

UPDATE OF REGIONAL WEATHER AND SMOKE HAZE FOR MAY 2015

1. Review of Regional Weather Conditions in April 2015

1.1 Inter-Monsoon conditions prevailed over the ASEAN region in April 2015. The gradual northward migration of the monsoon trough brought an increase of shower activities over most parts of ASEAN region, especially towards late-April.

1.2 In April 2015, less than 50% of normal rainfall was received in most parts of northern ASEAN region except northern Thailand and Luzon Island in the Philippines. In the southern ASEAN region, near-normal rainfall was received across most parts. Less than 75% of normal rainfall was received mainly over southern Peninsular Malaysia, northern Sumatra and northern Borneo. The regional rainfall distribution for April 2015 is shown in Fig. 1A.

Percentage of Normal Rainfall for April 2015

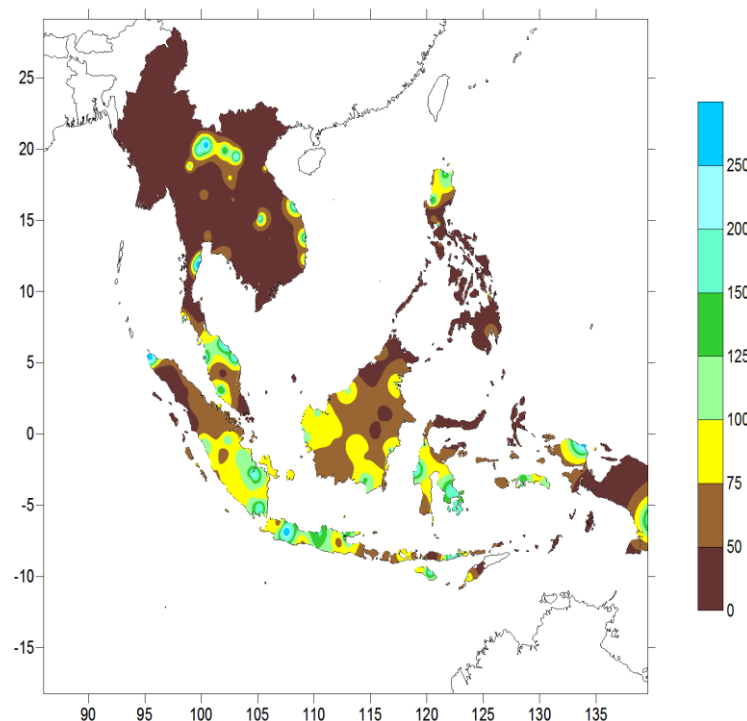


Fig. 1A: Percentage of Normal Rainfall for April 2015

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

2.1 In April 2015, there was a gradual reduction in hotspot activities over the northern ASEAN region due to increased shower activities in the region. Localised smoke haze and hotspot activities were observed in early-April especially in the northern parts of Lao PDR and Vietnam, as well as in areas around the border

between Thailand and Myanmar. Towards the later part of April 2015, persistent shower activities further subdued hotspot activities in the northern ASEAN region.

2.2 In the southern ASEAN region, hotspot activities were generally subdued by widespread shower activities that affected the region. Satellite images depicting some of the hotspot activities in the ASEAN region in April 2015 are shown in Figs. 2A to 2E.

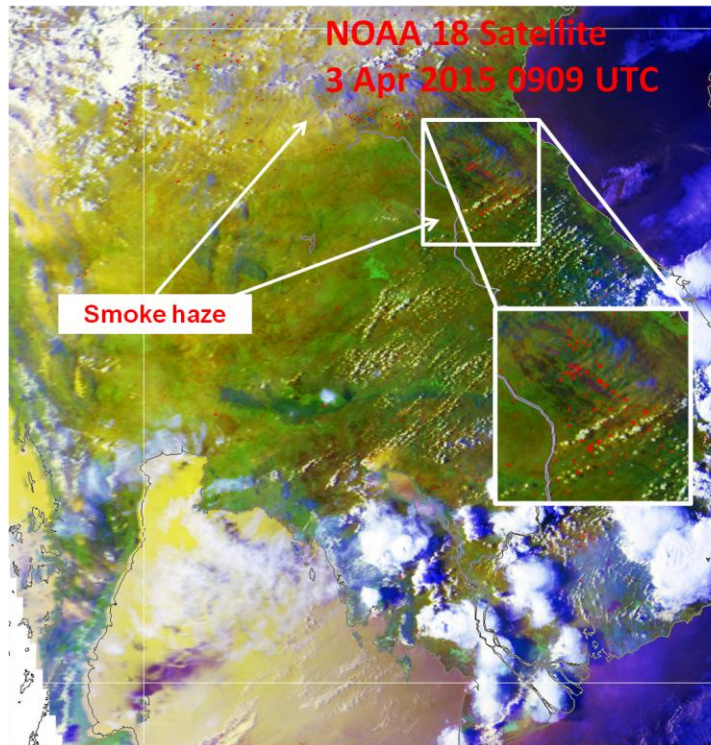


Fig. 2A: NOAA-18 satellite image on 3 April 2015 showing isolated hotspots in the northern areas between Lao PDR and Vietnam.

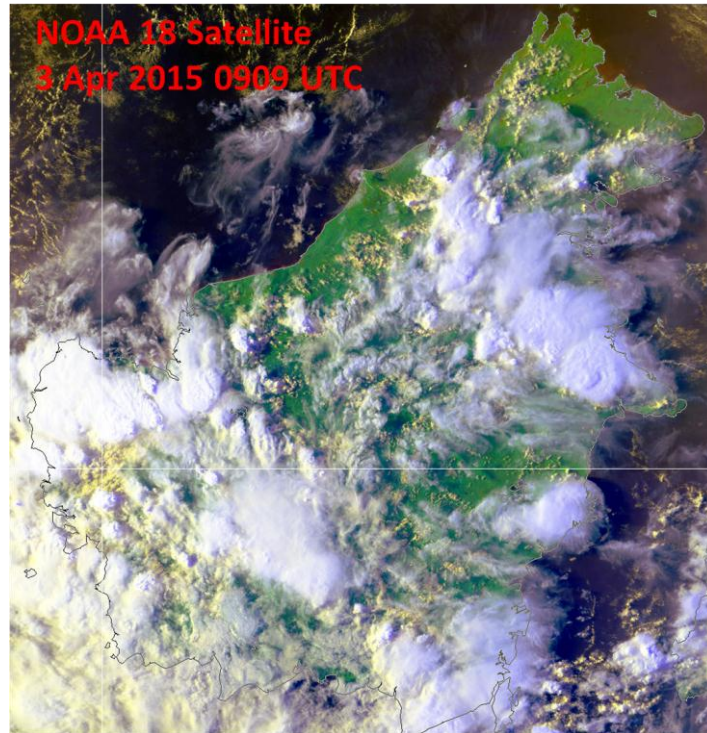


Fig. 2B: NOAA-18 satellite image on 3 April 2015 shows showers affecting most parts of Kalimantan. Hotspot activities were subdued by the widespread showers

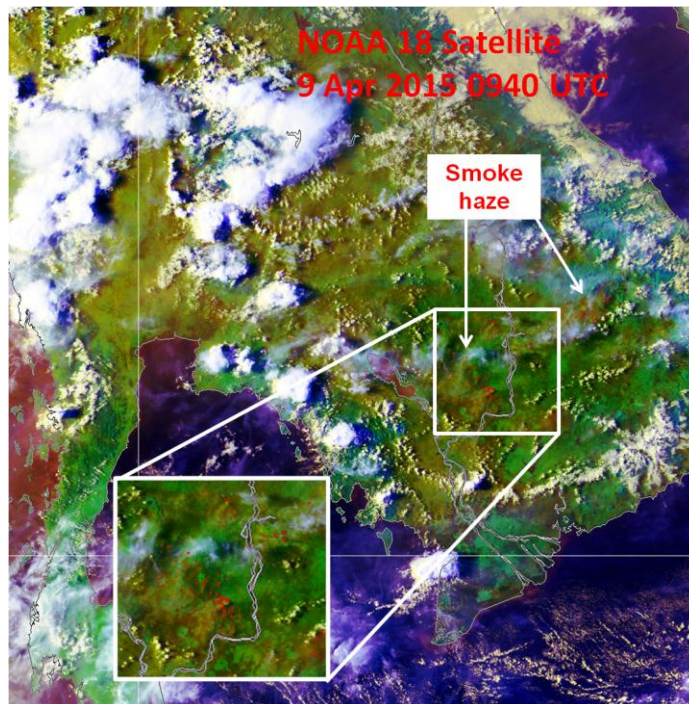


Fig. 2C: NOAA-18 satellite image on 9 April 2015 shows the emergence of localised hotspot activities in Cambodia

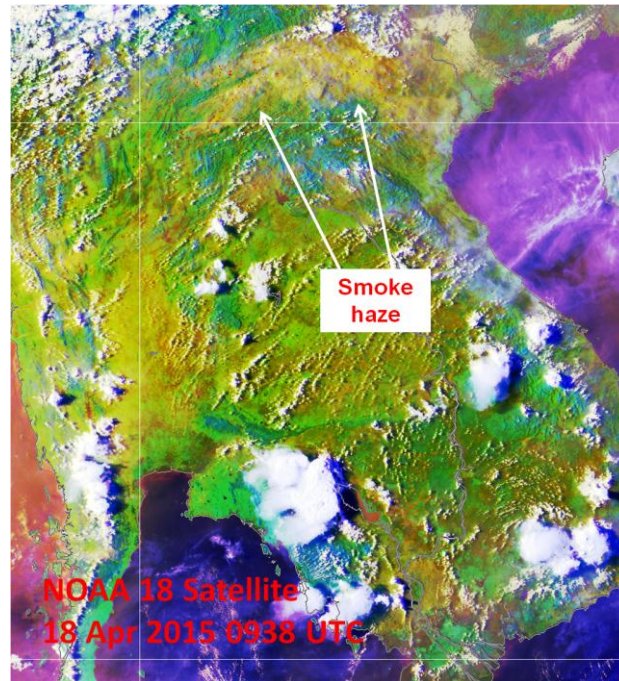


Fig. 2D: NOAA-18 satellite image on 18 April 2015 shows moderate to dense smoke haze emanating from hotspots located over northern parts of Thailand, Lao PDR and Vietnam

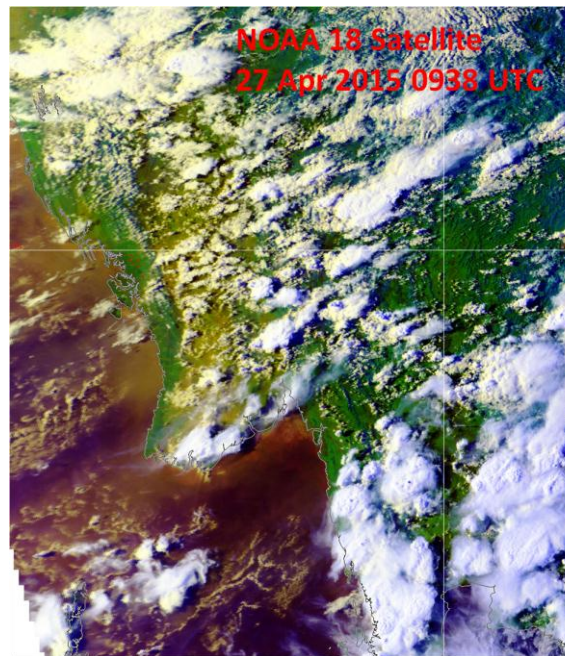


Fig. 2E: NOAA-18 satellite image on 27 April 2015 shows most parts of Myanmar affected by showers which helped to subdue the hotspot activities there

- 2.3 The hotspot charts for April 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.

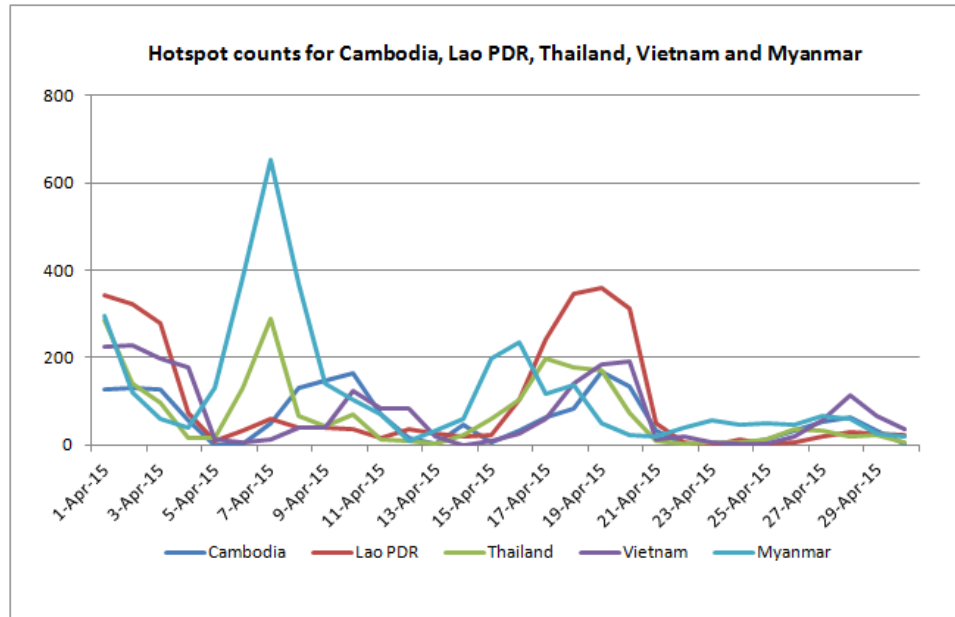


Fig. 2F: Hotspot Counts in Cambodia, Lao PDR, Thailand, Vietnam, Myanmar for April 2015

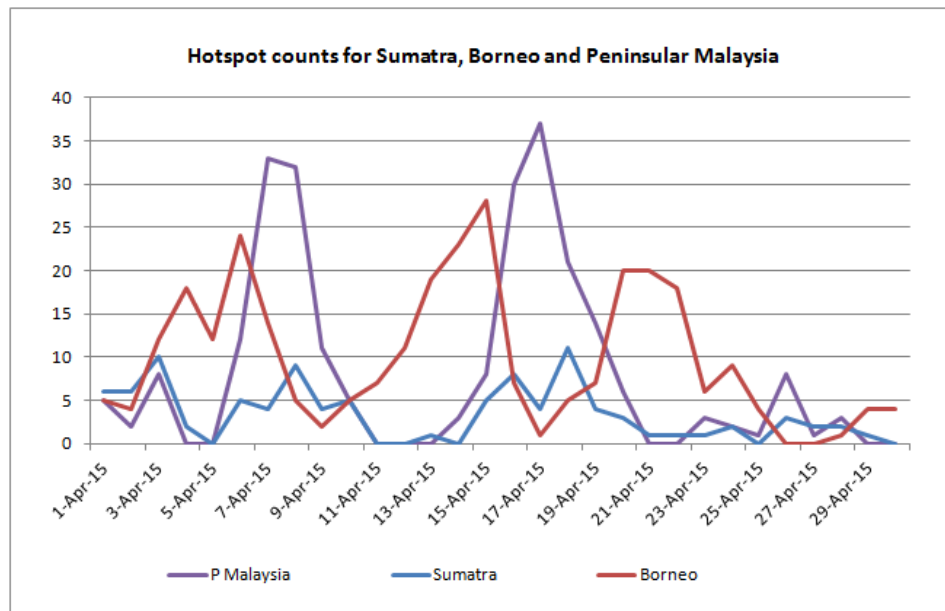


Fig 2G: Hotspot Counts in Sumatra, Borneo and Peninsular Malaysia for April 2015

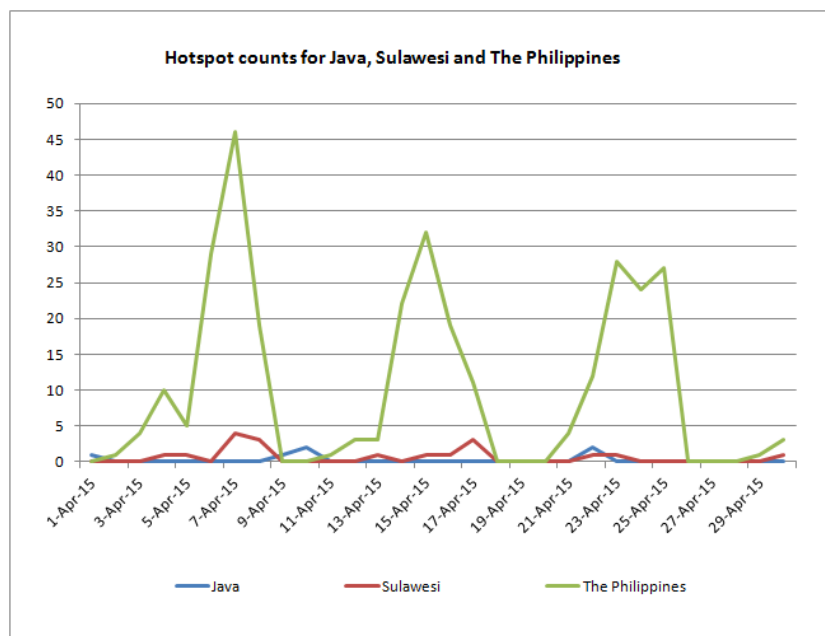


Fig. 2H: Hotspot Counts in Java, Sulawesi, Philippines for April 2015

3. Status of El Niño/La Niña*

3.1 Warming of the sea-surface temperatures (SST) over the tropical Pacific Ocean has continued steadily in April 2015 (Figure 3A). The Niño3.4 index for April 2015 is 0.88 (Figure 3B) and the latest 3-month average value increased from 0.61 to 0.71 (comparable to El Niño events within the 'weak' category). The atmospheric pattern over the tropical Pacific Ocean has also increasingly been showing response to the warming of the SST in terms of the weakening of the easterly winds and positive cloudiness over the tropical Pacific Ocean. These changes suggest stronger coupling between the atmospheric and oceanic conditions which is necessary for favourable El Nino development.

3.2 There is an enhanced 60-70% chance of El Nino conditions developing by the northern hemisphere summer (Figure 3C), based on the assessment of model outlooks from international climate centres. Some of these model outlooks point to the possibility of moderate El Nino conditions towards the end of the year but with considerable spread of possible outcomes (Figure 3D). However, at this time of the year, the El Nino predictions are not captured skilfully by the models. Hence, caution is exercised when using the model outlooks during this period.

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

3.4 The region is now transitioning into 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 if there is a possibility of a weak to

moderate El Niño developing in upcoming Jun-Jul-August (JJA) season, extended periods of drier and warmer conditions in this part of Southeast Asia may be expected.

* 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](#).

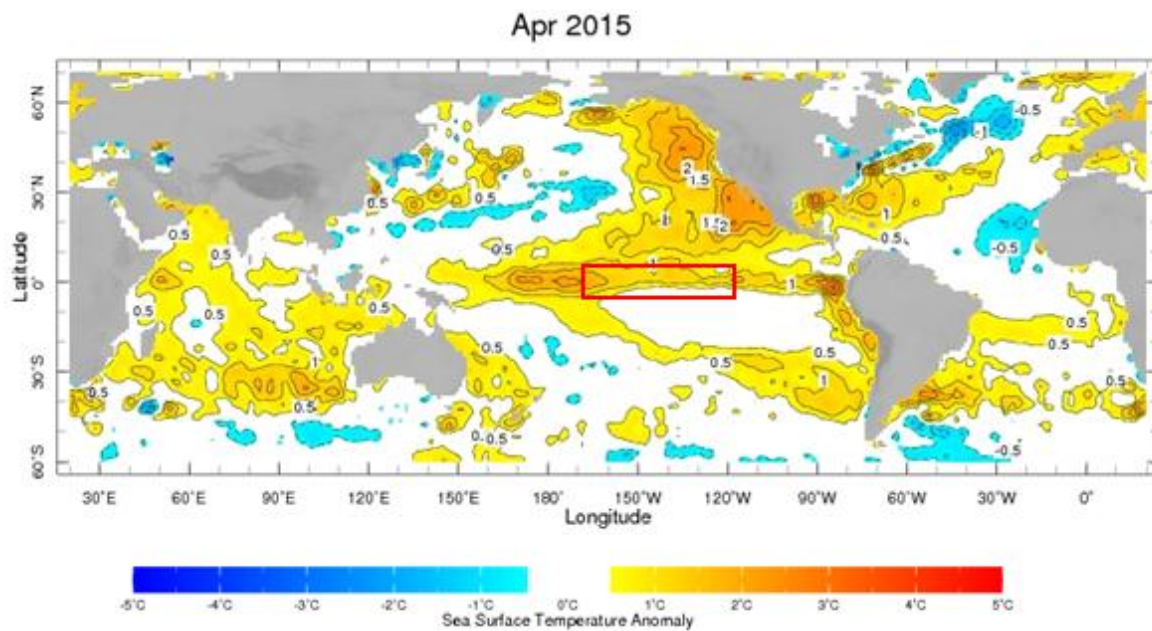


Fig. 3A: Warming of the tropical Pacific Ocean continued over the Niño3.4 region (red box, 120°W-170°W and 5°S-5°N) for April 2015 (image credit: IRI Map Room). Yellow shades show regions of relative warming, while blue shades show regions of relative cooling with respect to 1971-2000 climatology for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

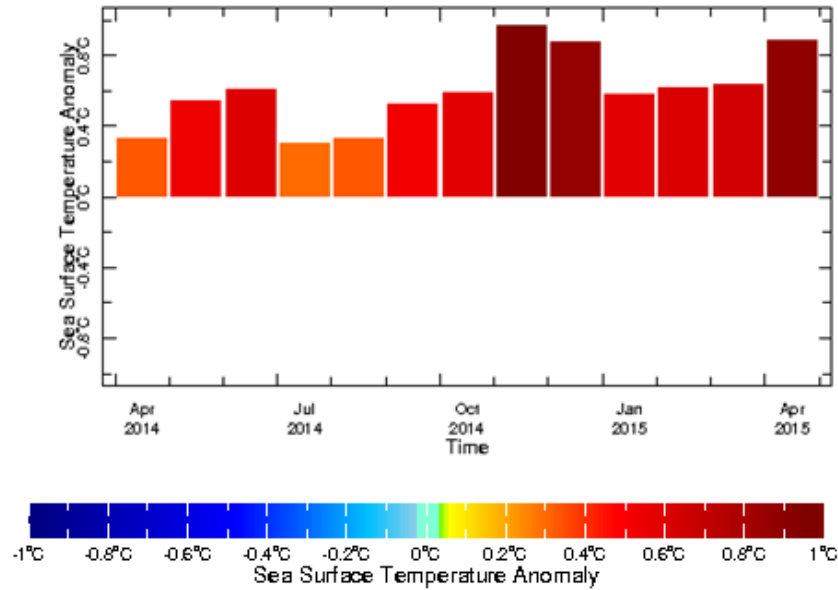


Fig. 3B Monthly sea-surface temperature anomaly over the Niño3.4 region (120°W-170°W and 5°S-5°N) over the tropical Pacific Ocean from April 2014 (left) to April 2015 (right) (image credit: IRI Map Room). Sustained warming has been observed in the last 12 months and the warming rate has increased recently. The running 3-month average value has hit above 0.5, which is a threshold set to indicate El Niño conditions, for six consecutive months.

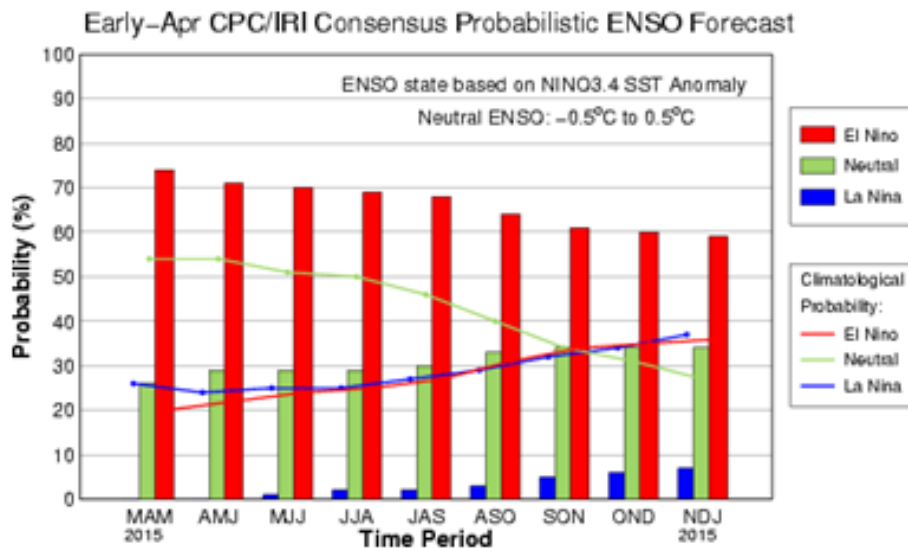


Fig. 3C: Probability of El Niño (red), La Niña (blue) and neutral conditions (green) for 2015. For the next few seasons, there is around 60% - 70% chance of El Niño developing based on model predictions showing El Niño conditions and expert assessment (image credit: IRI-CPC).

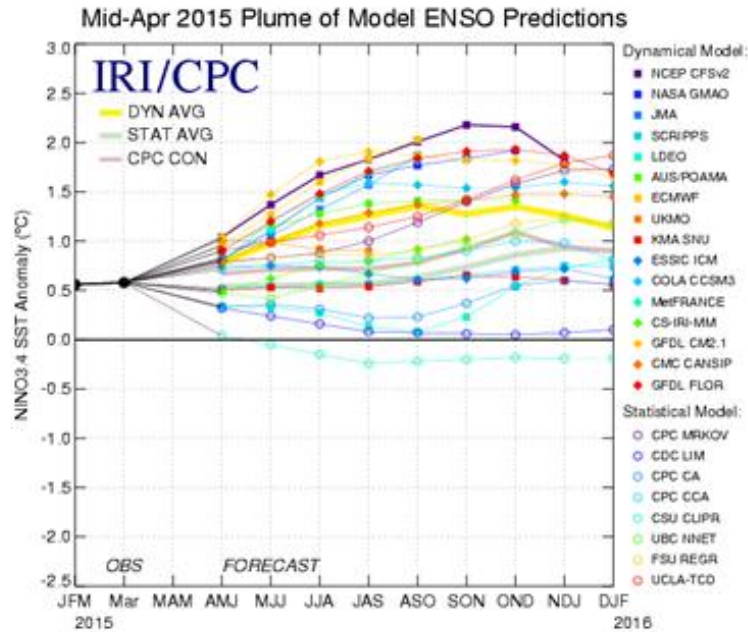


Fig. 3D: Forecasts of El Niño strength (in terms of the Niño3.4 index) for 2015 from various seasonal prediction models of international climate centres. Temperature anomalies above 0.5°C indicate El Niño conditions, below -0.5°C indicate La Niña conditions, and in between indicate neutral conditions, i.e. neither El Niño nor La Niña. In the coming months, there is a wide spread of climate model outlooks for tropical Pacific Ocean SST, which is consistent with the known lower skill of predictions made at this time of year (image credit: IRI-CPC).

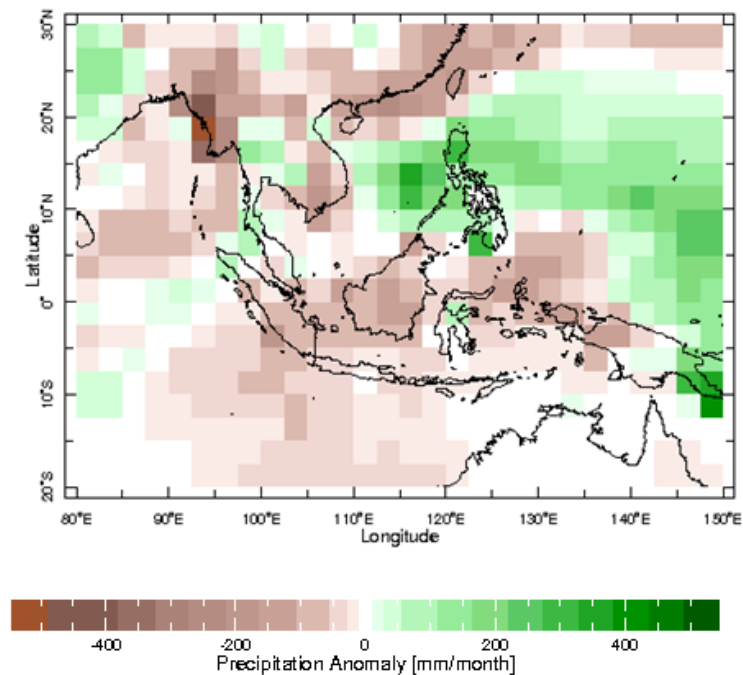


Fig. 3E: June to October rainfall anomaly composite for El Niño years showing drier than average conditions (brown shades) mostly in the southern half of the region (image credit: IRI Data Library).

4. Outlook

4.1 Inter-Monsoon conditions are forecast to continue to prevail in May 2015 and are expected to gradually transit to Southwest Monsoon conditions in late May/early June 2015. With the gradual northward migration of the monsoon trough in the following weeks, more shower activities can be expected over the northern ASEAN region.

4.2 As the region transitions into the Southwest Monsoon season, the traditional dry season of the southern ASEAN region would soon onset, and occasional extended periods of dry weather conditions can be expected for the coming months in the southern ASEAN region. An increase in hotspot activities is expected, in particular in the fire-prone provinces of Sumatra and Kalimantan, and this could lead to the occurrence of transboundary smoke haze pollution. Vigilance should be stepped up for any escalation of fire activities in the coming dry season.

4.3 Normal rainfall is forecast for Peninsular Malaysia, Sumatra and Kalimantan for the May-June 2015 period. In July 2015, slightly below to below normal is expected for southern Sumatra and southern Kalimantan. In the northern ASEAN region, slightly below-normal normal rainfall can be expected for the next 3 months, except in central and northern Philippines where rainfall is likely to be slightly above to above-normal in June and July. The rainfall outlook for the ASEAN region from May 2015 to July 2015 is shown in Figs. 4A – 4C.

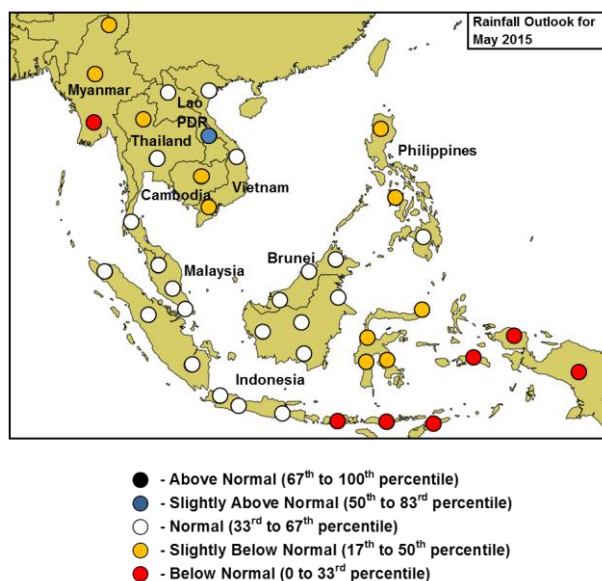


Fig. 4A: Rainfall Outlook for the ASEAN Region (May 2015)

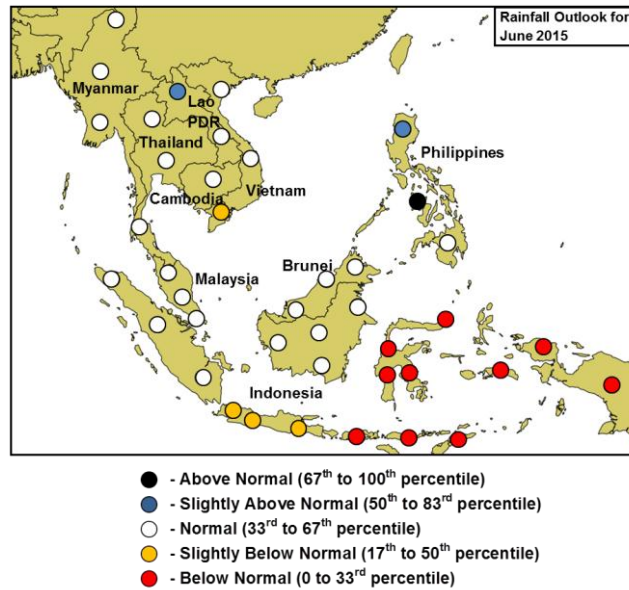


Fig. 4B: Rainfall Outlook for the ASEAN Region (June 2015)

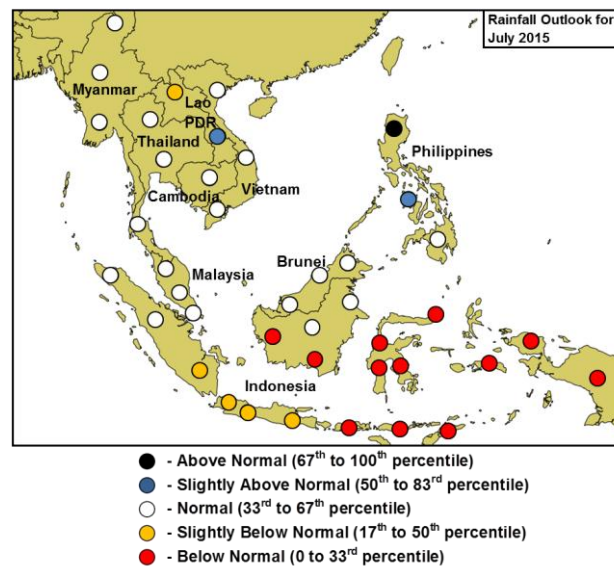


Fig. 4C: Rainfall Outlook for the ASEAN Region (July 2015)