

1. Overview

1.1 During January 2020, the region between 0° and 10°N predominately experienced below-average rainfall (Figure 1). For south of the equator, there was a mixture of below- and above-average rainfall, with the largest positive anomalies (wetter conditions) over southern Borneo. The rainfall anomalies over mainland Southeast Asia were small, which is expected given that January is the drier time of the year for that region.

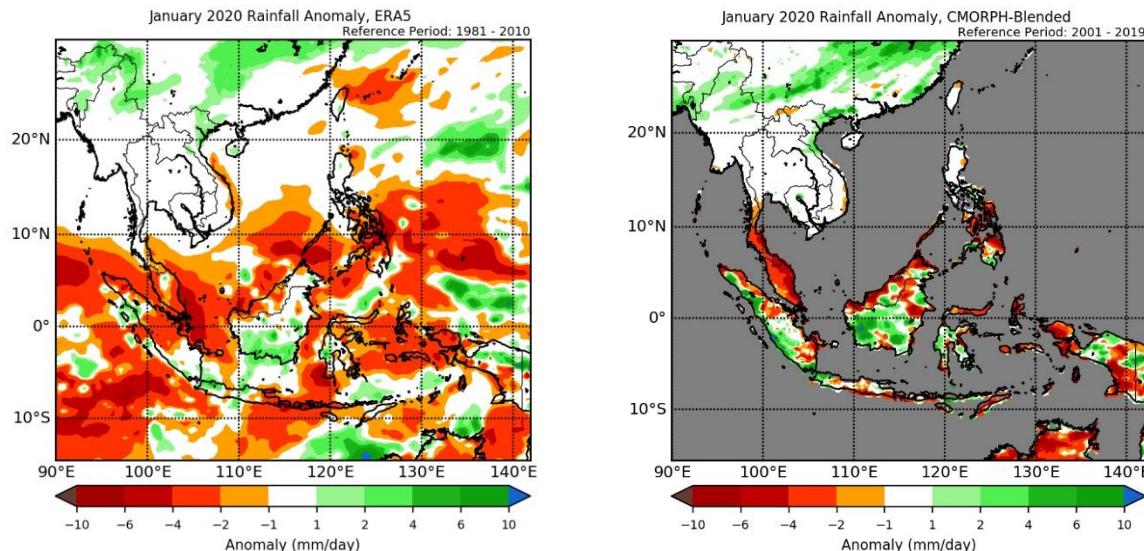


Figure 1: Rainfall anomalies for January 2020 based on ERA-5 reanalysis data (left) and CMORPH-Blended data (right). The climatological reference periods are 1981-2010 and 2001-2019 for ERA-5 and CMORPH-Blended data respectively. Green colour denotes above-average rainfall (wetter), while orange denotes below-average rainfall (drier).

1.2 Overall, most of Southeast Asia experienced above-average temperature during January 2020 (Figure 2). The largest anomalies occurred over northern Thailand, Laos and Viet Nam. Only western and northern Myanmar, and some parts of Cambodia, experienced near-average temperatures.

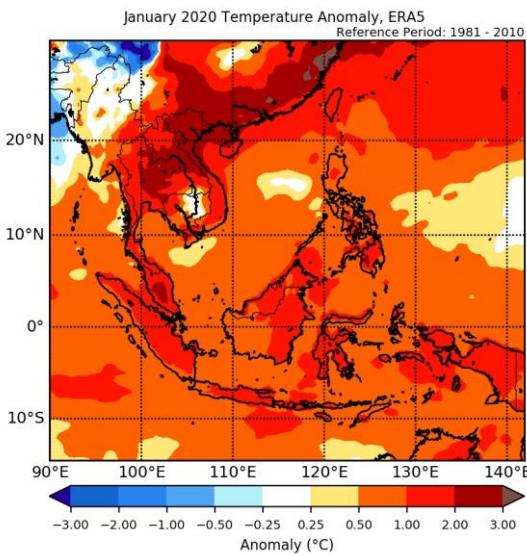


Figure 2: Temperature anomalies for the month of January 2020 based on ERA-5 reanalysis. The climatological reference period is 1981-2010. Red colour denotes above-average temperature (warmer), while blue denotes below-average temperature (colder).

2. Climate Drivers

2.1 A Madden–Julian Oscillation (MJO) signal developed over the Maritime Continent (Phase 4) during the first week of January 2020 (Figure 3). The signal strengthened rapidly, and then propagated eastwards with the main precipitation envelope reaching the Western Pacific (Phase 7). By the end of January, however, this MJO signal had weakened and became indiscernible. Phase 4 normally brings wetter conditions for much of Southeast Asia, while Phase 7 is associated with drier conditions. Phases 5 and 6 bring a mixture of wetter and drier conditions.

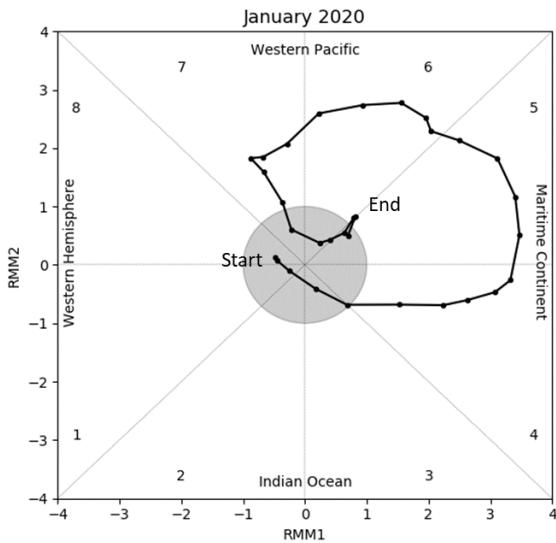


Figure 3: The MJO phase diagram. The diagram illustrates the movement of the MJO through different phases, which correspond to different locations along the equator (denoted in the text). The distance of the index from the centre of the diagram is related to the strength of the MJO. Values within the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

2.2 The strong positive Indian Ocean Dipole (IOD) event from 2019, which had been weakening since November 2019, continued to weaken and returned to the neutral state in January 2020. The IOD typically remains in the neutral phase during the season from January to April.