### UPDATE OF REGIONAL WEATHER AND SMOKE HAZE FOR AUGUST 2015

## 1. Review of Regional Weather Conditions in July 2015

1.1 The Southwest Monsoon conditions in the region continued to prevail in July 2015. While the northern ASEAN region is in its wet season, and the monsoonal rainband continue to lie mostly between latitudes 10 and 15 degrees North, some parts of the region experienced drier than usual conditions. A shift of the monsoon rainband to the near-equatorial region on several days in mid-July 2015 brought shower activities to the southern ASEAN region, in particular over Peninsular and West Malaysia, Sumatra and Kalimantan. Dry weather conditions continue to persist in Java and the eastern archipelago of Indonesia.

1.2 On 5 July 2015, Tropical Storm Linfa made landfall over the northern Luzon Island of the Philippines, bringing heavy rainfall that resulted in floods and landslides in northern Luzon. Linfa continued on its northwestward track into the South China Sea before making landfall in the southern parts of Guangdong province, China.

1.3 Severe drought was experienced in Thailand due to a prolonged drier than usual weather in the months leading up to July. A respite to the drought situation arrived in mid-July 2015 with increased shower activities over Thailand. On the contrary, heavy monsoonal rain bands associated with Cyclone Komen brought widespread flooding to many parts of Myanmar around end-July 2015. More than 260,000 people across 12 of Myanmar's 14 states were affected by severe floods.

1.4 The southern ASEAN region continued to receive lower than normal rainfall in July which could be partly due to the prevailing El-Nino conditions. For the northern ASEAN region, well-above normal rainfall was received in Myanmar and northern Philippines. Below-normal to near-normal rainfall was received for the rest of the northern ASEAN region. The regional rainfall distribution for July 2015 is shown in Figure 1A.



#### Percentage of Normal Rainfall for July 2015

Figure 1A: Percentage of Normal Rainfall for July 2015

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

2.1 In the northern ASEAN region, shower activities over most parts of the region helped to suppress hotspot activities.

2.2 In the southern ASEAN region, elevated hotspot activities were observed mainly in Riau and Jambi provinces of Sumatra since early-July 2015. Shower activities on several days in mid-July 2015 helped to subdue the hotspot activities. Around end-July 2015, a return of drier weather conditions saw an increase in burning activities, and smoke plumes were seen emanating from various hotspot clusters in Sumatra. Most of the fires were short-lived, and the region was not affected by significant transboundary haze.

2.3 In Kalimantan, there were persistent shower activities in the first half of July 2015. However by mid-July 2015, dry weather conditions emerged and contributed to an increase of hotspot activities in parts of Kalimantan. Moderate haze and smoke plumes were observed near the hotspots for the several days in the second half of July.



Figure 2A: NOAA-18 satellite image on 3 July shows hotspot activities with smoke plumes and haze in central and southern Sumatra



Figure 2B: NOAA-18 satellite picture on 13 July 2015 shows that hotspot activities were subdued by shower activities associated with a Sumatra Squall



Figure 2C: NOAA-18 satellite picture on 23 July 2015 shows the recurrence of hotspots and localised smoke haze in Sumatra.



Figure 2C: NOAA-18 satellite picture on 23 July 2015 shows the emergence of scattered hotspots in central Kalimantan



Figure 2D: NOAA-18 satellite picture on 31 July 2015 shows widespread shower activities over many parts of Myanmar

- 2.4
- The hotspot charts for July 2015 for a) Cambodia, Myanmar, Thailand, Lao PDR and Vietnam;
  - Sumatra, Borneo and Peninsular Malaysia; and b)
  - Java, Sulawesi and the Philippines C)

are shown in Figures 2E to 2G respectively.



Figure 2E: Hotspot Counts in Cambodia, Lao PDR, Thailand, Vietnam, Myanmar for July 2015



Fig 2F: Hotspot Counts in Sumatra, Borneo and Peninsular Malaysia for July 2015



Figure 2G: Hotspot Counts in Java, Sulawesi, Philippines for July 2015

## 3. Status of El Niño/La Niña\*

3.1 The tropical Pacific Ocean's sea-surface temperature (SST) continues to warm in July 2015. Both its atmosphere and ocean conditions are at moderate El Nino levels.

3.2 The atmospheric patterns over the tropical Pacific Ocean continue to support the El Niño pattern, including weakened trade winds and excess rainfall in the eastern tropical Pacific Ocean. International climate models and expert opinion predict a high likelihood (in excess of 80-90% chance) for this SST warming to continue into early-2016. Further strengthening of the El Niño is likely.

3.3 Typically the impact from El Niño for the Southeast Asia region is drier than average rainfall conditions, especially for the southern parts during June to October. More locally-specific impact differs from place to place and for different seasons.

3.4 The region is now in the Southwest Monsoon season (June – September), where El Niño is known to have considerable impact (dryness) on the western part of the Maritime Continent. Thus with the current El Niño developing conditions, the upcoming Aug-Sep-Oct season faces risk of extended periods of drier and warmer conditions in this part of Southeast Asia.

# 4. Outlook

4.1 The Southwest Monsoon is forecast to continue to persist over the next few months into mid-October 2015, with prevailing winds blowing from the southeast or southwest. Wet weather conditions will continue for most parts of the northern ASEAN region.

4.2 For the southern ASEAN region, the peak of the burning activities in the southern ASEAN region is usually in August and September. The prevailing El-Nino is projected to persist into early 2016, and is likely to strengthen in the coming months. This may exacerbate the dry weather conditions in the fire-prone provinces of Sumatra and

Kalimantan. Vigilance should be stepped up for any escalation of fire activities during the dry season.

4.3 Drier than usual weather conditions are forecast to continue for the southern ASEAN region, with slightly-below to below-normal rainfall expected for most parts of the region. For the northern ASEAN region, normal rainfall conditions are expected except in Vietnam and Lao PDR where slightly-below normal rainfall is expected. The rainfall outlooks for the ASEAN region from August 2015 to October 2015 are shown in Figures 4A -4C.







- Slightly Above Normal (50th to 83rd percentile)
- Normal (33<sup>rd</sup> to 67<sup>th</sup> percentile)
  - Slightly Below Normal (17th to 50th percentile)
- Below Normal (0 to 33rd percentile)

Figure 4: Rainfall Outlook for the ASEAN Region – August 2015 (top left), September 2015 (top right), and October 2015 (bottom left)