UPDATE OF REGIONAL WEATHER AND SMOKE HAZE (Second Fortnight of Aug 2018)

1. Review of Regional Weather Conditions for Second Fortnight of August 2018

1.1 Southwest Monsoon conditions prevailed in the second fortnight of August 2018. During the period, rainy weather persisted over most parts of the northern ASEAN region. For the northern parts of Myanmar, Lao PDR and Vietnam and parts of the Philippines, above-average rainfall was recorded.

1.2 In the southern ASEAN region, Sumatra and Kalimantan experienced drier conditions during the first half of the fortnight. This was followed by a gradual increase of shower activities in the latter half of the fortnight. The Java region remained generally dry throughout the period.

1.3 The rainfall distribution and the percent of normal rainfall for the second fortnight of August 2018 are shown in Figure 1 and 2.

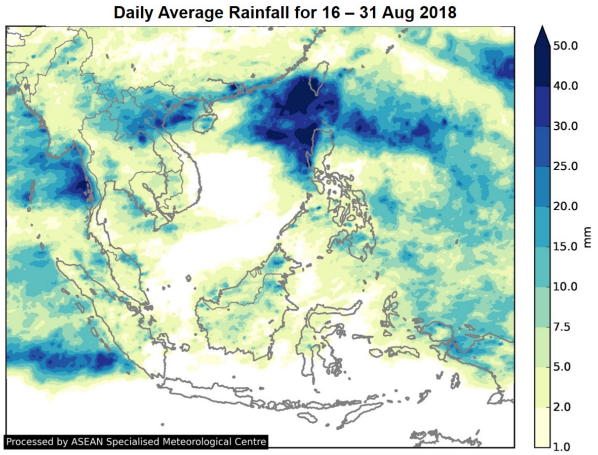

Figure 1: Daily average rainfall for the ASEAN region in the second fortnight of August 2018. (Source: JAXA Global Satellite Mapping of Precipitation)

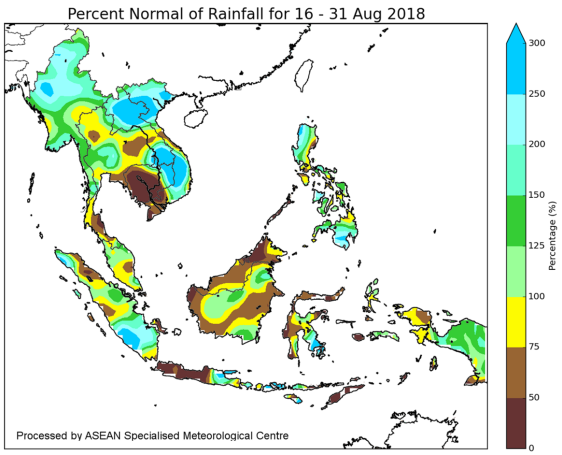

Figure 2: Percentage of Normal Rainfall for 16 – 31 August 2018. The rainfall data may be less representative for areas with a less dense rainfall network. (Source: IRI NOAA/NCEP CPC Unified Precipitation Analyses)

1.4 Stronger-than-usual southwesterly winds prevailed over the northern ASEAN region. In the southern ASEAN region, there were no significant wind anomalies observed, and the prevailing winds generally blew from the southeast or southwest. Figure 3 shows the average and anomalous winds at 5000 feet.

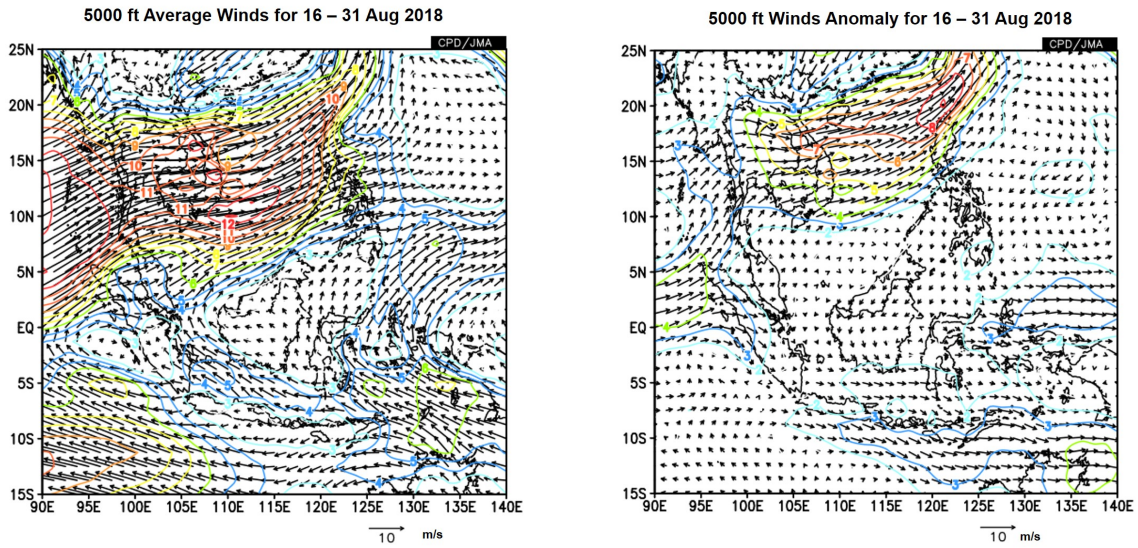

Figure 3: 5000 ft average winds (left) and anomaly (right) for 16 - 31 August 2018. (Source: JMA)

1.5 The El Niño-Southern Oscillation (ENSO) remained in the neutral state (neither El Niño nor La Niña), and other atmospheric indicators continued to show neutral conditions.

1.6 The Madden Julian Oscillation (MJO)[1], which started in Phase 6, weakened and became non-discernible throughout the review period. The weakening of the MJO Phase 6 partly contributed to the cessation of drier conditions over the southern ASEAN region in the second fortnight of August 2018.

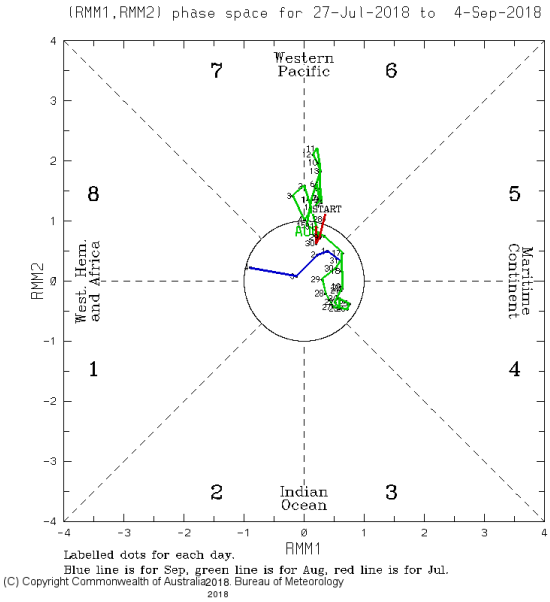

Figure 4: The MJO phase diagram for Aug 2018 (green). The diagram illustrates the movement of the MJO through different phases, which correspond to different locations along the equator. The distance of the index from the centre of the diagram is correlated with the strength of MJO. When the index falls within the circle, the MJO is considered weak or indiscernible. (Source: Bureau of Meteorology)

[1] The MJO is characterised by an eastward propagation of clouds and rainfall over the tropics with an average cycle of 30 to 60 days. The MJO is more prominent between the Indian and western Pacific Ocean, and consists of two phases – an enhanced rainfall (convection) phase and a suppressed rainfall phase.

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

2.1 Hotspot activities remained subdued in the northern ASEAN region due to rainy weather.

2.2 In the southern ASEAN region, there were significant hotspot activities observed in Riau, Sumatra and West Kalimantan during the third week of August 2018. On 16 August 2018, visible smoke haze from fire hotspots in Riau, central Sumatra spread across the Strait of Malacca, and brought hazy conditions to parts of Peninsular Malaysia. The return of shower activities over the following days helped to improve the haze situation in Riau Province.

2.3 The hotspot activities in Kalimantan persisted for a longer period than that in Riau, central Sumatra due to an extended period of dry weather conditions over the southern half of Borneo island. Hotspots with moderate to dense smoke haze were detected in West, Central and South Kalimantan. Smoke haze from the persistent hotspots in West Kalimantan reduced visibility in Pontianak, West Kalimantan to 2 km, and was blown by the prevailing winds to affect parts of western Sarawak. In the last week of August 2018, increased shower activities over Kalimantan helped to subdue the hotspot activities there and brought some relief to the haze situation in Kalimantan and Sarawak.

2.4 Figures 5 - 9 show the satellite images over the ASEAN region in the second fortnight of August 2018.

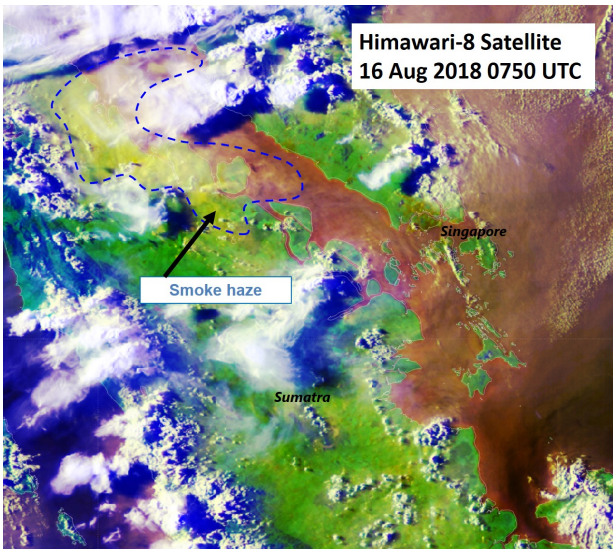

Figure 5: Himawari-8 satellite image on 16 Aug 2018 shows moderate smoke haze from Riau, Sumatra spread across the Strait of Malacca.

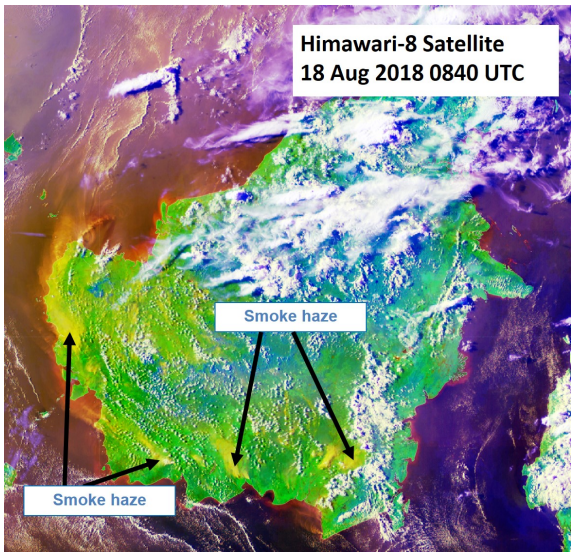

Figure 6: Himawari-8 satellite image on 18 Aug 2018 shows moderate to dense smoke haze from fire hotspots detected in several parts of Kalimantan.

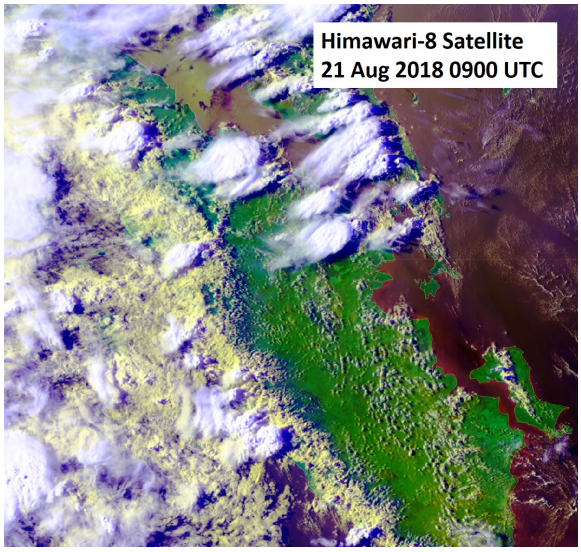

Figure 7: Himawari-8 satellite image on 21 Aug 2018 shows the return of shower activities that helped to alleviate the haze situation in Sumatra and Peninsular Malaysia.

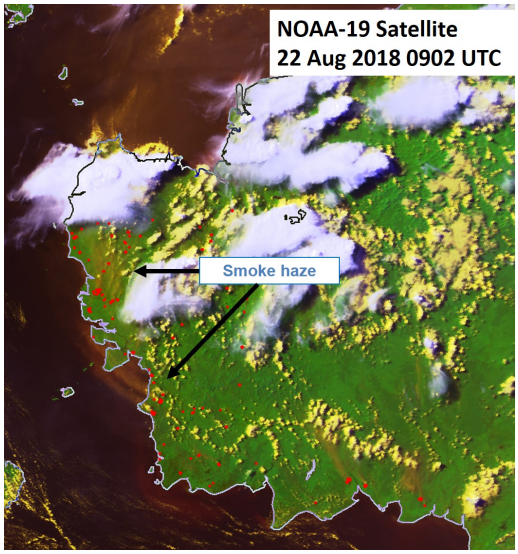

Figure 8: Himawari-8 satellite image on 22 Aug 2018 shows fire hotspots and smoke haze in Kalimantan.

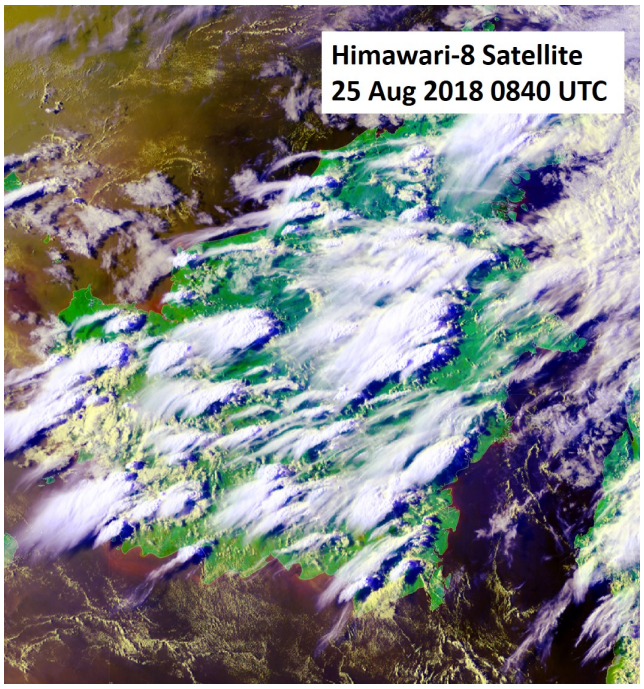

Figure 9: Himawari-8 satellite image on 25 Aug 2018 shows widespread showers over Kalimantan which helped subdue hotspot activities there.