

1. Overview

1.1 During August 2020, most of Mainland Southeast Asia experienced above-average rainfall (Figure 1). The largest positive anomalies (wetter conditions) were recorded in Lao PDR and Rakhine State, Myanmar, based on both satellite-derived rainfall estimates datasets (GSMaP-NRT and CMORPH-Blended). In contrast, northern Philippines recorded below-average rainfall. For the southern half of Southeast Asia, below- to near-average rainfall was recorded in the west, and near- to above-average rainfall in the east. There is some discrepancy between the two satellite datasets for the below-average rainfall for Sumatra and Peninsular Malaysia, with more extensive drier conditions based on CMORPH-Blended (Figure 1, right) compared to GSMaP-NRT (Figure 1, left).

1.2 The observed large-scale rainfall anomaly pattern for southern Southeast Asia (i.e. below-average rainfall in the west and above-average rainfall in the east) is broadly consistent with the predictions from the subseasonal weather outlooks for August 2020 ([27 July - 09 Aug](#), [10 – 23 Aug](#)). The only notable anomalies forecasted for Mainland Southeast Asia were the wetter conditions over its southern and eastern coastal regions (linked to the MJO signal in phases 4 and 5).

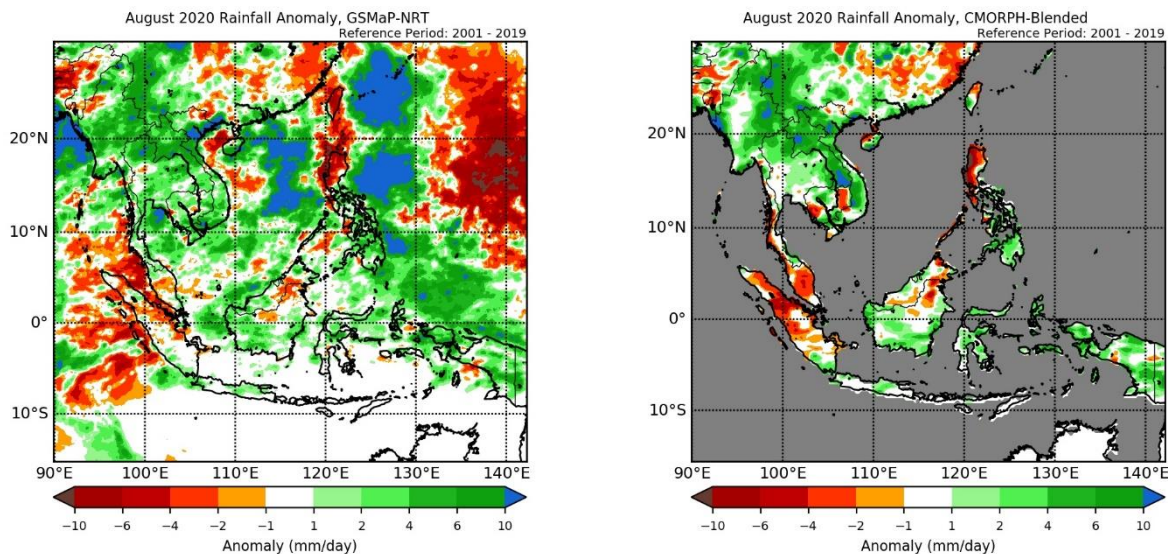


Figure 1: Rainfall anomalies for the month of August 2020 based on GSMaP-NRT data (left) and CMORPH-Blended data (right). The climatological reference period is 2001-2019. Green colour denotes above-average rainfall (wetter), while orange denotes below-average rainfall (drier).

1.3 Most of Southeast Asia experienced above-average temperature during August 2020, apart from central and northern Mainland Southeast Asia where the temperature was closer to the climatological average (Figure 2). Warmer anomalies ($\geq 0.5^{\circ}\text{C}$) occurred mainly in coastal regions, with the warmest anomalies in August ($\geq 1.0^{\circ}\text{C}$) in southeastern Southeast Asia.

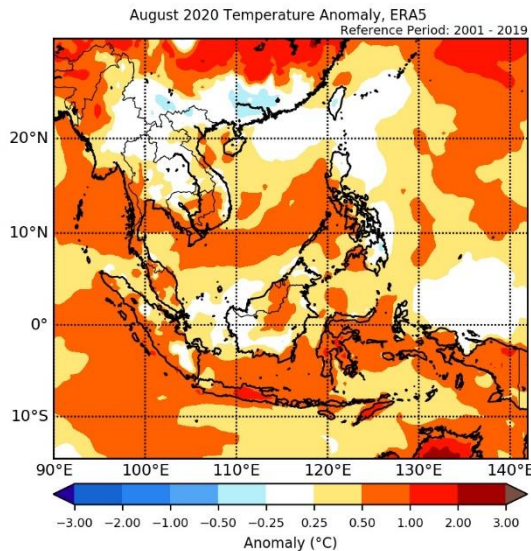


Figure 2: Temperature anomalies for August 2020 based on ERA-5 reanalysis. The climatological reference period is 2001-2019. Red colour denotes above-average temperature (warmer), while blue denotes below-average temperature (colder).

2. Climate Drivers

2.1 At the start of August, a Madden-Julian Oscillation (MJO) signal was present in the maritime continent (Figure 3). The signal then weakened and quickly moved across the Pacific reaching the Western Hemisphere (Phase 8) by the middle of the month. In the second half of August, the once again substantial MJO signal continued to propagate eastward with the enhanced phase reaching the eastern Indian Ocean (Phase 3) by the end of the month. At this time of year, phases 4 and 5 typically bring above-average rainfall for regions in Southeast Asia between 5° and 20°N , while phases 8 and 1 typically bring below-average rainfall for the same region. Phases 2 and 3 tend to bring wetter conditions to the western maritime continent (which was not evident in the rainfall anomalies for August 2020, Figure 1).

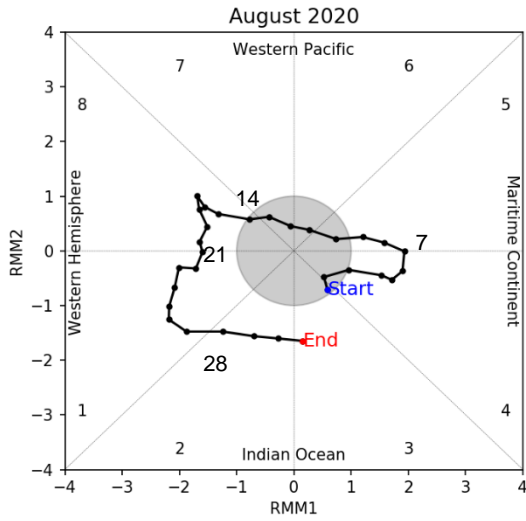


Figure 3: The MJO phase diagram. The diagram illustrates the movement of the MJO through different phases, which correspond to different locations along the equator (denoted in the text with the first day of the month in blue and the last day of the month in red). The distance of the index from the centre of the diagram is related to the strength of the MJO. Values within the grey circle are considered weak or indiscernible (data from the Bureau of Meteorology, Australia).