

UPDATE OF REGIONAL WEATHER AND SMOKE HAZE FOR FEBRUARY 2015

1. Review of Regional Weather Conditions in January 2015

1.1 Northeast Monsoon conditions prevailed in January 2015. In the northern ASEAN region, dry weather conditions continued to affect the Mekong Sub-region of Cambodia, Lao PDR, Myanmar, northern Thailand and Vietnam. In mid-January 2015, the monsoon rain-belt had moved south of the equator marking the onset of the dry phase of the Northeast Monsoon season in the southern ASEAN region. Generally cooler, drier and windy weather conditions were experienced in Sumatra, Peninsula Malaysia and Singapore while wet weather conditions were felt in Kalimantan, the Java islands as well as parts of Sabah and Sarawak in Malaysia. In the last week of January 2015, a monsoon surge brought heavy rains and caused floods in the states of Sabah and Sarawak in Malaysia.

1.2 On 13 January 2015, Typhoon “Mekkhala” developed over the Western Pacific Ocean, and continued its westward track affecting the eastern part of Luzon and Visayas in the Philippines a few days later. Typhoon “Mekkhala” made landfall near eastern Samar, the Philippines on 17 January 2015, and weakened rapidly into a tropical depression as it moved north-eastwards, dissipating over water on 21 January 2015 away from Luzon Islands.

1.3 In January 2015, less than 75% of normal rainfall was received in most parts of northern ASEAN except in northern Thailand and southern parts of Vietnam, where more than 125% of normal rainfall was received. In most parts of the southern ASEAN region, less than 100% of normal rainfall was received. The regional rainfall distribution for January 2015 is shown in Fig. 1A.

Percentage of Normal Rainfall for January 2015

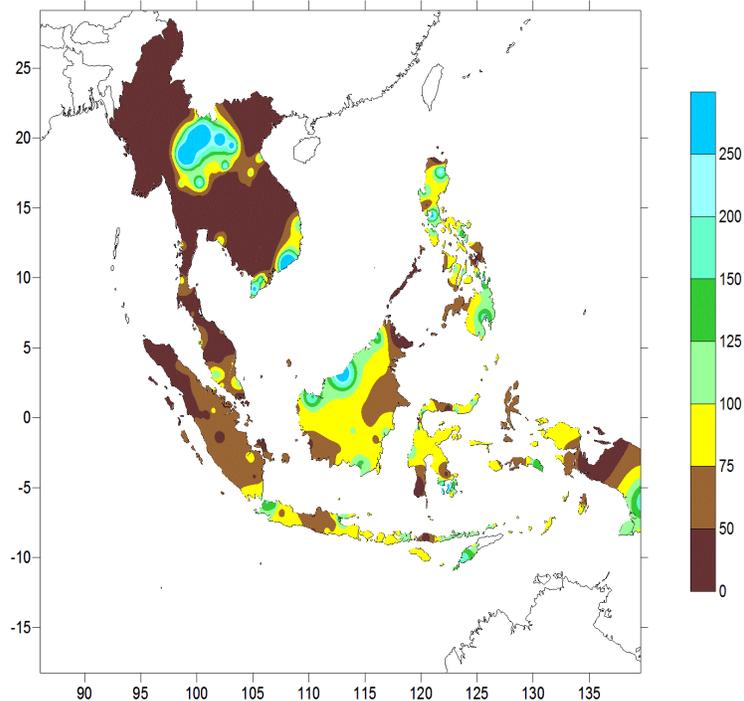


Fig. 1A: Percentage of Normal Rainfall for January 2015

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

2.1 In January 2015, the dry weather conditions led to an escalation of hotspot activities in the northern ASEAN region where scattered to widespread hotspots were observed on most days, in particular in Cambodia, central and northeastern Thailand and Lao PDR. Slight to moderate smoke haze was also observed on several occasions during the period.

2.2 In the southern ASEAN region, hotspot activities were mostly subdued by cooler and occasionally windy conditions. During brief periods of drier weather, sporadic hotspots were observed over central Sumatra and Peninsular Malaysia. Satellite images depicting some of the hotspot activities over the ASEAN region in January 2015 are shown in Figs. 2A to 2E.

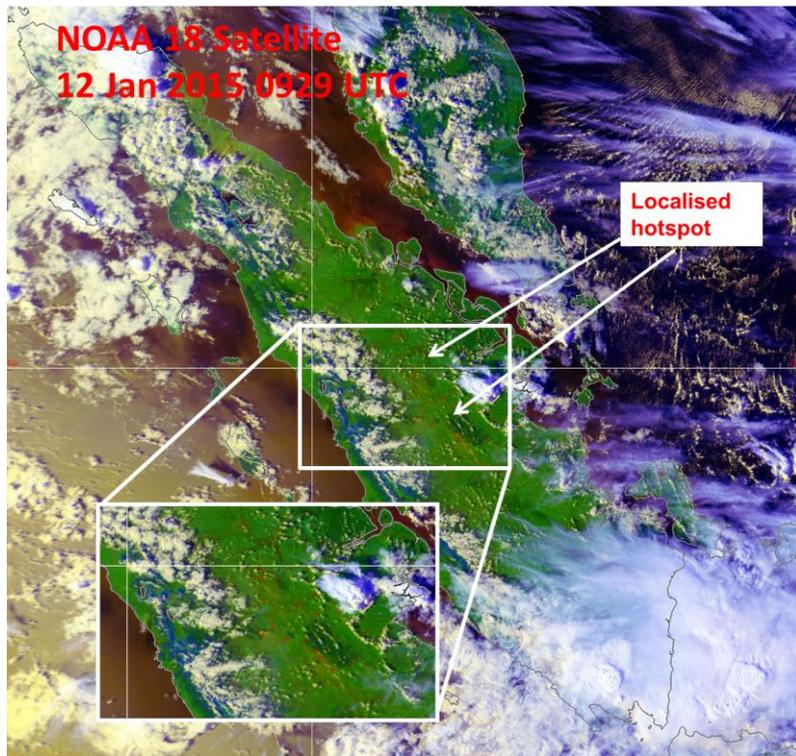


Fig. 2A: NOAA-18 satellite picture on 12 January 2015 shows isolated hotspots over central Sumatra during period of drier weather

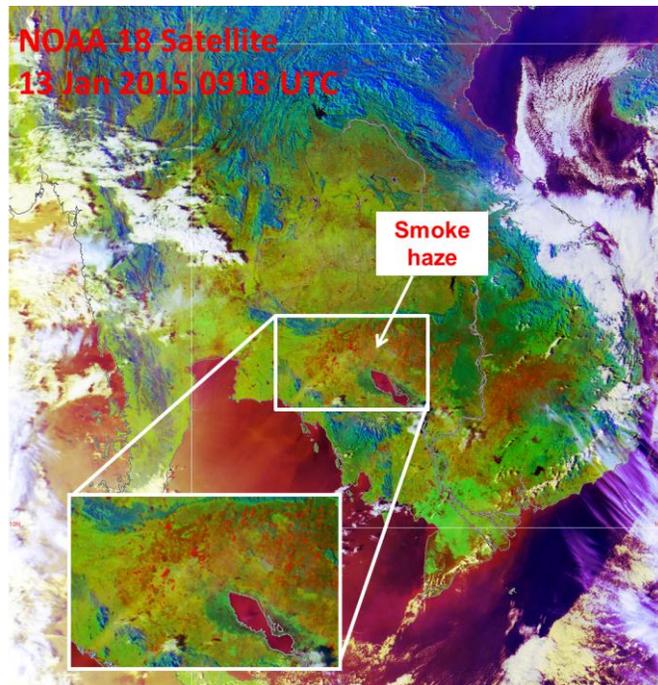


Fig. 2B: NOAA-18 satellite picture on 13 January 2015 shows smoke plumes emanating from a cluster of hotspots near the Thailand-Cambodian border

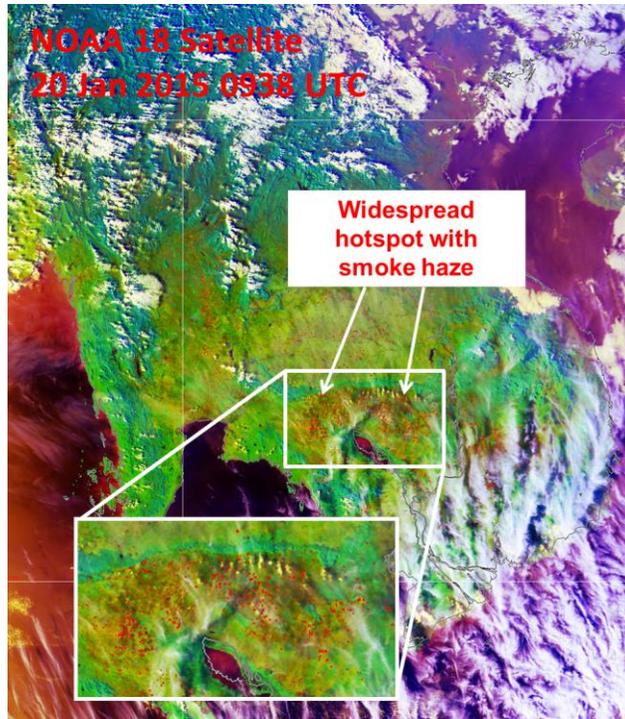


Fig. 2C: NOAA-18 satellite picture on 20 January 2015 shows widespread hotspot activities with moderate smoke haze observed in Cambodia

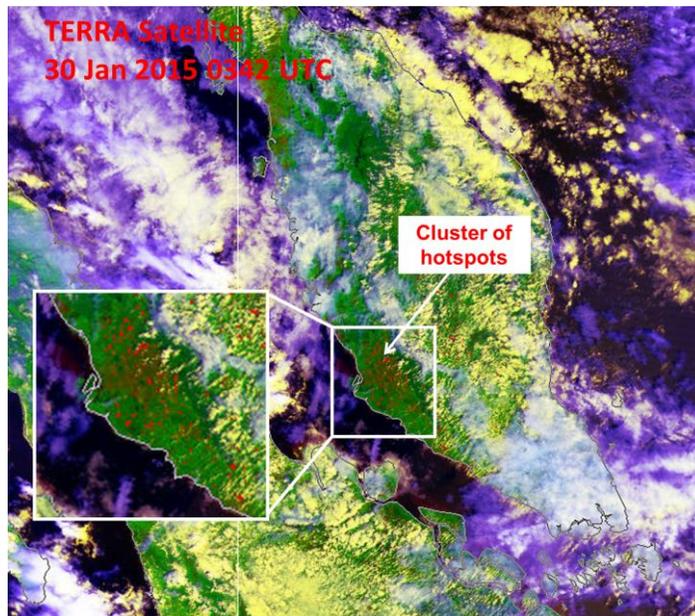


Fig. 2D: TERRA satellite picture on 30 January 2015 shows localised hotspot activities over central Peninsular Malaysia

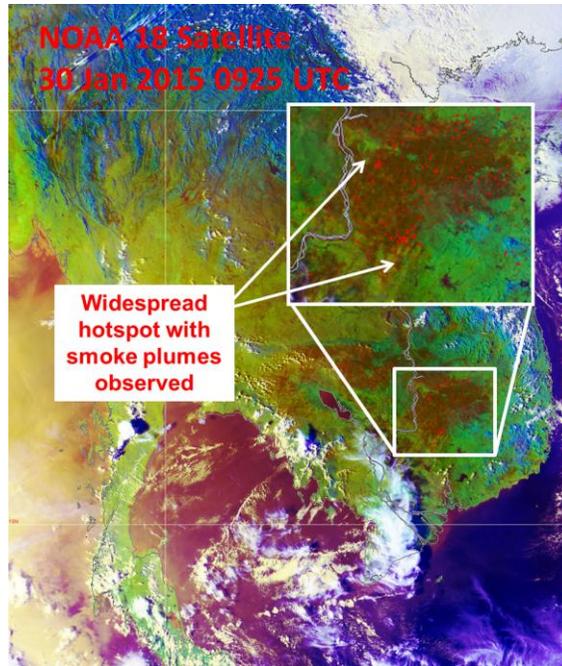


Fig. 2E: NOAA-18 satellite picture on 30 January 2015 shows widespread hotspots with smoke plumes clustered near the Vietnam-Cambodian border

2.3 The hotspot charts for January 2015 for
 a) Cambodia, Myanmar, Thailand, Lao PDR and Vietnam;
 b) Sumatra, Borneo and Peninsular Malaysia; and
 c) Java, Sulawesi and the Philippines
 are shown in Figs. 2F to 2H respectively.

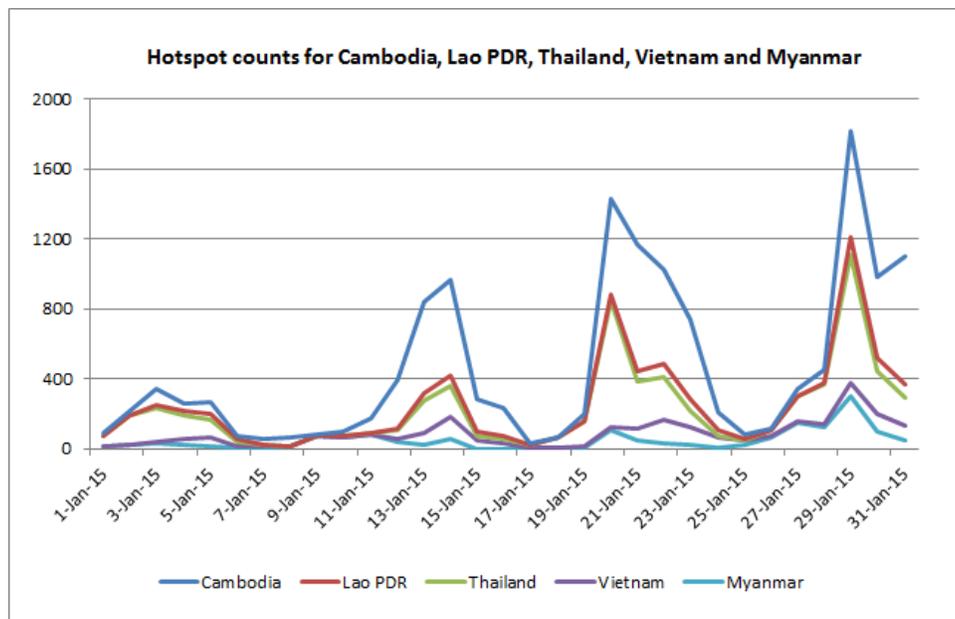


Fig. 2F: Hotspot Counts in Cambodia, Lao PDR, Thailand, Vietnam, Myanmar for January 2015

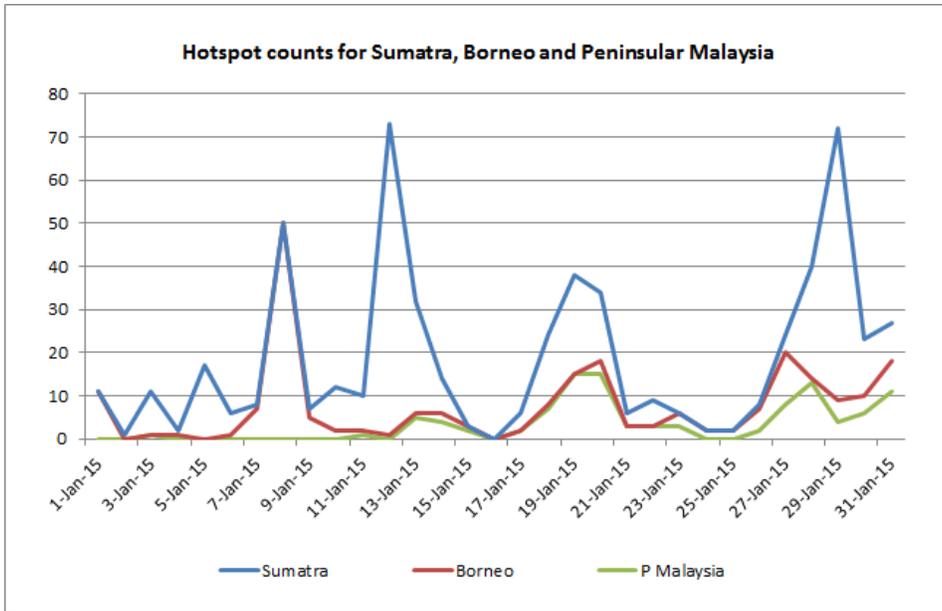


Fig 2G: Hotspot Counts in Sumatra, Borneo and Peninsular Malaysia for January 2015

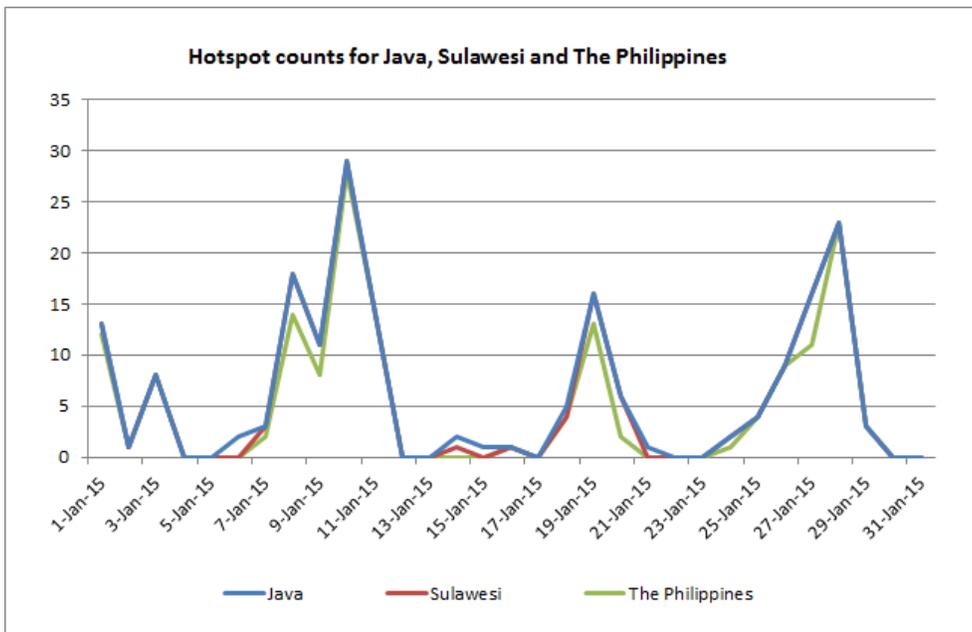


Fig. 2H: Hotspot Counts in Java, Sulawesi, Philippines for January 2015

3. Status of El Niño/La Niña*

3.1 The warming of the sea-surface temperatures over the Niño3.4 region of the tropical Pacific Ocean has eased in January 2015 (Figure 3A) with the anomaly value reduced considerably from 0.87 to 0.58 (Figure 3B). While the 3-month average Niño3.4 value of 0.81 is still within weak El Niño thresholds (0.5 – 1.0), the atmosphere has seen very little response so far in terms of the wind and convective cloud anomaly conditions over the tropical Pacific Ocean. Overall, the combined atmospheric and oceanic condition remains in neutral state.

3.2 Most models predict the SST anomalies over the tropical Pacific Ocean to be at weak El Niño or neutral levels in the next few months (Figure 3C). Based on climate models and expert assessment, there is less than 60% chance of a weak El Niño developing in the January-March season in progress (Figure 3D), with no elevated risk thereafter.

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 (Figure 3E). More locally-specific impact differs from place to place and for different seasons.

3.4 The region is now in the boreal winter monsoon season (Jan – Mar), where El Niño is not known to have much impact on the western part of the Maritime Continent (Figure), the possibility of a weak El Niño developing in the next one to two months do not pose significant risks of extended periods of drier and warmer conditions in this part of Southeast Asia.

** For El Niño/La Niña updates, ASMC assesses information provided by the World Meteorological Organization (WMO) and various international climate centres, such as the Climate Prediction Center (CPC) US, the Bureau of Meteorology (BoM) Australia, as well information from the International Research Institute for Climate and Society (IRI) which contains model outputs from various other centres around the world. For more information on El Niño/La Niña, please refer to the [FAQs website](#).*

Jan 2015

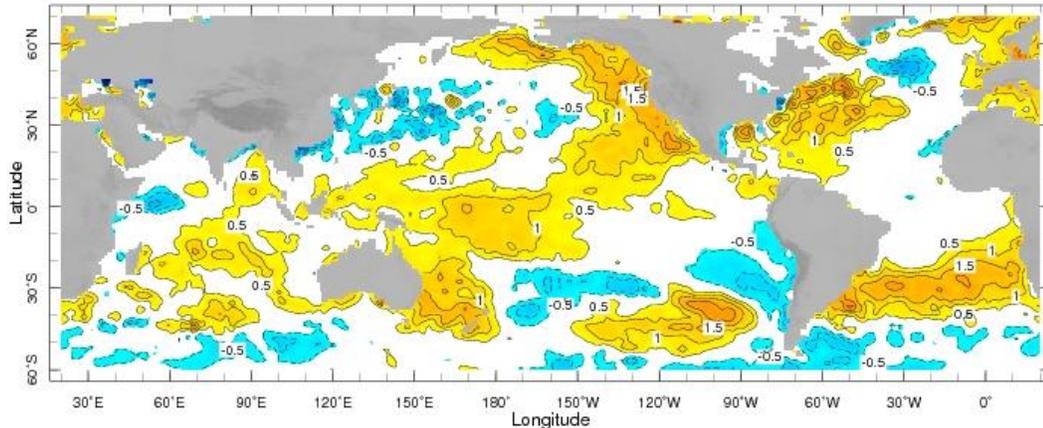


Fig. 3A: Warming of the tropical Pacific Ocean has eased over the Niño3.4 region (red box, 120°W-170°W and 5°S-5°N) in January 2015 (image credit: IRI Map Room). Yellow shades show regions of relative warming, while blue shades show regions of relative cooling with respect to 1971-2000 climatology for that month.

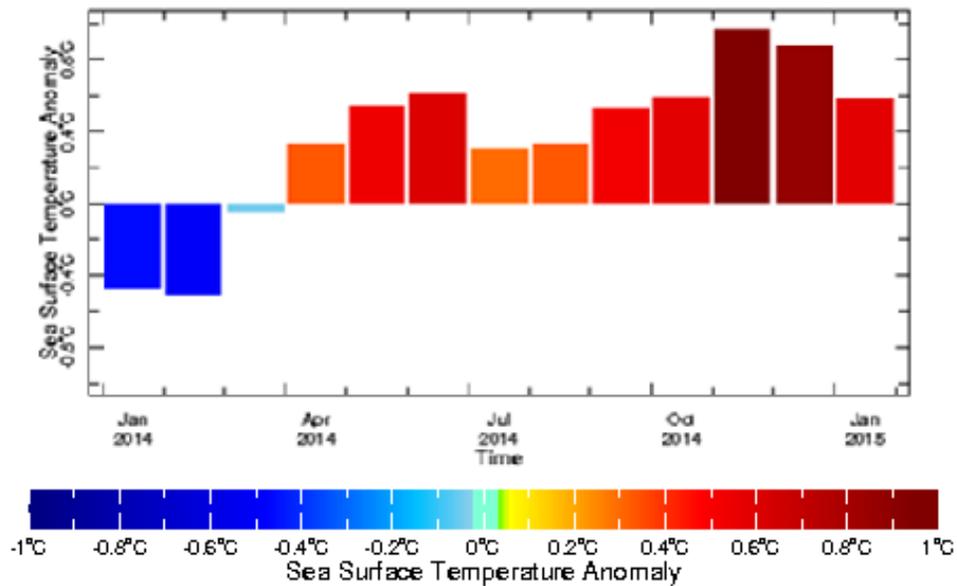


Fig. 3B: Monthly sea-surface temperature anomaly over the Niño3.4 region (120°W-170°W and 5°S-5°N) over the tropical Pacific Ocean from Jan 2014 (left) to Jan 2015 (right) (image credit: IRI Map Room). Sustained warming has been observed since Apr 2014, but the warming has eased recently. The 3-month average value has hit above 0.5, which is a threshold set to indicate El Niño conditions, for three consecutive months.

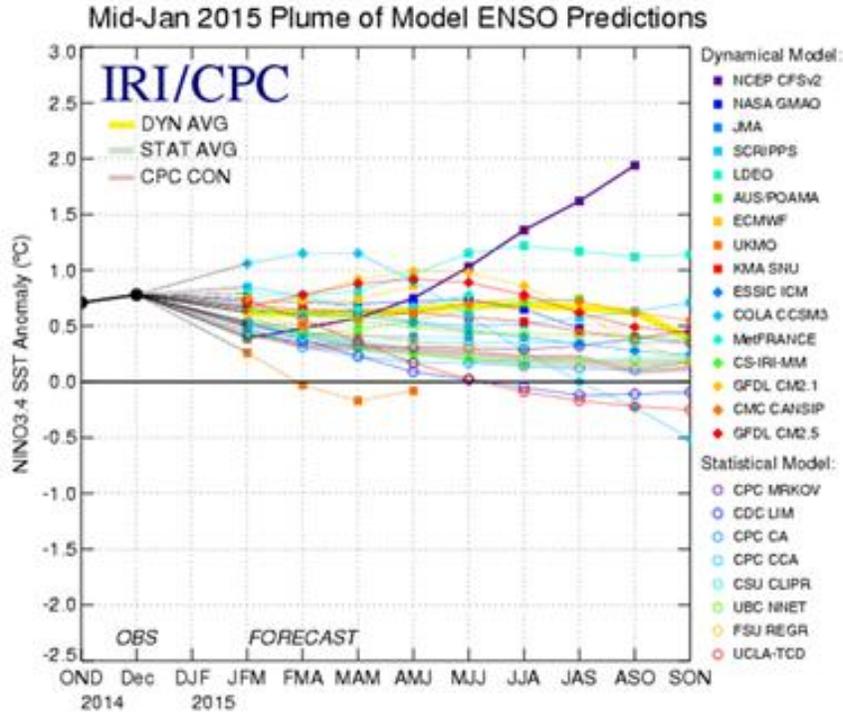


Fig. 3C: Forecasts of El Niño strength (in terms of the Niño3.4 index) for 2015 from various seasonal prediction models of international climate centres. Temperature anomalies above 0.5°C indicate El Niño conditions, below -0.5°C indicate La Niña conditions, and in between indicate neutral conditions, i.e. neither El Niño nor La Niña. Model outlooks and expert opinions suggest at most a weak El Niño strength to be likely if it occurs (image credit: IRI-CPC).

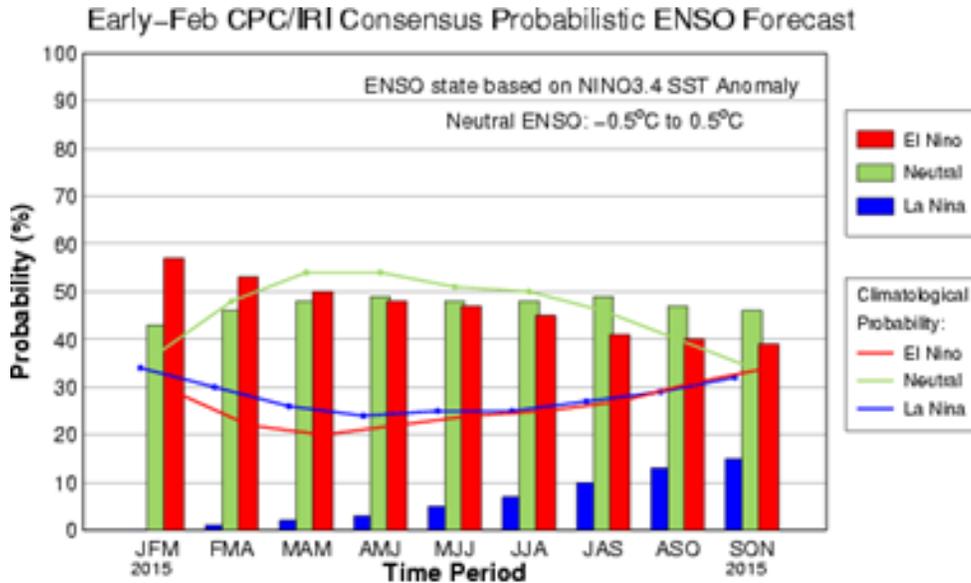


Fig. 3D: Probability of El Niño (red), La Niña (blue) and neutral conditions (green) for 2015. For JFM (January – March) season in progress, there is less than 60% chance of El Niño developing based on model predictions showing El Niño conditions and expert assessment (image credit: IRI-CPC).

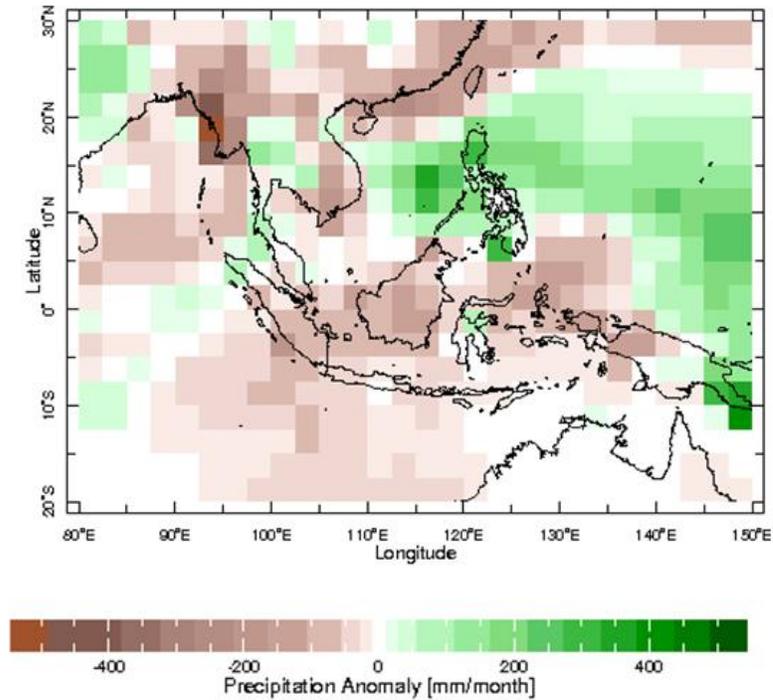


Fig. 3E: June to October rainfall anomaly composite for El Niño years (1982, 1986, 1987, 1991, 1994, 1997, 2002, 2004, 2006, and 2009) showing drier than average conditions (brown shades) mostly in the southern half of the region (image credit: IRI Data Library).

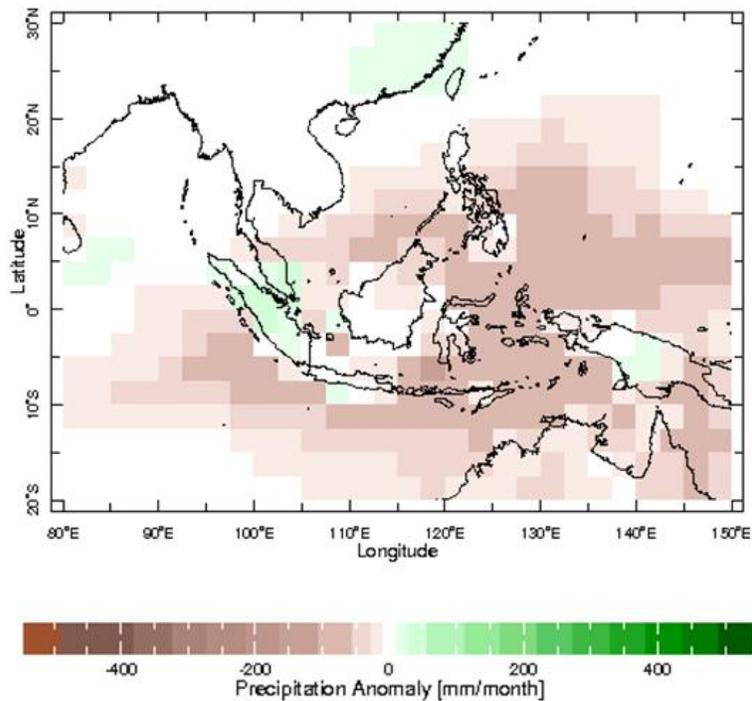


Figure 3F: December to February rainfall anomaly composite for El Niño years (1982, 1986, 1987, 1991, 1994, 1997, 2002, 2004, 2006, and 2009) showing drier than average conditions (brown shades) constrained to mostly the southern and eastern Maritime Continent (image credit: IRI Data Library).

4. Outlook

4.1 The prevailing Northeast Monsoon conditions are expected to prevail in March 2015. The dry phase of the Northeast Monsoon will bring dry and windy weather conditions to Peninsular Malaysia, Singapore and Sumatra while areas to the south of the equator around Java and Kalimantan, shower activities can be expected with the presence of the monsoon rain band in the region. In contrast, the northern ASEAN region can expect the dry and cool weather conditions to persist in March 2015. With the transition into Inter-Monsoon conditions in late-March 2015, an increase in afternoon shower activities can be expected for the southern ASEAN region.

4.2 With dry weather conditions expected to prevail in the northern ASEAN region, an escalation in hotspot activities in some parts of the region can still be expected in the coming months. In the southern ASEAN region especially over Sumatra and Kalimantan, sporadic hotspot activities may emerge during brief periods of drier weather in February and early March 2015. Vigilance should therefore be maintained for any escalation in hotspot activities in the fire-prone areas during this period.

4.3 Between February and April 2015, rainfall for most parts of the southern ASEAN region is expected to be normal. Slightly below normal to below normal rainfall is forecast for Sumatra, Kalimantan, Java and northern parts of Malaysia. In the northern ASEAN region, normal conditions are likely to persist from February to April, with slightly above normal rainfall conditions expected for Thailand. The rainfall outlook for the ASEAN region for February 2015 to April 2015 is shown in Figs. 4A – 4C.

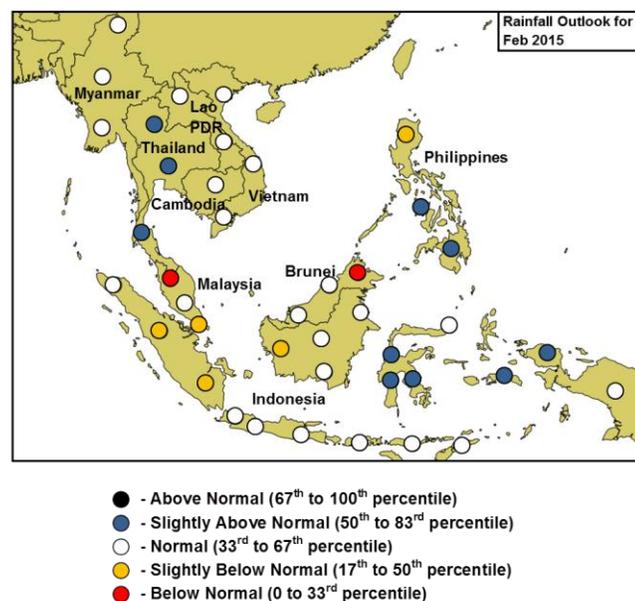
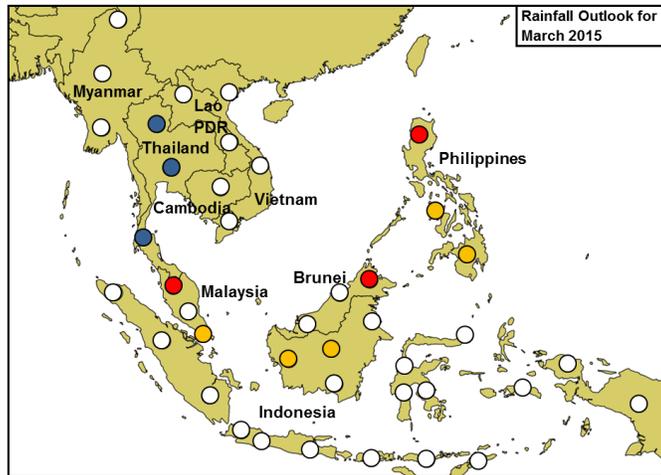
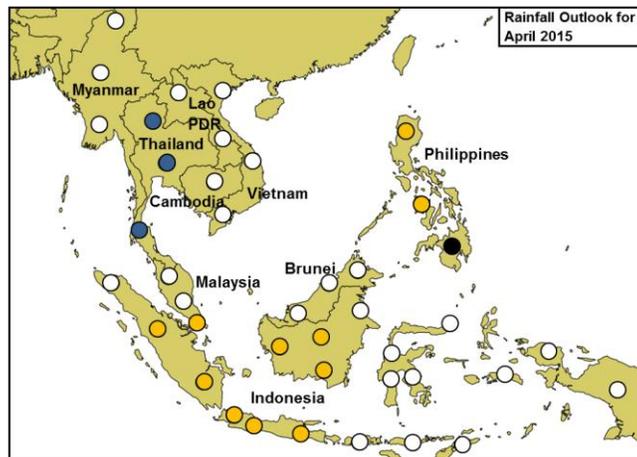


Fig. 4A: Rainfall Outlook for the ASEAN Region (Feb 2015)



- - Above Normal (67th to 100th percentile)
- - Slightly Above Normal (50th to 83rd percentile)
- - Normal (33rd to 67th percentile)
- - Slightly Below Normal (17th to 50th percentile)
- - Below Normal (0 to 33rd percentile)

Fig. 4B: Rainfall Outlook for the ASEAN Region (Mar 2015)



- - Above Normal (67th to 100th percentile)
- - Slightly Above Normal (50th to 83rd percentile)
- - Normal (33rd to 67th percentile)
- - Slightly Below Normal (17th to 50th percentile)
- - Below Normal (0 to 33rd percentile)

Fig. 4C: Rainfall Outlook for the ASEAN Region (Apr 2015)