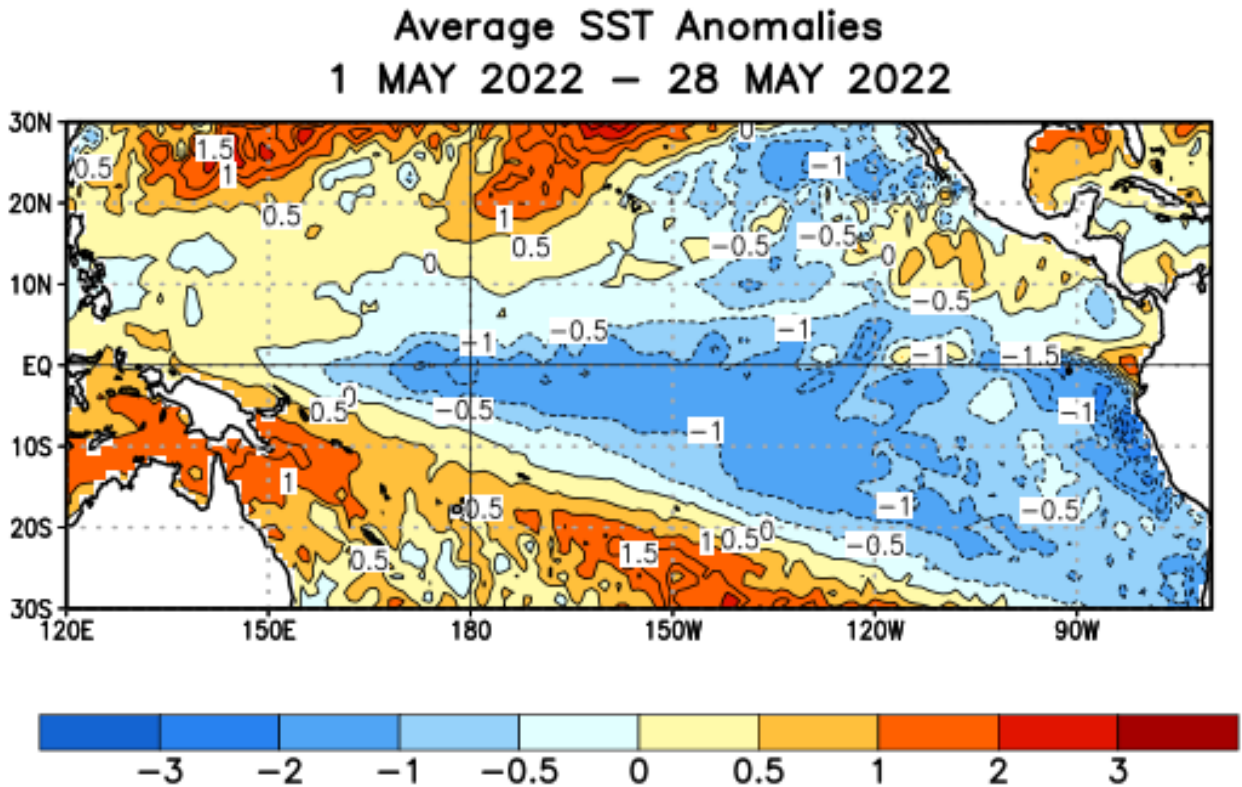


Fig 1: Observed Average sea surface temperature (SST) anomalies (°C)

## Weekly SST Anomalies (DEG C)

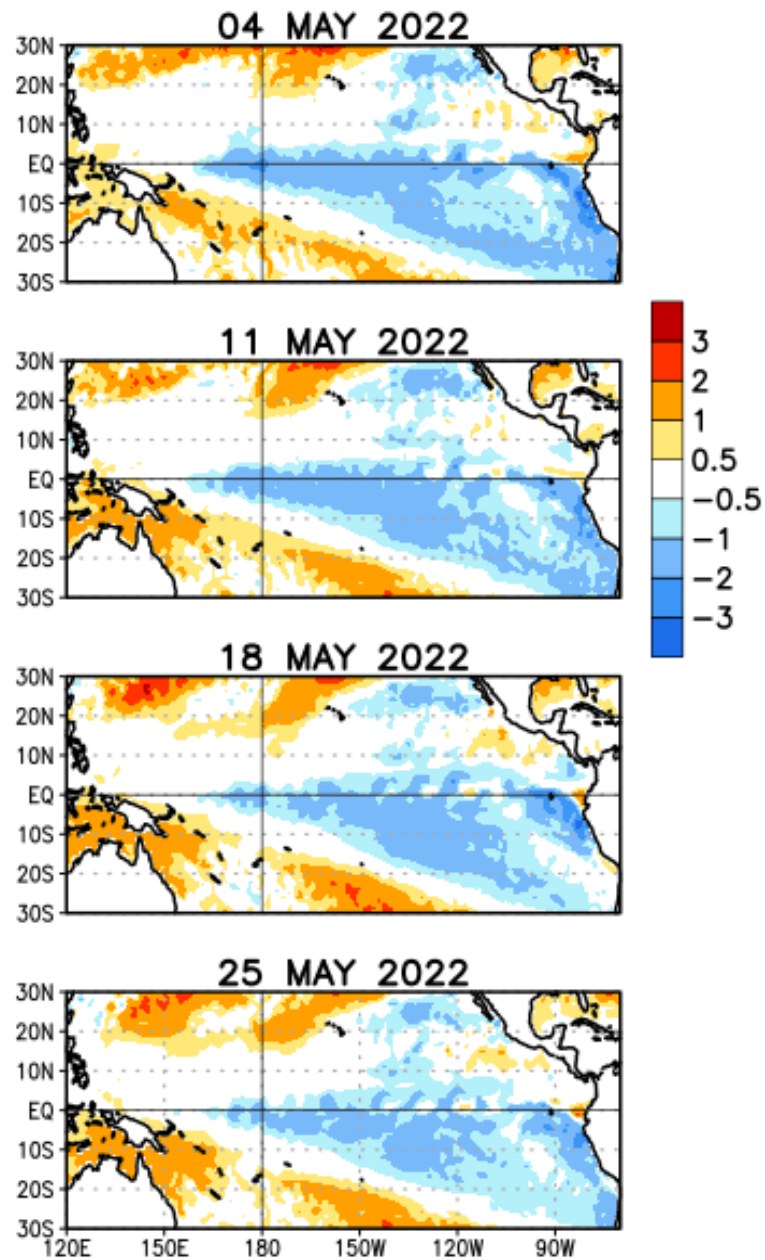


Fig 2: Weekly Observed Average sea surface temperature (SST) anomalies ( $^{\circ}\text{C}$ )

Early-May 2022 CPC/IRI Official Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly  
Neutral ENSO: -0.5 °C to 0.5 °C

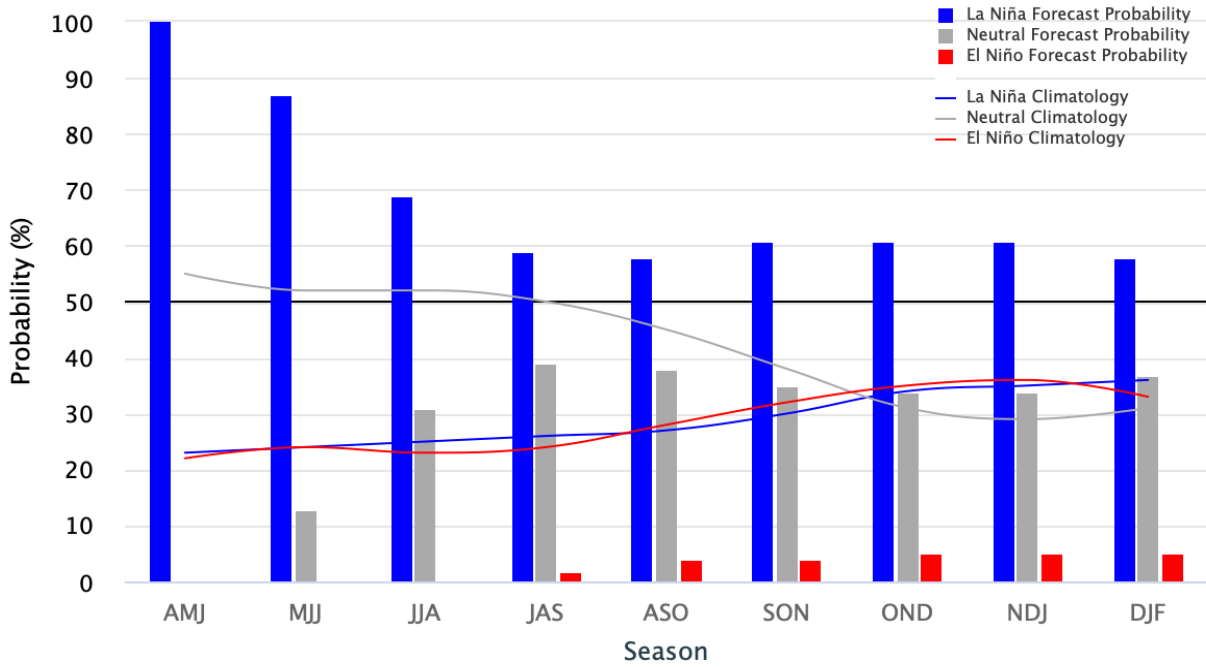


Fig 3a: ENSO forecast from Climate Prediction Center (CPC)/ IRI Forecast

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

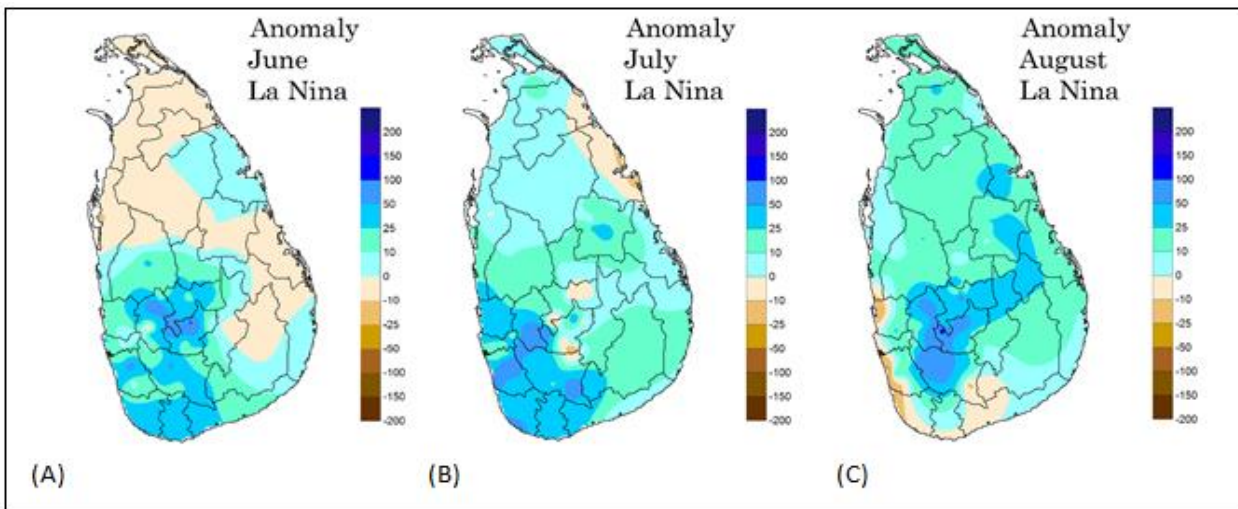


Fig 3b: Monthly Rainfall Anomaly maps of the months of June (A), July (B) and August (C) during La-Nina years (Hapuarachchi et al 2016)

Previous studies conducted by the Department of Meteorology, identified that, during La-Nina years, above or near normal rainfalls over most parts of the country during the months of June, July and August (Fig 3b).

## 2. The Indian Ocean Dipole (IOD) update

Overall, slightly above normal Sea surface temperatures (SSTs) were observed over the Indian Ocean. However the Indian Ocean Dipole (IOD) is persists within neutral bounds. The latest weekly value of the Indian Ocean Dipole (IOD) index to 22<sup>nd</sup> May was  $-0.55\text{ }^{\circ}\text{C}$ . All five international climate models surveyed by the BoM indicate a negative IOD event during the coming months and most of the models show strongest negative IOD by the month of August. (Source-Bureau of Meteorology, Australia).

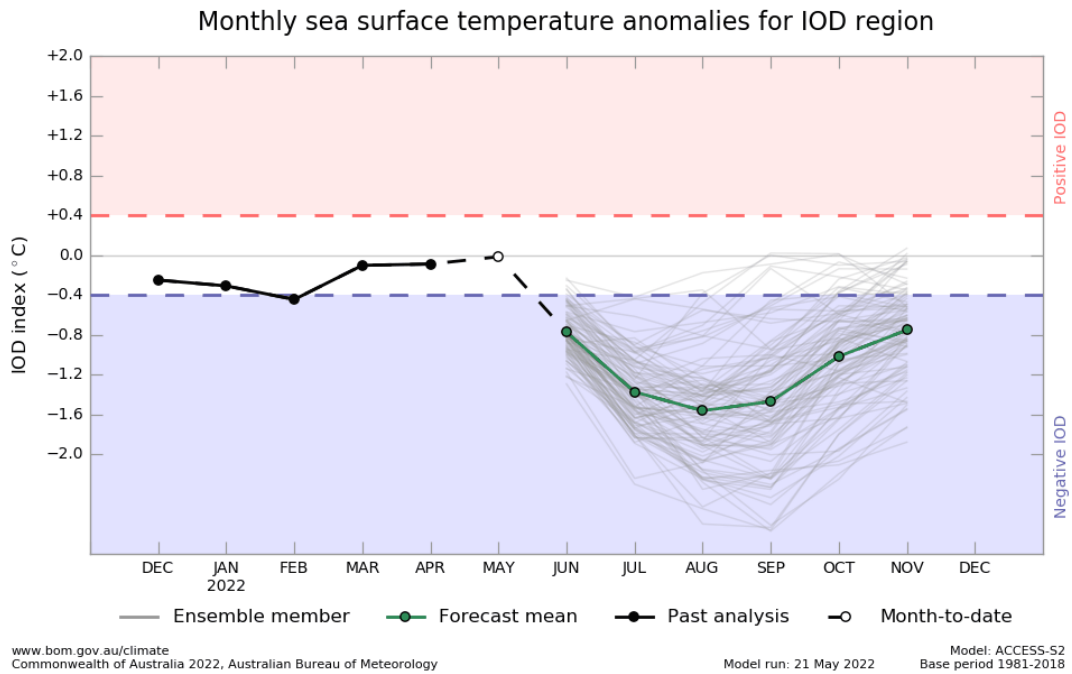


Figure 4a: IOD forecast from Australian Bureau of Meteorology

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

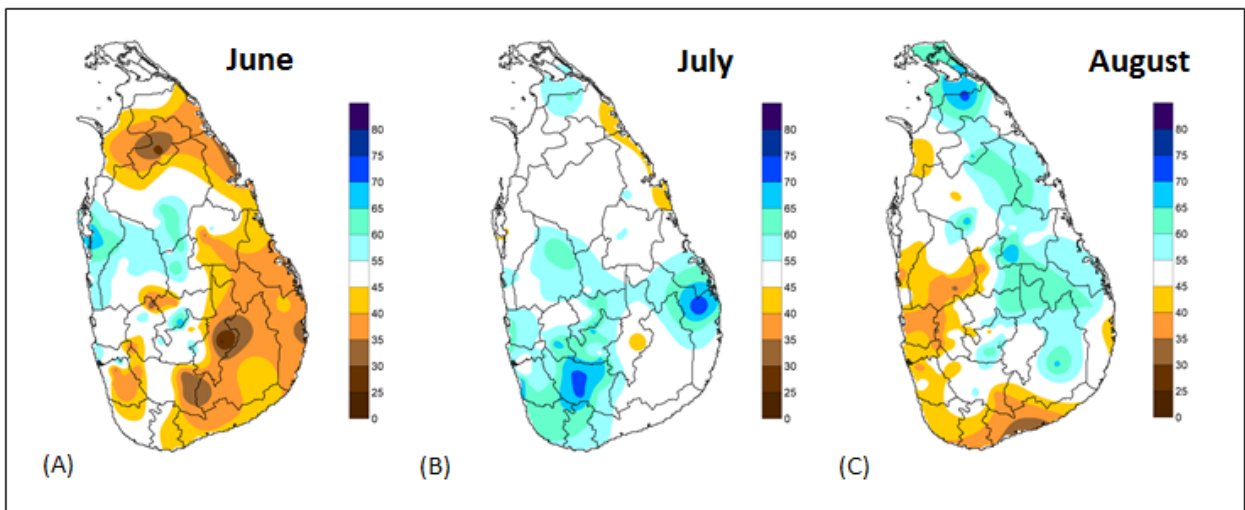


Fig 4b: Median Based Composite maps of Monthly Rainfall during June (A) July(B) and August

(C) during Negative 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 over Mannar, Vavuniya, Mulativu, Trincomalee, Batticaloa and South eastern part of the country and above normal rainfall over some parts in Puttalam, Kurunegala, Matale and Anuradhapura districts under the negative IOD condition during the month of June. But in the month of July it is showing the higher probability of getting above normal rainfall over south western part of the country and Batticaloa, Ampara, Matale and Kurunegala districts (Fig 3b (B)). And there is a higher probability of getting below normal rainfall over some parts of Mannar, Puttalam, Kurunegala, Gampaha, Colombo, Galle, Matara, Rathnapura, Monaragala and Hambantota districts and near or above normal rainfall over other parts of the country during the month of August (Fig 3b (C)) under the negative IOD condition.