

UPDATE OF REGIONAL WEATHER AND SMOKE HAZE October 2016

1. Review of Regional Weather Conditions in September 2016

1.1 Southwest Monsoon conditions continued to prevail in September 2016, and the prevailing winds in the region blew mainly from the southwest or west. The monsoon rain belt was north of the Equator between latitudes 5° N and 15° N on most days in September 2016.

1.2 During the review period, showers affected most parts of the northern ASEAN region. On 12 September 2016, Tropical Depression “Rai”, which developed over the South China Sea, east-northeast of Ho Chi Minh City, made landfall in central Vietnam. “Rai” brought heavy rainfall to the Mekong sub-region, in particular over Vietnam and northern Thailand, causing the rivers to break its banks which led to severe flooding and loss of 12 lives. Over the southern ASEAN region, it was generally wet with occasional brief periods of dry weather conditions. This wetter than normal conditions is atypical of the traditional dry season of the southern ASEAN region in September 2016.

1.3 For September 2016, most parts of the northern ASEAN region except Cambodia and southern Vietnam recorded near-normal to above-normal rainfall. In the southern ASEAN region, near-normal rainfall was recorded in Malaysia, Brunei Darussalam and most parts of Sumatra. Above-normal rainfall prevailed over large areas of the Indonesian Archipelago, including southern Sumatra, Kalimantan and Java. The regional rainfall distribution for September 2016 is shown in Figure 1.

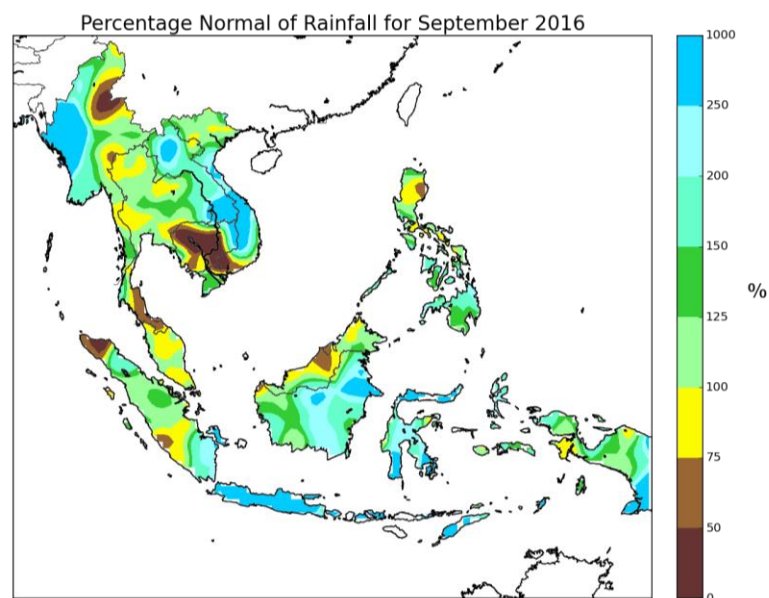


Figure 1: Percentage of Normal Rainfall for September 2016. The rainfall data may be less representative for areas with low density of rainfall network.

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

2.1 In September 2016, shower activities in the northern ASEAN region continued to subdue the hotspot activities there. For the southern ASEAN region, hotspot activities in the near-

equatorial region were mostly subdued due to the higher than usual shower activities in the region.

2.2 In mid-September 2016, the influence of Super Typhoon Meranti over the western Pacific Ocean brought drier weather conditions over parts of Kalimantan. This led to an escalation of hotspot activities in West Kalimantan where more than 100 hotspots were detected between 12 and 14 September 2016. Visible smoke plumes and haze were observed mainly in West Kalimantan over the two days. The dry weather conditions were short-lived and an improvement in the hotspot and haze situation was experienced in the subsequent days as shower activities returned to Kalimantan.

2.3 In the last week of September 2016, the brief periods of dry weather conditions in parts of Sumatra brought an increase in hotspot activities but there were no significant smoke plumes or haze observed in the vicinity of the hotspots. Hotspot activities over parts of the ASEAN region during September 2016 are shown in Figures 2A – 2E.

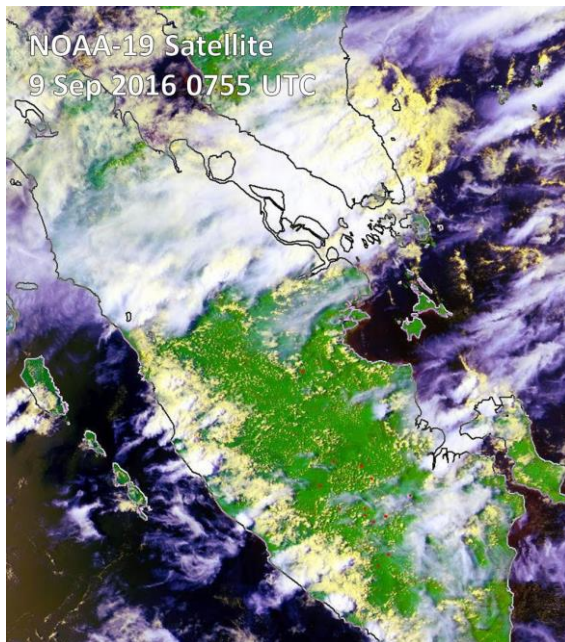


Figure 2A: NOAA-19 satellite image on 9 September 2016 shows hotspot activities in central Sumatra subdued by occurrence of shower. Isolated hotspots were detected in South Sumatra.

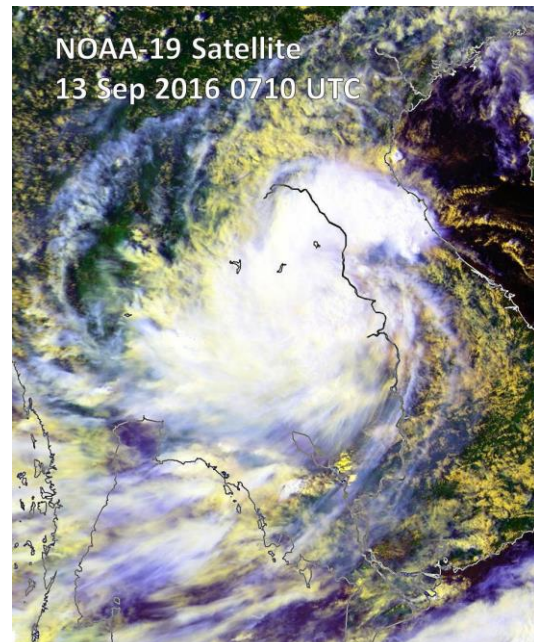


Figure 2B: NOAA-19 satellite image on 13 September 2016 shows the presence of Tropical Depression Rai over northern Vietnam and the eastern part of Thailand and Lao PDR. Widespread showers affected most parts of the Mekong sub-region

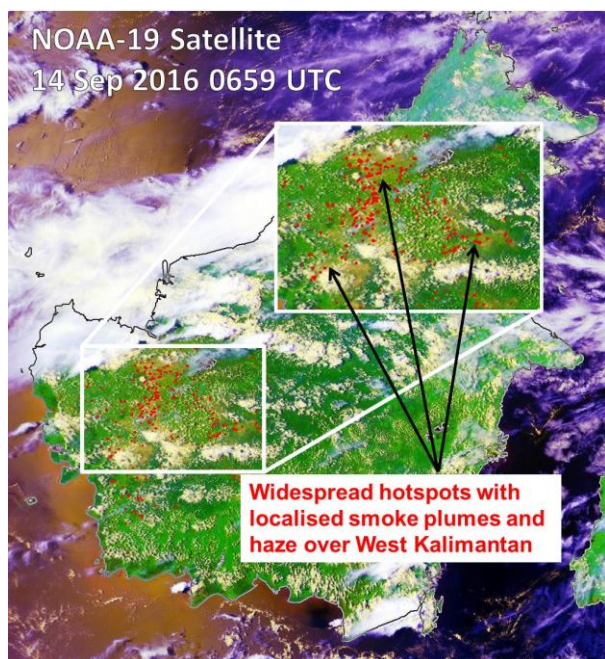


Figure 2C: NOAA-19 satellite image on 14 September 2016 shows widespread hotspot activities in West Kalimantan. Few clusters of hotspots with localised smoke plumes and haze were observed.

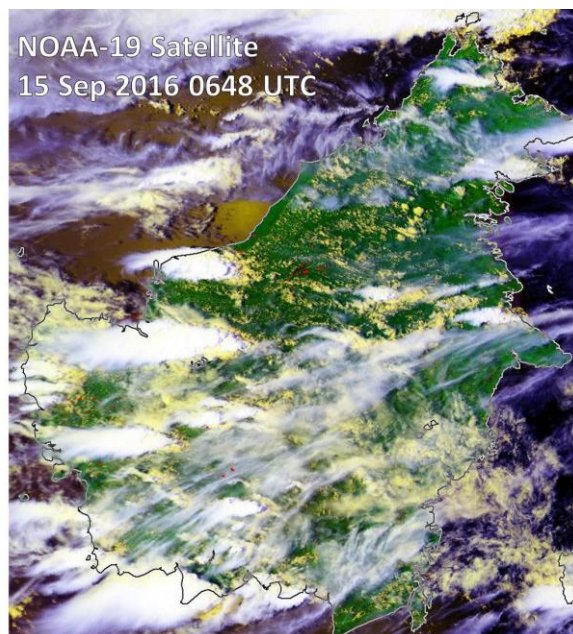


Figure 2D: NOAA-19 satellite image on 15 September 2016 shows an increase in shower activities over Kalimantan which helped to subdue hotspot activities that had been persisting for the past few days.

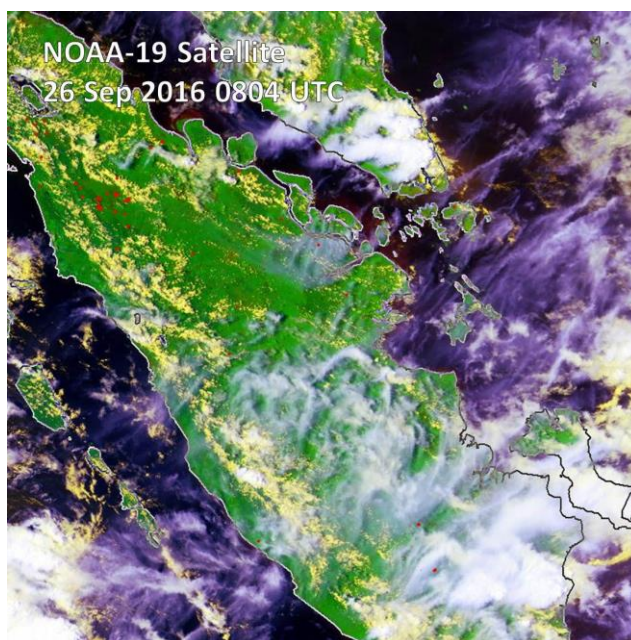


Figure 2E: NOAA-19 satellite image on 26 September 2016 shows hotspots in Sumatra, mostly in North Sumatra.

2.4 The hotspot charts for September 2016 for

- a) Cambodia, Myanmar, Thailand, Lao PDR and Vietnam;
 - b) Sumatra, Borneo and Peninsular Malaysia;
- are shown in Figures 2F to 2G respectively.

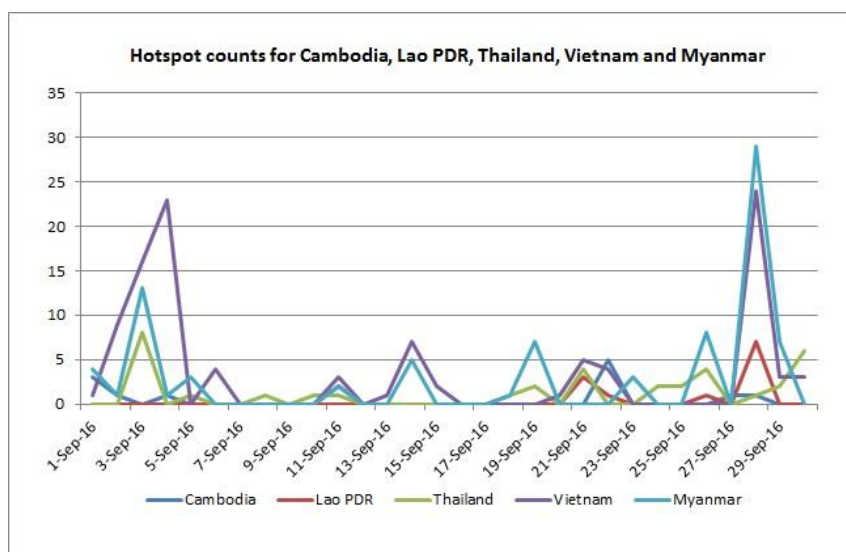


Figure 2F: Hotspot Counts in Cambodia, Lao PDR, Thailand, Vietnam, Myanmar for September 2016.

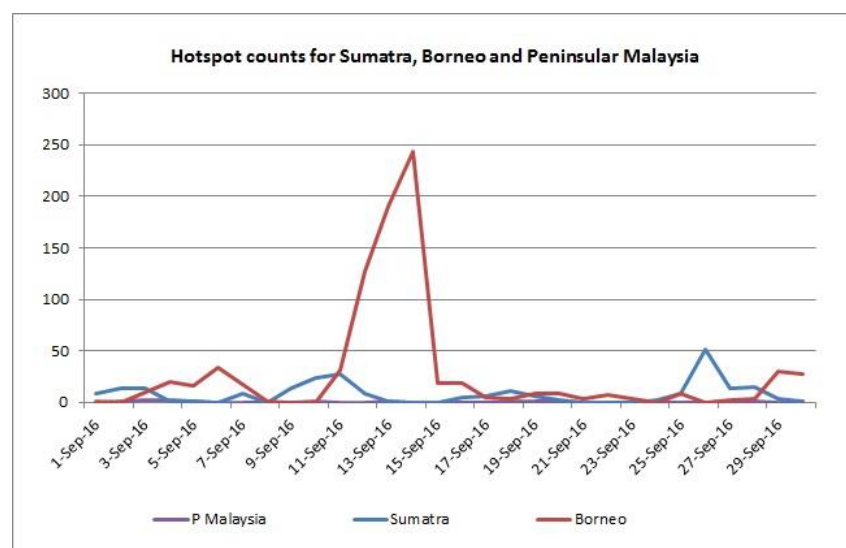


Fig 2G: Hotspot Counts in Sumatra, Borneo and Peninsular Malaysia for September 2016.

3. Status of El Niño/La Niña

3.1 In September 2016, the equatorial Pacific Ocean sea surface temperature (SST) anomaly was near the La Niña threshold. However, the atmospheric variables (cloud and wind patterns) have yet to support weak La Niña conditions. There remains limited interaction between the atmospheric and oceanic conditions.

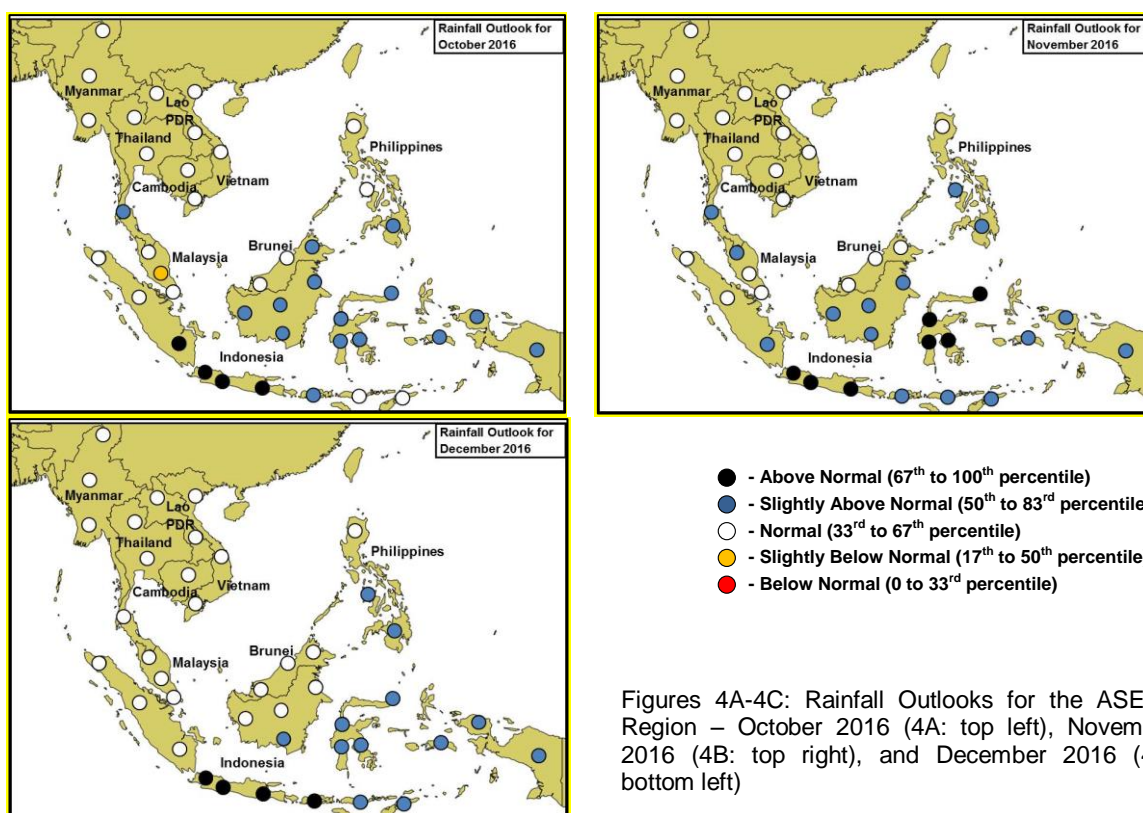
3.2 Experts' assessment of international climate models suggests that there is about 60% chance of La Niña conditions developing in the October – December season and it is likely to be only weak or borderline.

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 conditions are expected to weaken and gradually give way to Inter-monsoon conditions around mid-October 2016. The Inter-Monsoon season is usually characterised by light winds and shower activities interspersed with brief periods of dry weather conditions. For the northern ASEAN region, the current rainy season is expected to gradually ease over the next one or two months and transition to the traditional dry season by November 2016. While an increase of shower activities are expected over most parts of the southern ASEAN region during this period, sporadic hotspot activities may still occur over the fire-prone province of Sumatra and Kalimantan during brief periods of drier weather. The hotspot activities are expected to gradually ease from November 2016.

4.2 For the upcoming October-November-December season, near-normal rainfall is expected for most parts of the northern ASEAN region, except in parts of Thailand, central and southern Philippines where above-normal rainfall is forecast. For the near-equatorial region including Malaysia, Singapore, Brunei Darussalam, Sumatra and Kalimantan, near-normal to above-normal rainfall are expected. Above-normal rainfall is forecast across large parts of the Indonesian Archipelago in 4Q2016. The rainfall outlooks for the ASEAN region for October 2016, November 2016 and December 2016 are shown in Figures 4A – 4C.



Figures 4A-4C: Rainfall Outlooks for the ASEAN Region – October 2016 (4A: top left), November 2016 (4B: top right), and December 2016 (4C: bottom left)

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