UPDATE OF REGIONAL WEATHER AND SMOKE HAZE (Second Fortnight of July 2019)

1. Review of Regional Weather Conditions for Second Fortnight of July 2019

1.1 Southwest Monsoon conditions continued to prevail in the second half of July 2019. The prevailing winds over the ASEAN region were blowing mainly from the southeast or southwest. During this period, rain bands associated with Tropical Storm Danas and Tropical Storm Wipha, which developed over the Philippine Sea and the South China Sea respectively, brought rainy weather to the northern ASEAN region. Above average rainfall was recorded in some parts of the northern ASEAN region.

1.2 In the southern ASEAN region, drier-than-normal conditions persisted over Peninsular Malaysia, Sumatra, Java and parts of Kalimantan. These conditions could be partly attributed to the presence of the Indian Ocean Dipole (IOD) which is currently in its positive phase.

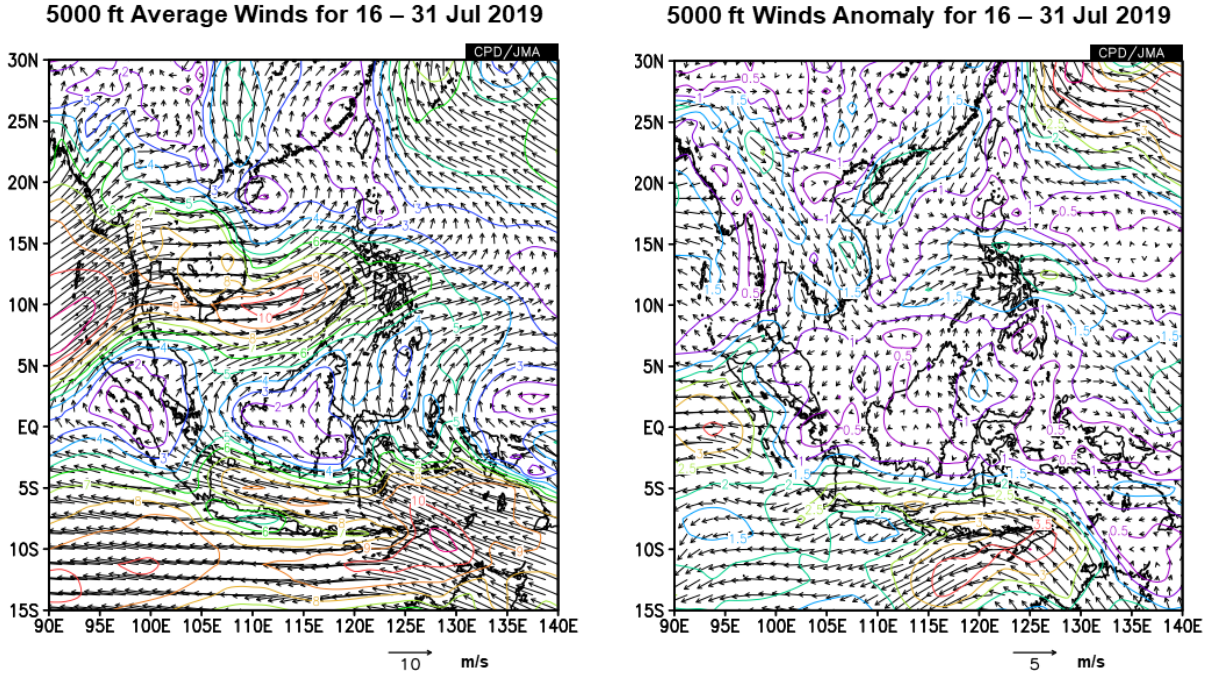

Figure 1 5000 ft average winds (left) and anomalies (right) for 16 – 31 July 2019 (Source: JMA)

Figure 2 Tracks of Tropical Storm Danas and Tropical Storm Wipha

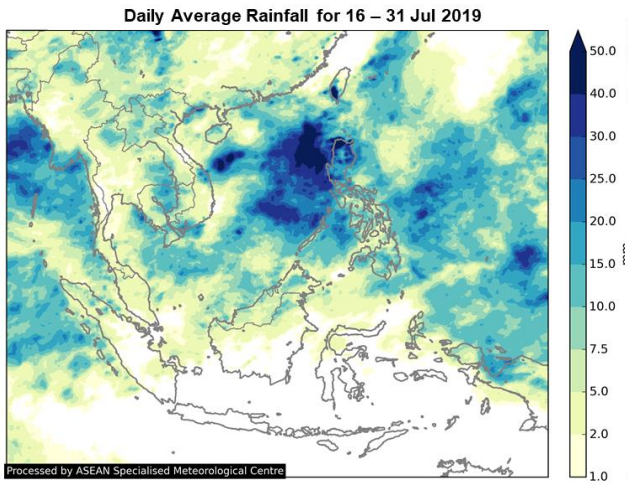

Figure 3 Daily average rainfall for the ASEAN region in the second fortnight of July 2019. (Source: JAXA Global Satellite Mapping of Precipitation)

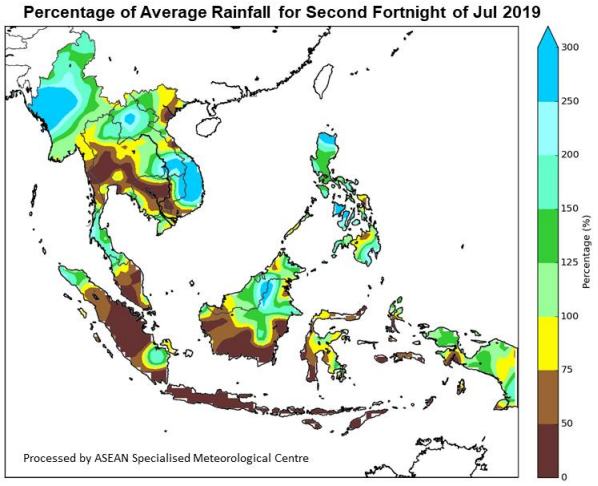

Figure 4 Percentage of average rainfall for 16 – 31 July 2019. The rainfall data may be less representative for areas with a less dense rainfall network. (Source: IRI NOAA/NCEP CPC Unified Precipitation Analyses)

1.3 The Madden-Julian Oscillation (MJO) was in Phase 1 and became insignificant towards the last week of the month. The MJO did not have a significant impact on the weather over the region during the past fortnight.

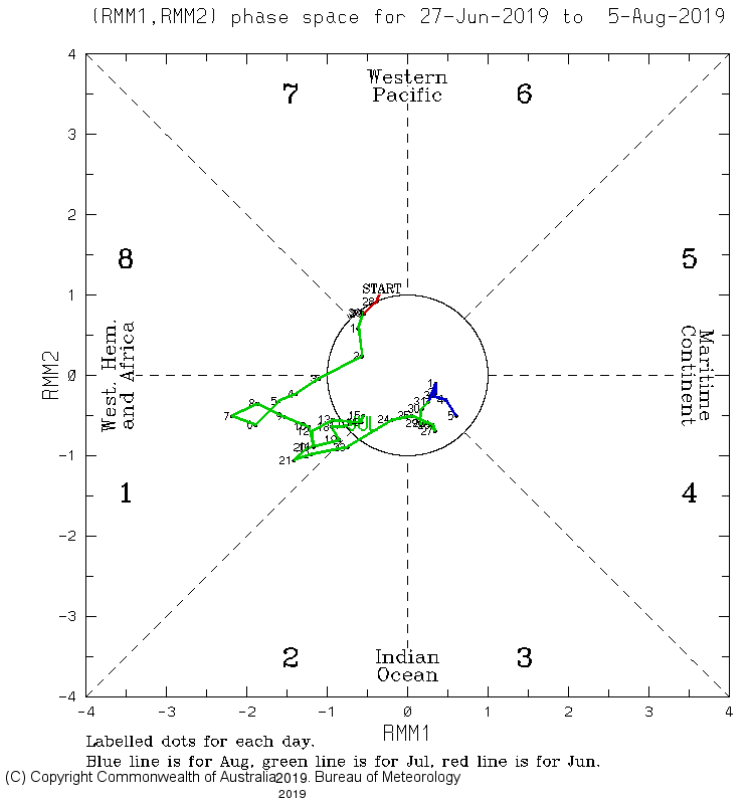

Figure 5 The MJO phase diagram (green for July 2019). The diagram illustrates the movement of the MJO through different phases, which correspond to different locations along the equator. The distance of the index from the centre of the diagram is correlated with the strength of MJO. When the index falls within the circle, the MJO is considered weak or indiscernible. (Source: Bureau of Meteorology)

1.4 In the tropical Pacific Ocean, there was further cooling of the surface and there was no significant atmospheric coupling. The El Niño – Southern Oscillation (ENSO) remained neutral in the second half of July 2019.

2. Review of Land/Forest Fires and Smoke Haze Situation

2.1 In the second half of July 2019, dry weather persisted in the southern ASEAN region. This contributed to a further escalation of hotspot activities. Persistent hotspot clusters with smoke plumes and haze were observed, particularly in central and southern Sumatra, and in Kalimantan. Some of the smoke haze from hotspots in West Kalimantan was observed to be blown by the prevailing winds toward Sarawak. Smoke haze from hotspots in Riau, central Sumatra were observed to be blown toward Peninsular Malaysia. In the northern ASEAN region, hotspot activities were generally subdued by the prevailing rainy weather.

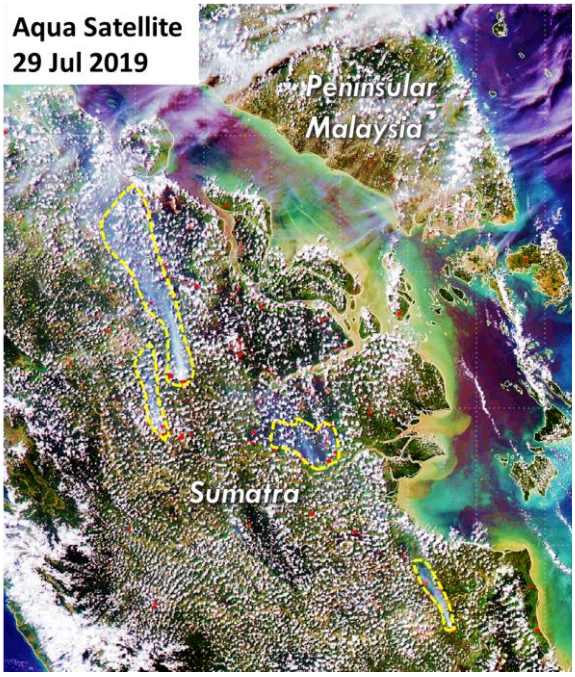

Figure 6 Persistent hotspot clusters with smoke haze (yellow dotted lines) in Sumatra

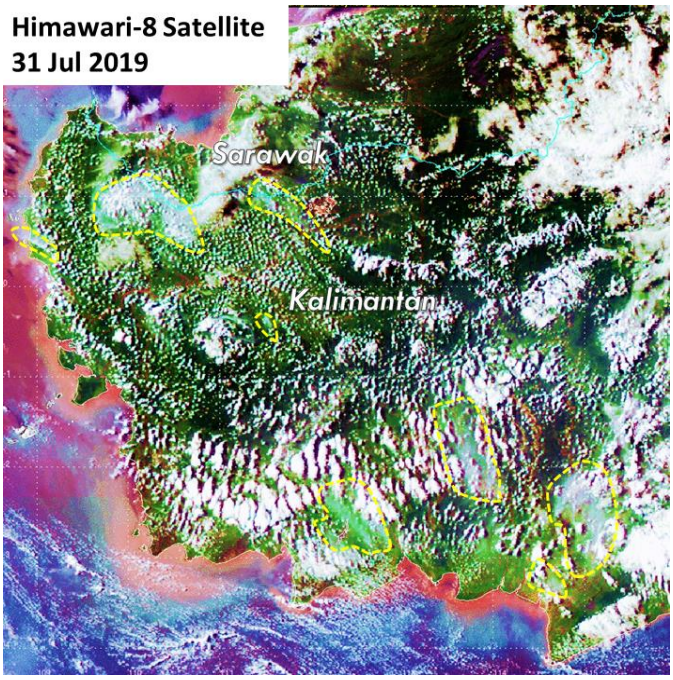

Figure 7 Smoke haze (yellow dotted lines) from hotspots in parts of Kalimantan. Some haze from West Kalimantan blown toward Sarawak.