UPDATE OF REGIONAL WEATHER AND SMOKE HAZE August 2016

1. Review of Regional Weather Conditions in July 2016

1.1 Southwest Monsoon conditions prevailed in July 2016, and the low level winds in the region blew predominantly from the southeast or southwest. The monsoon rain belt was over the northern ASEAN region in particular in the first half of July 2016 which brought increased shower activities to the northern ASEAN region. In the southern ASEAN region during this period, dry weather conditions were experienced. In the second half of July 2016, with the southward migration of the monsoon rain belt to the near-equator region, several parts of the southern ASEAN region including Indonesia, Malaysia and Singapore experienced wet weather conditions.

1.2 Typhoon Nerpatak, the first typhoon in 2016 over the Western Pacific region, was categorised as a tropical depression on 2 July 2016, east of the Philippines. It intensified into a super typhoon on 6 July 2016 as it tracked north-west towards Taiwan. While Typhoon Nerpatak did not make landfall in the ASEAN region, its rainbands brought widespread showers and strong winds to the northern parts of ASEAN region.

1.3 For July 2016, near-normal to above-normal rainfall was received in most parts of the northern ASEAN region. For the southern ASEAN region, the southern and eastern parts of the Indonesia Archipelago received well above-normal rainfall while areas including Malaysia, Sumatra and Kalimantan received near-normal to above-normal rainfall. The regional rainfall distribution for July 2016 is shown in Figure 1.



Figure 1: Percentage of Normal Rainfall for July 2016. The rainfall data may be less representative for areas with low density of rainfall network.

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

2.1 In July 2016, it rained on most days for both the northern and southern ASEAN regions. In early July 2016, a brief period of dry weather conditions in parts of the southern ASEAN region led to an increase in hotspot activities over Sumatra. Smoke plumes were observed to emanate from some of the hotspots detected. Nonetheless, the hotspots were mostly short-lived and were mainly due to localised burning activities.

2.2 An increase in shower activities in the latter half of July 2016 brought a reduction to the number of hotspots detected over Sumatra and Kalimantan. There was no occurrence of transboundary smoke haze in July 2016. Some of the hotspot activities in the ASEAN region during July 2016 are shown in Figures 2A – 2E.



Figure 2A: NOAA-19 satellite image on 1 July 2016 shows isolated hotspots detected in northern and central Sumatra.



Figure 2B: NOAA-19 satellite image on 4 July 2016 shows showers over parts of the northern ASEAN region.



Figure 2C: NOAA-19 satellite image on 11 July 2016 shows few hotspots in central part of Peninsular Malaysia.



Figure 2D: NOAA-19 satellite image on 14 July 2016 shows isolated hotspots detected in West Kalimantan during a brief period of dry weather conditions.



Figure 2E: NOAA-19 satellite image on 20 July 2016 shows hotspot activities subdued as showers returned to the near-equatorial region in the second half of July 2016.

- 2.3 The hotspot charts for July 2016 for
 - a) Cambodia, Myanmar, Thailand, Lao PDR and Vietnam;
 - b) Sumatra, Borneo and Peninsular Malaysia;

are shown in Figures 2F to 2G respectively.



Figure 2F: Hotspot Counts in Cambodia, Lao PDR, Thailand, Vietnam, Myanmar for July 2016



Fig 2G: Hotspot Counts in Sumatra, Borneo and Peninsular Malaysia for July 2016

3. Status of El Niño/La Niña

3.1 In July 2016, the sea surface temperature (SST) anomaly in the equatorial Pacific Ocean was in Neutral conditions, i.e. neither El Niño nor La Niña. Key atmospheric variables (cloud and wind patterns) over the equatorial Pacific had also indicated Neutral conditions.

3.2 While Neutral conditions currently prevail in the equatorial Pacific, latest assessment of international climate models from major climate centres suggest a moderate 60% chance of La Niña conditions developing during the October-December season.

3.3 The ASEAN region is currently in the Southwest Monsoon season (June-September/early October), where the La-Niña is known to have considerable impact (wetness) on the western part of the Maritime Continent.

4. Outlook

4.1 The prevailing Southwest Monsoon season is expected to prevail into September 2016. During the Southwest Monsoon season, the low level prevailing winds in the ASEAN region are expected to blow mostly from the southeast or southwest. While La Niña conditions are favored over Neutral conditions in the second half of 2016, periods of dry weather conditions are still likely which could lead to an escalation in hotspot activities in the fire-prone provinces of Sumatra and Kalimantan. Vigilance should be stepped up for any escalation of fire activities during periods of dry weather conditions.

4.2 For the upcoming August-September-October season, slightly above-normal to abovenormal rainfall is expected for most parts of the Indonesian Archipelago, except for central and northern Sumatra where rainfall is expected to be near-normal. In the northern ASEAN region, near-normal rainfall is expected. The rainfall outlooks for the ASEAN region for August 2016, September 2016 and October 2016 are shown in Figures 4A - 4C.





Figures 4A-4C: Rainfall Outlook for the ASEAN Region – August 2016 (4A: top left), September 2016 (4B: top right), and October 2016 (4C: bottom left)