



**Fifth Session of the ASEAN Climate Outlook Forum (ASEANCOF-5)  
16-19 Nov 2015, Centre for Climate Research Singapore (CCRS),  
Meteorological Service Singapore**

**Consensus Bulletin for December-January-February (DJF) 2015-16 Season**

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## **Introduction**

The Fifth ASEAN Climate Outlook Forum (ASEANCOF-5) was organised in Singapore from 18-19 November 2015 by the Meteorological Service Singapore (MSS), as host of the ASEAN Specialised Meteorological Centre (ASMC). This event was supported and co-sponsored by the World Meteorological Organization (WMO) and the US Agency for International Development (USAID). ASEANCOF-5 was attended by the National Meteorological Services (NMSs) of all 10 ASEAN Member countries: Brunei, Cambodia, Indonesia, Lao, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam. The meeting was also attended by experts from the WMO Global Producing Centres (GPC): Bureau of Meteorology (BoM) Australia, China Meteorological Administration (CMA), European Centre for Medium-range Weather Forecasts (ECMWF), Japan Meteorological Agency (JMA), National Centers for Environmental Protection (NCEP, NOAA), WMO Lead Center for Long Range Forecast Multi-Model Ensemble (WMO LC-LRFMME), as well as the APEC Climate Centre (APCC), the International Research Institute for Climate and Society (IRI), and the Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES). End-user representatives from the hydrological sector, coordinated by the Global Water Partnership South East Asia (GWP-SEA), and from the disaster-risk management agencies, coordinated by the ASEAN Coordinating Centre for Humanitarian Assistance, (AHA Centre) were also present.

The aim of the forum is to provide collaboratively developed and consensus-based seasonal climate outlooks and related information on a regional scale. The forum outlook and its activities contribute significantly to one of the key roles of the ASEAN Specialised Meteorological Centre (ASMC), which is to conduct climate and seasonal prediction for

ASEAN region through pooling the expertise of ASEAN National Meteorological Services. The consensus outlook for the December-January-February (DJF) 2015-16 season for the ASEAN region benefits from the guidance of the WMO GPC model outputs, as well as other global providers. In particular use is made of the multi-model ensemble forecasts from WMO LC-LRFMME as well as country-level forecasts developed by the participating national experts. The forum reviewed the present climate conditions in the Southeast Asia region, and discussed the various global and regional climatic factors that will influence the DJF season in the area. In particular, the forum took into account the significant influence of the El Niño Southern Oscillation (ENSO) and the Indian Ocean Dipole (IOD) on the climate over Southeast Asia.

In light of the developing El Niño, the theme of this year's forum focused on the application of seasonal and subseasonal predictions to drought. The forum was preceded by a 2-day Pre-COF training workshop (16-17 Nov 2015) which covered topics such as the ENSO and the Madden-Julian Oscillation (MJO), and sub-seasonal to seasonal prediction. The Pre-COF was conducted in collaboration with experts from the IRI and APCC.

### **Conditions and Outlook**

The 2015-16 El Niño event was at a strong and mature level by the Northern Hemisphere late autumn/early winter season. Most of the international climate outlook models indicated that this El Niño event would strengthen slightly before the end of 2015. The strength of this El Niño was comparable to the stronger El Niño events in the past (e.g. 1982-83 and 1997-98). Typically, the impact of the El Niño on the region during the DJF season is on the north-eastern part of the Maritime Continent. Hence, there is an enhanced likelihood for that sub-region to experience drier-than-normal conditions for DJF 2015-16.

The IOD was in a positive state towards the end of 2015 but models that were assessed predicted that the IOD would start to weaken gradually from the beginning of 2016. Positive IOD can potentially reinforce the impact of El Niño on the region, especially in the south-western sub-region, however the sea-surface temperature gradient and conditions in the Indian Ocean and the seas around this region were observed not to be as significant as that of the 1997-98 El Niño and IOD co-occurrence.

A limited assessment based on a few of the models revealed that a slightly weaker East Asian Monsoon season for the DJF 2015-16 was possible with the outlook for northeast monsoon winds indicating weaker conditions on average over the mainland Southeast Asia region.

Taking into consideration the national-level forecasts, the present status of the climate conditions affecting Southeast Asia, and the forecasts available from the GPCs and other

global centres, the forum agreed on the following consensus-based outlook for the DJF 2015-16 season for the Southeast Asia region:

**RAINFALL**

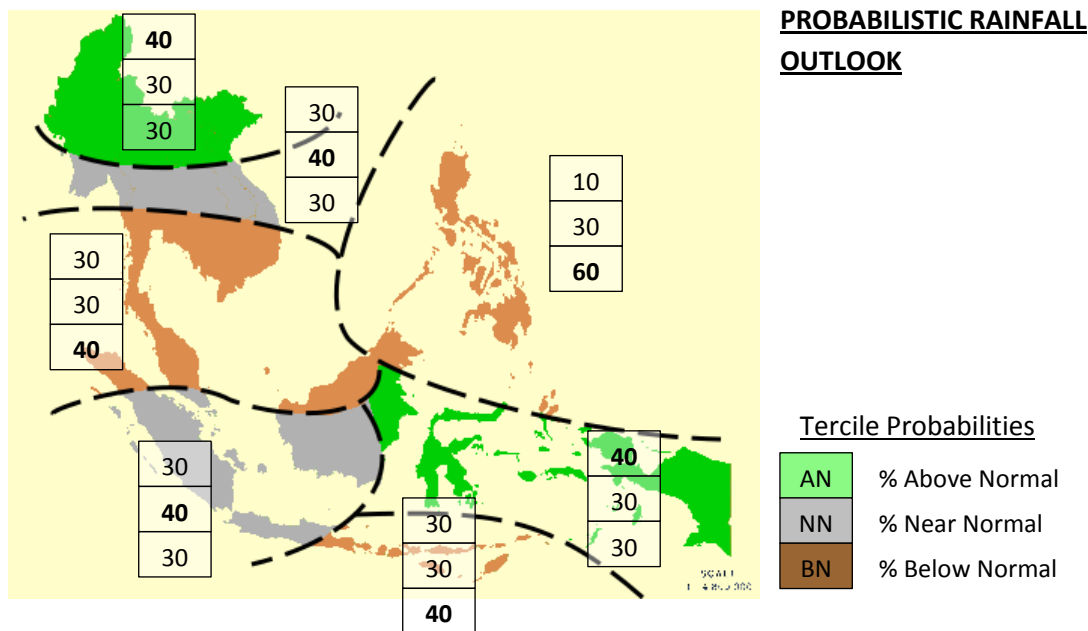
*For the upcoming Northern Hemisphere winter monsoon season (Dec-Jan-Feb), there is a strongly enhanced probability of below normal rainfall over the Philippines and the north-eastern part of Borneo Island. Over the eastern Maritime Continent and over the northern part of Mainland Southeast Asia, there are slightly enhanced probabilities of above normal rainfall. Elsewhere over the region, there are slightly enhanced probabilities for normal or below normal rainfall.*

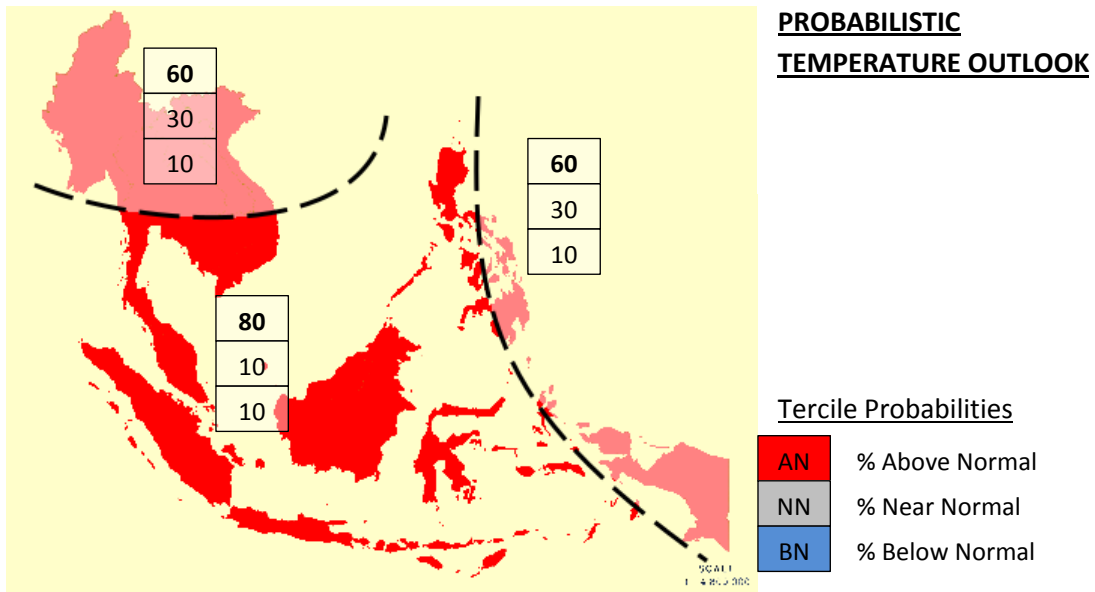
**TEMPERATURE**

*Above normal temperatures are very likely over much of the Southeast Asia region for the upcoming Northern Hemisphere winter monsoon season (Dec-Jan-Feb), with the highest probabilities over the central and western Maritime Continent.*

Refer to Annex A for reference on what is meant by “above, near, or below normal” in the outlook. For more information on the Northern Hemisphere winter monsoon outlook and further updates on the national scale, the relevant NMSs should be consulted (see Annex B).

**Consensus Maps for DJF 2015-16**





## **Acknowledgements**

The forum would like to thank the National Meteorological Services of the ASEAN Member countries for conveying their national-level forecasts, the Global Producing Centres and other participating international climate modelling centres for their products and expertise made available for this climate outlook forum, as well as the participants from the end-user communities coordinated by GWP-SEA and AHA Centre for their contributions. The forum would also like to thank the WMO Secretariat and the USAID for providing support and sponsorship for this event, and to IRI and APCC for coordinating the Pre-COF training workshop.

## Annex A: Rainfall and Temperature Tercile Climatologies

The following figures are rainfall and temperature mean and tercile boundary climatologies to reference against the consensus outlook. Only a single source of data for each variable is provided ([CRU, UEA](#)). For more representative climatologies, reference should be made also against observational datasets known to better characterize local patterns (e.g. quality-controlled station data from the respective National Meteorological Services).

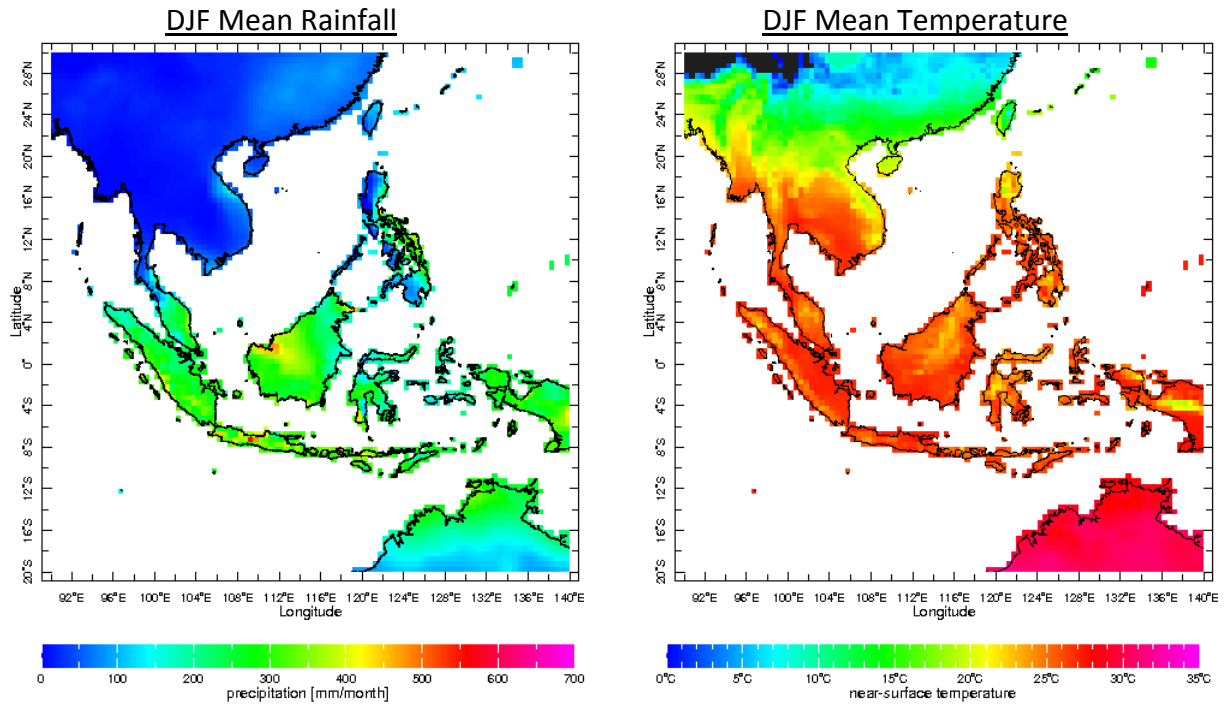


Figure A1: Rainfall mean climatology in mm/month (left) and the temperature mean climatology in degrees Celsius (right) for DJF from 1981-2010 from TS3p22 (CRU, UEA).

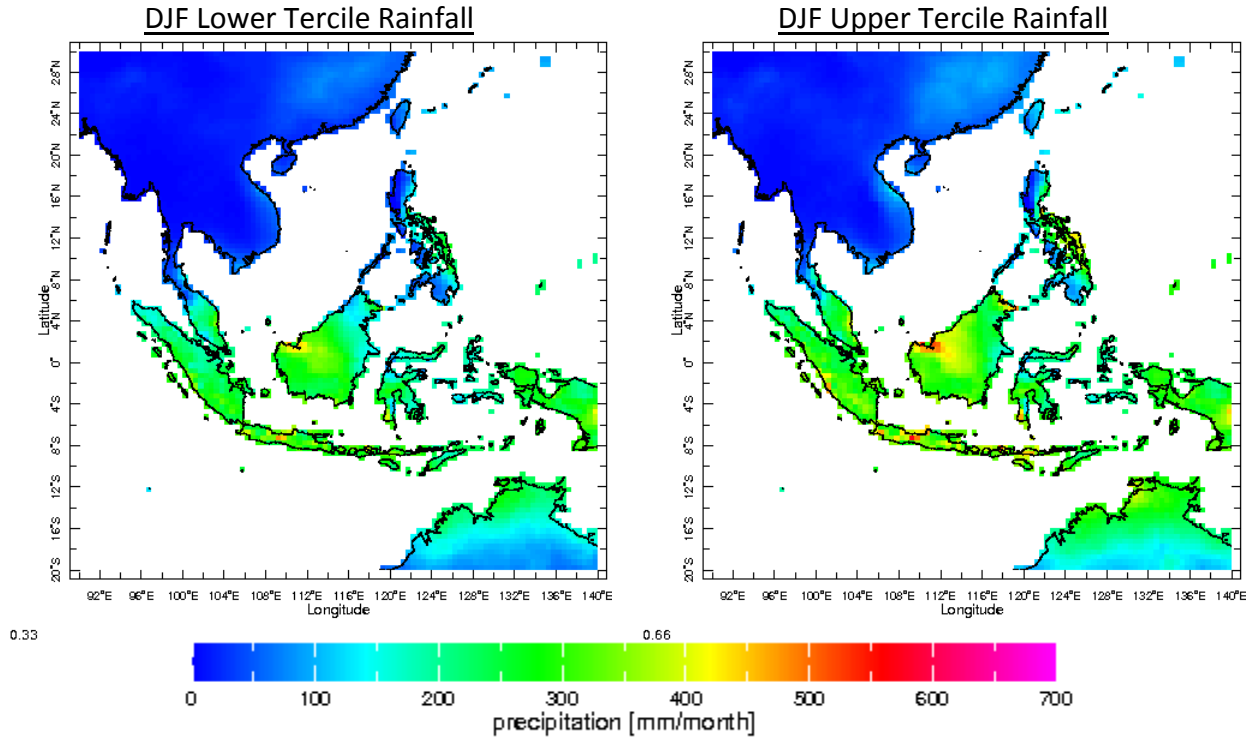


Figure A2: Rainfall climatologies of the lower tercile boundary (left) and the upper tercile boundary (right) for DJF from 1981-2010 from TS3p22 (CRU, UEA) in mm/month.

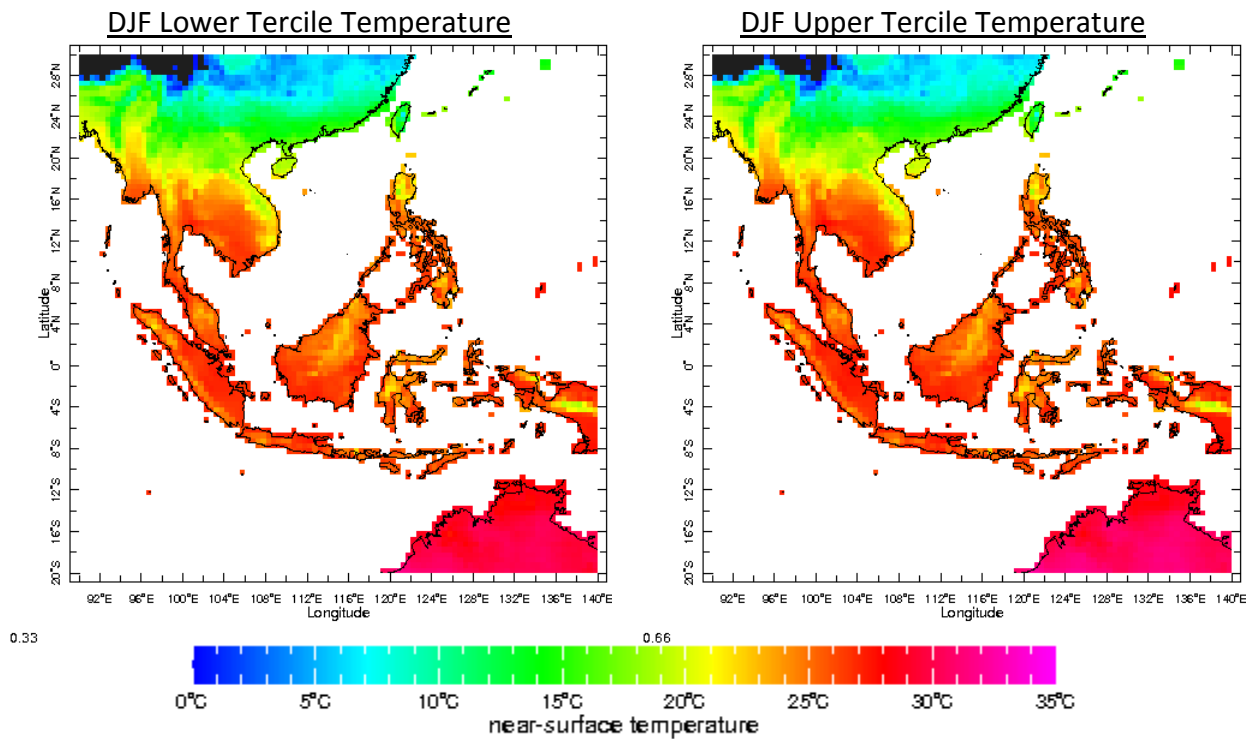


Figure A3: Temperature climatologies of the lower tercile boundary (left) and the upper tercile boundary (right) for DJF from 1981-2010 from TS3p22 (CRU, UEA).

## **Annex B: National Meteorological Services' Contact Information**

**- Brunei Darussalam Meteorological Department (BDMD)**

<http://www.met.gov.bn/weather>

**- Department of Meteorology, Cambodia**

<http://www.cambodiameteo.com/map?menu=3&lang=en>

**- Badan Meteorologi, Klimatologi dan Geofisika, Indonesia (BMKG)**

<http://www.bmkg.go.id>

**- Department of Meteorology and Hydrology (DMH), Lao**

<http://dmhlao.etlao.com/>

**- Malaysian Meteorological Department (MMD)**

<http://www.met.gov.my/>

**- Department of Meteorology and Hydrology (DMH), Myanmar**

<http://www.dmh.gov.mm/>

**- Philippines Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)**

<http://www.pagasa.dost.gov.ph/>

**- Meteorological Service Singapore Government (MSS)**

<http://www.weather.gov.sg/home/>

**- Thai Meteorological Department (TMD)**

<http://www.tmd.go.th/en/>

**- National Center for Hydro-Meteorological Forecasting (NCHMF), Vietnam**

<http://www.nchmf.gov.vn/Web/en-US/43/Default.aspx>