

## APCC Monthly Climate Outlook for January – June 2020

(Issued: December 20, 2019)

- ***During November 2019, weak positive Niño3.4 index was observed with weak positive sea surface temperature anomalies over the equatorial Pacific.***
- ***The latest APCC ENSO outlook suggests the probability for ENSO neutral conditions is likely to be dominant (~58%) during January – March 2020 and the probability for neutral conditions is likely to slightly decrease to 52% through April – June 2020.***
- ***Positive temperature anomalies are likely to prevail over most of the globe, especially over the subtropical North Pacific, southern South Pacific, subtropical North Atlantic, and the western Indian Ocean for January – June 2020.***
- ***Above normal precipitation anomalies are predicted for the western Indian Ocean and the central off-equatorial North Pacific, while below normal precipitation anomalies are expected for eastern off-equatorial South Pacific for January – June 2020.***

### Current Climate Conditions

In November 2019, weak positive equatorial sea surface temperature (SST) anomalies remained over the equatorial Pacific, while the weak negative anomalies remained over the eastern off-equatorial South Pacific. Tropical convection over Indonesia was suppressed, while easterly wind at 850hPa over Indonesia was intensified. Positive monthly mean temperature anomalies exceeding +5°C were observed over the East Siberian, Chukchi, and Beaufort Seas, Baffin Bay, Greenland, and Central Europe. Negative anomalies spanned over Central Asia, central Russia, eastern Canada and USA, and the Arctic Archipelago. Positive monthly mean precipitation anomalies were observed over the western Indian Ocean and the western Pacific, whereas negative anomalies spanned over the eastern Indian Ocean, maritime continent, and Australia [Figs. 1, 2, and 3].

### Discussion of Climate Forecast

#### ***SST and ENSO Outlook:***

The prevailing ENSO phase is expected to be neutral. Weak positive SST anomalies in the equatorial Pacific are predicted during January – March 2020, and a weak cold tongue is expected to expand over the eastern equatorial Pacific during April – June 2020, which corresponds to a Niño3.4 index between 0.2°C and 0.48°C. In summary, based on the running 3-month mean Niño3.4 index, the APCC ENSO outlook suggests 58% chance of ENSO neutral conditions is expected during January to March 2020. The chance for the conditions is likely to slightly decrease to around 52% until April to June 2020, which is still dominant compared to the chances of El Niño and La Niña conditions [Figs. 4 and 5].

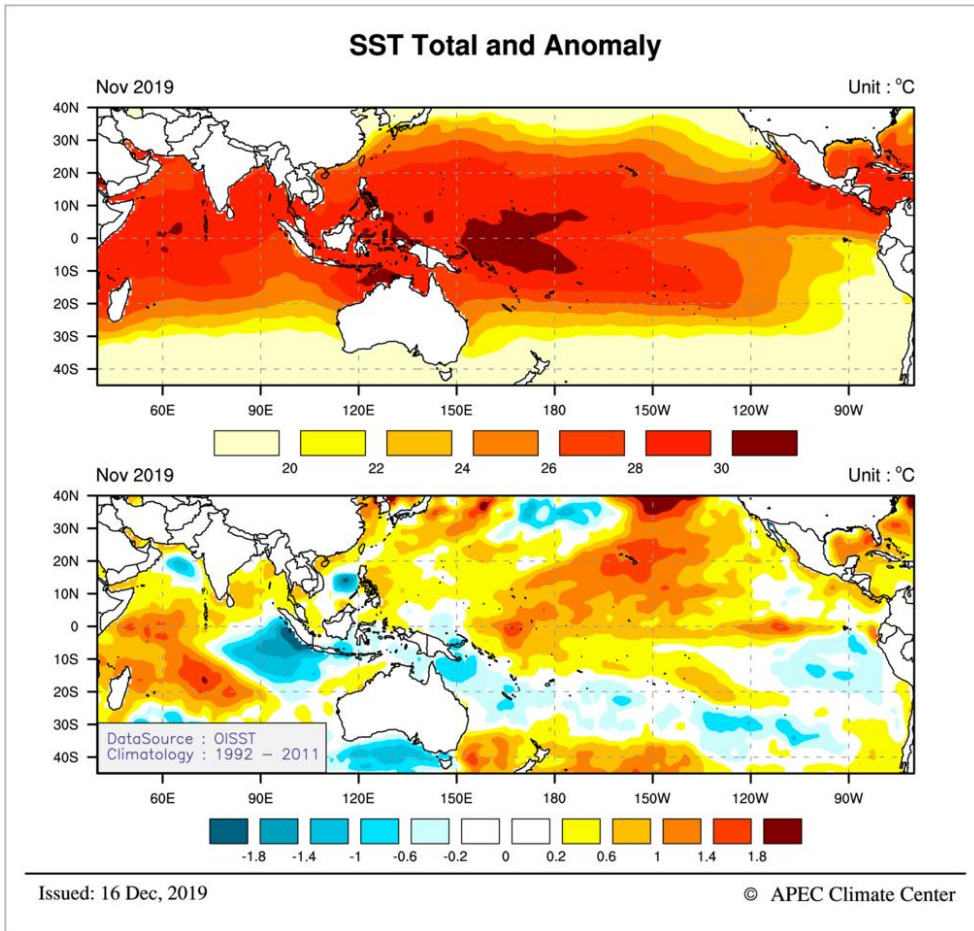
## ***Temperature and Precipitation Outlook:***

### **1. Forecast for January – March 2020**

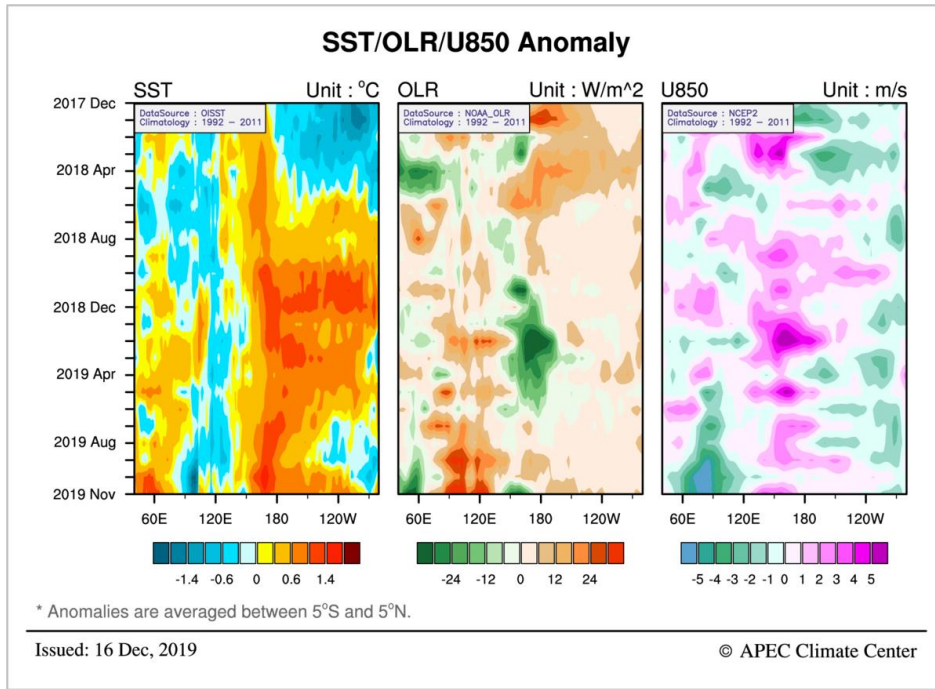
Strongly enhanced probability for above normal temperatures is predicted for the tropical Pacific (excluding the central and eastern regions), northwestern and northeastern North Pacific, western Indian Ocean, Southeast Asia, equatorial Atlantic, subtropical North Atlantic, Caribbean Sea, southern Africa, and the Antarctic Ocean. Enhanced probability for above normal temperatures is expected for the Arctic, Antarctic, East Asia (excluding southwestern China), eastern Indian Ocean, Australia, and Central and South America. Enhanced probability for below normal temperatures is predicted for the southern Indian Ocean. Enhanced probability for near normal temperatures is expected for the central and eastern off-equatorial Pacific. Enhanced probability for above normal precipitation is predicted for the central off-equatorial North Pacific, and the western Indian Ocean. Enhanced probability for below normal precipitation is expected for the eastern Indian Ocean, central and eastern off-equatorial South Pacific, subtropical North Atlantic, and southern Africa. Enhanced probability for near normal precipitation is predicted for the central and eastern equatorial Pacific and the Sahel [Fig. 6].

### **2. Forecast for April – June 2020**

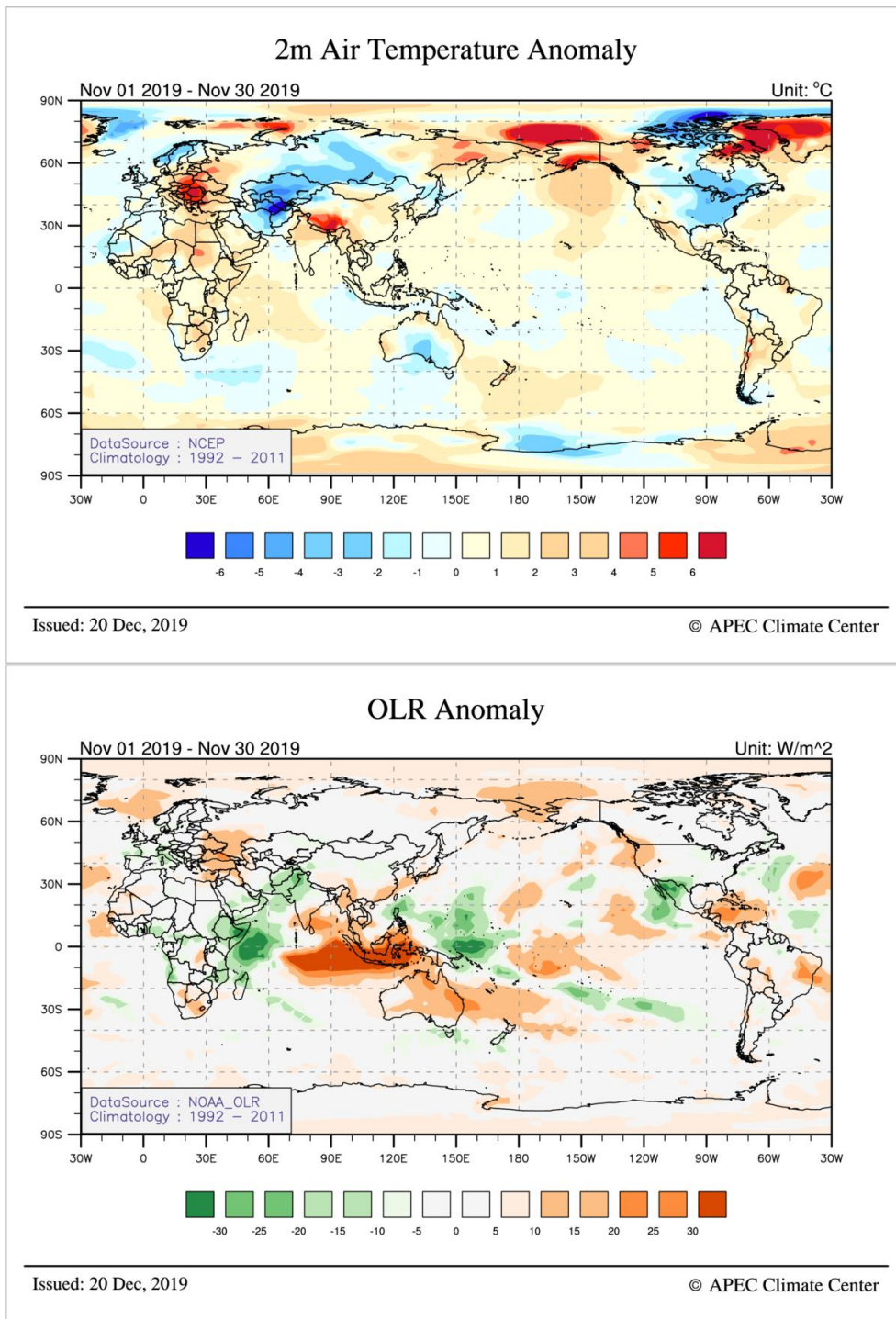
Strongly enhanced probability for above normal temperatures is predicted for the Arctic, northern North Pacific, tropical North Pacific, southern South Pacific, Indian Ocean, maritime continent, equatorial Atlantic, and the subtropical North Atlantic. Enhanced probability for above normal temperatures is expected for most of the globe (excluding the eastern South Pacific, southern Indian Ocean, and the northern North Atlantic). Enhanced probability for above normal precipitation is predicted for the central and eastern off-equatorial North Pacific and some areas of western Indian Ocean. Enhanced probability for below normal precipitation is expected for the central and eastern off-equatorial South Pacific. Enhanced probability for near normal precipitation is predicted for the central and eastern equatorial Pacific [Fig. 7].



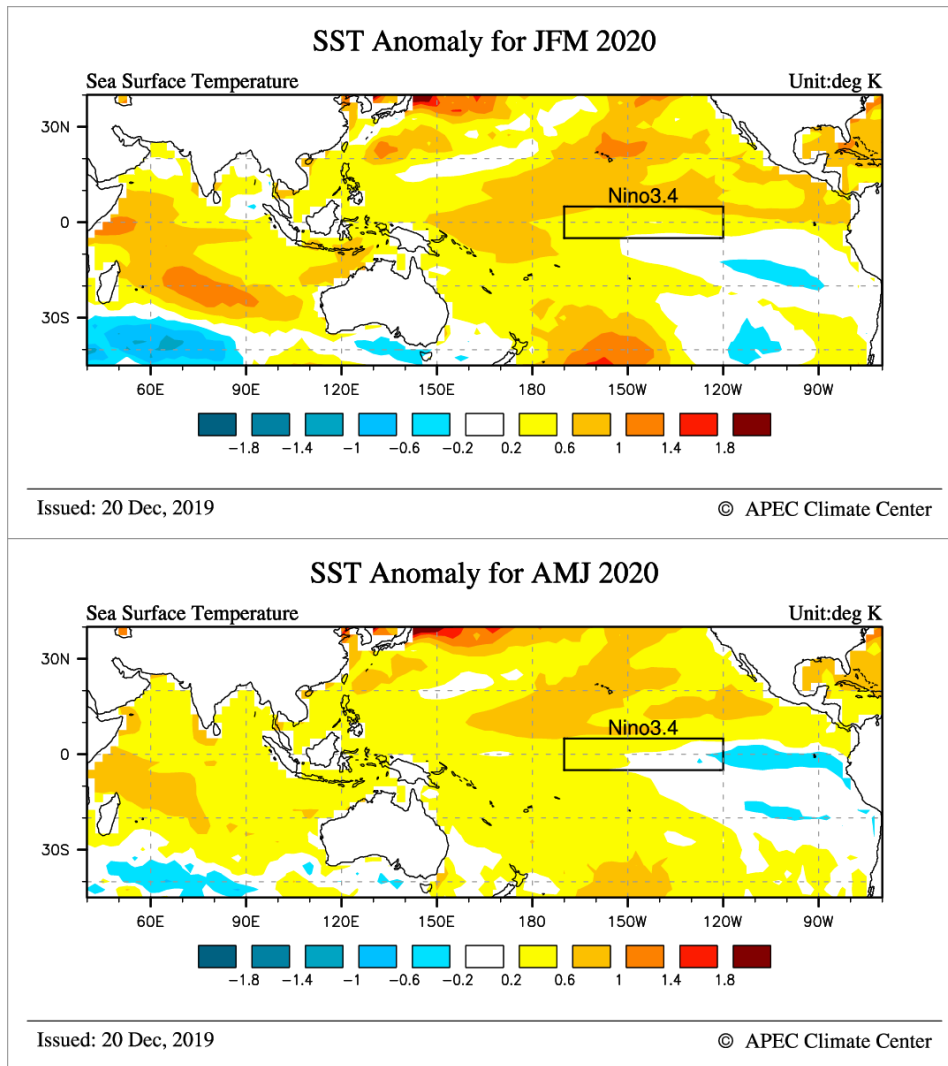
**Fig. 1.** Monthly mean observed sea surface temperatures (SSTs; top) and anomalies (bottom) for November 2019.



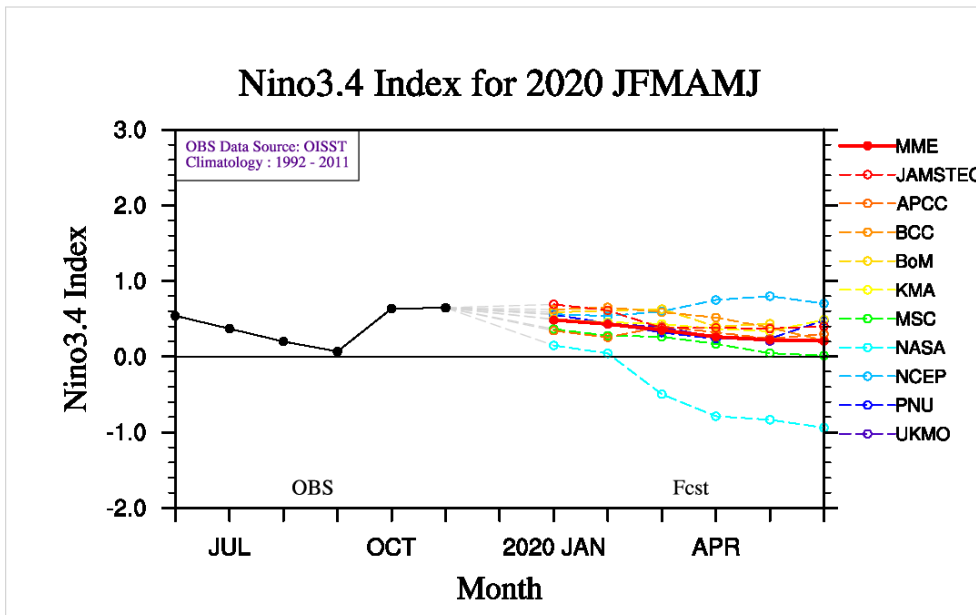
**Fig. 2.** Time-longitude cross section of the observed monthly mean SST anomalies, outgoing longwave radiation (OLR) anomalies, and zonal wind anomalies at 850hPa (U850) along the equator (5°S-5°N) in the Indian and Pacific Oceans (40°E-80°W) for December 2017 – November 2019.



**Fig. 3.** Monthly mean anomalies of the observed surface air temperature (top) and OLR (bottom) for November 2019.

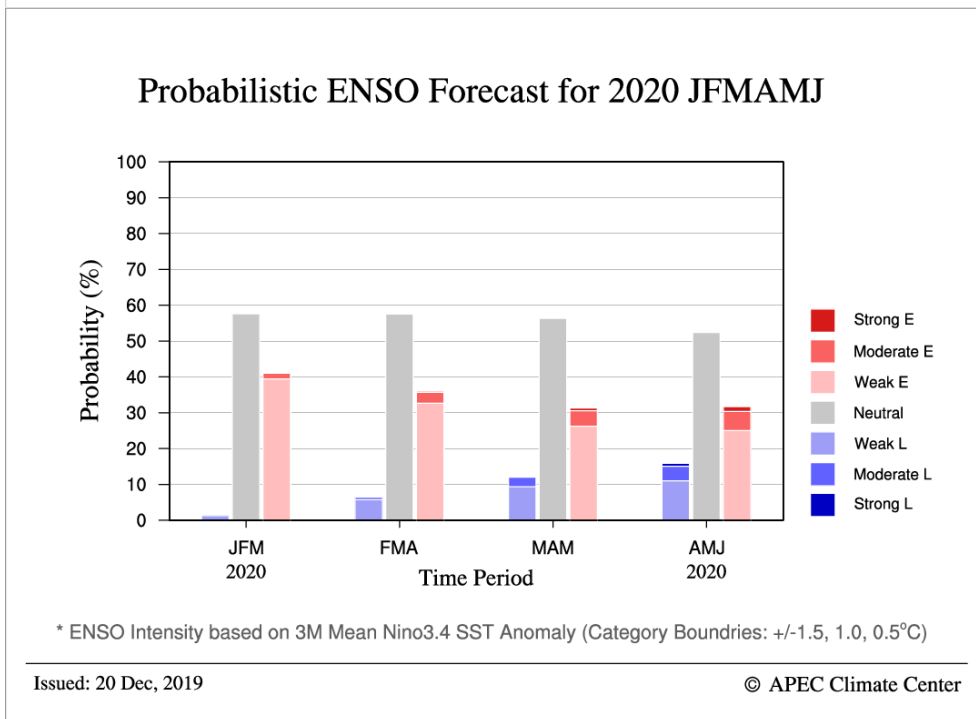


**Fig. 4.** Multi-model ensemble (MME) forecasts of SST anomalies for January – March 2020 (top) and April – June 2020 (bottom). Anomalies are computed with respect to the common base period of participating models in the APCC MME prediction (1992-2011).



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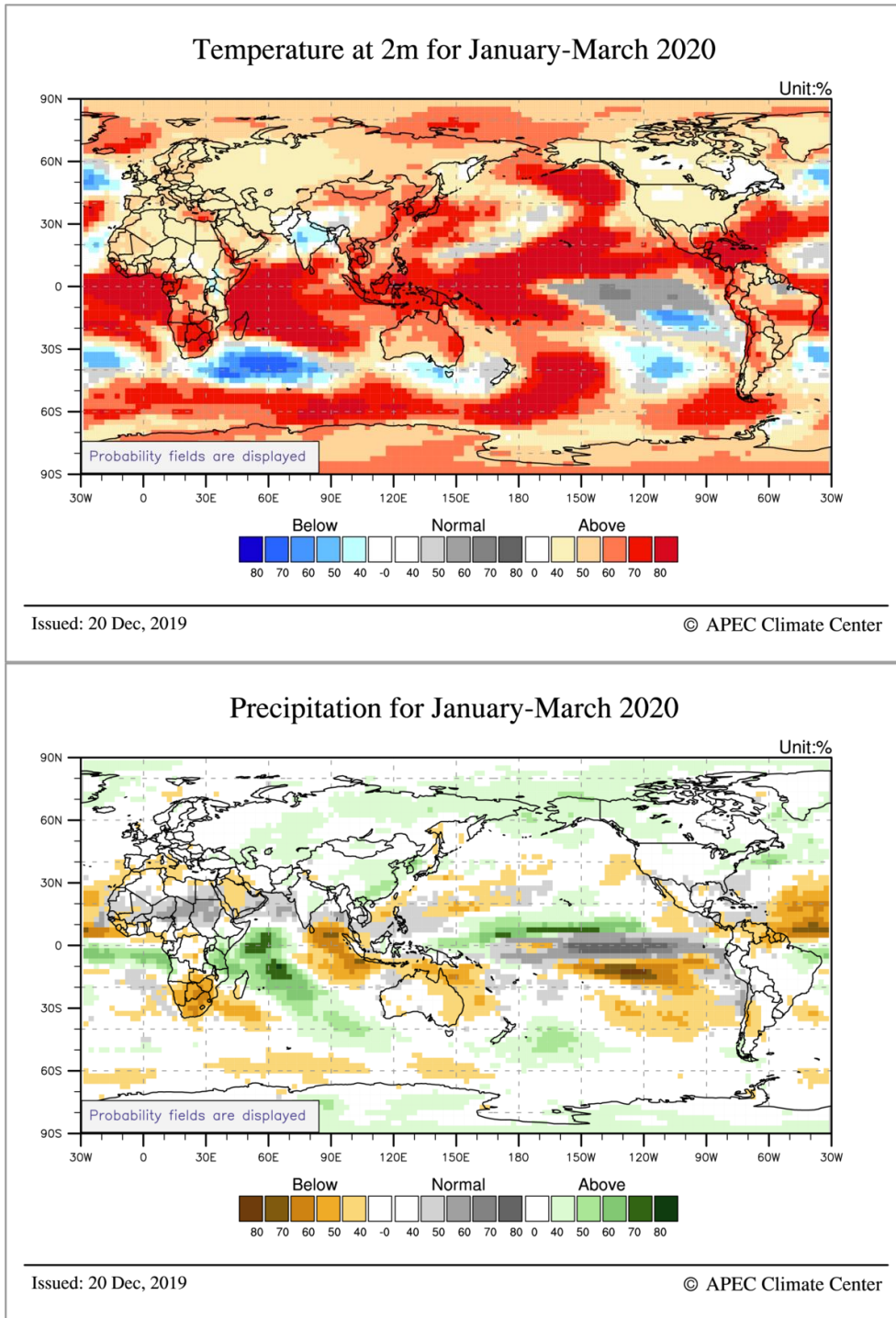
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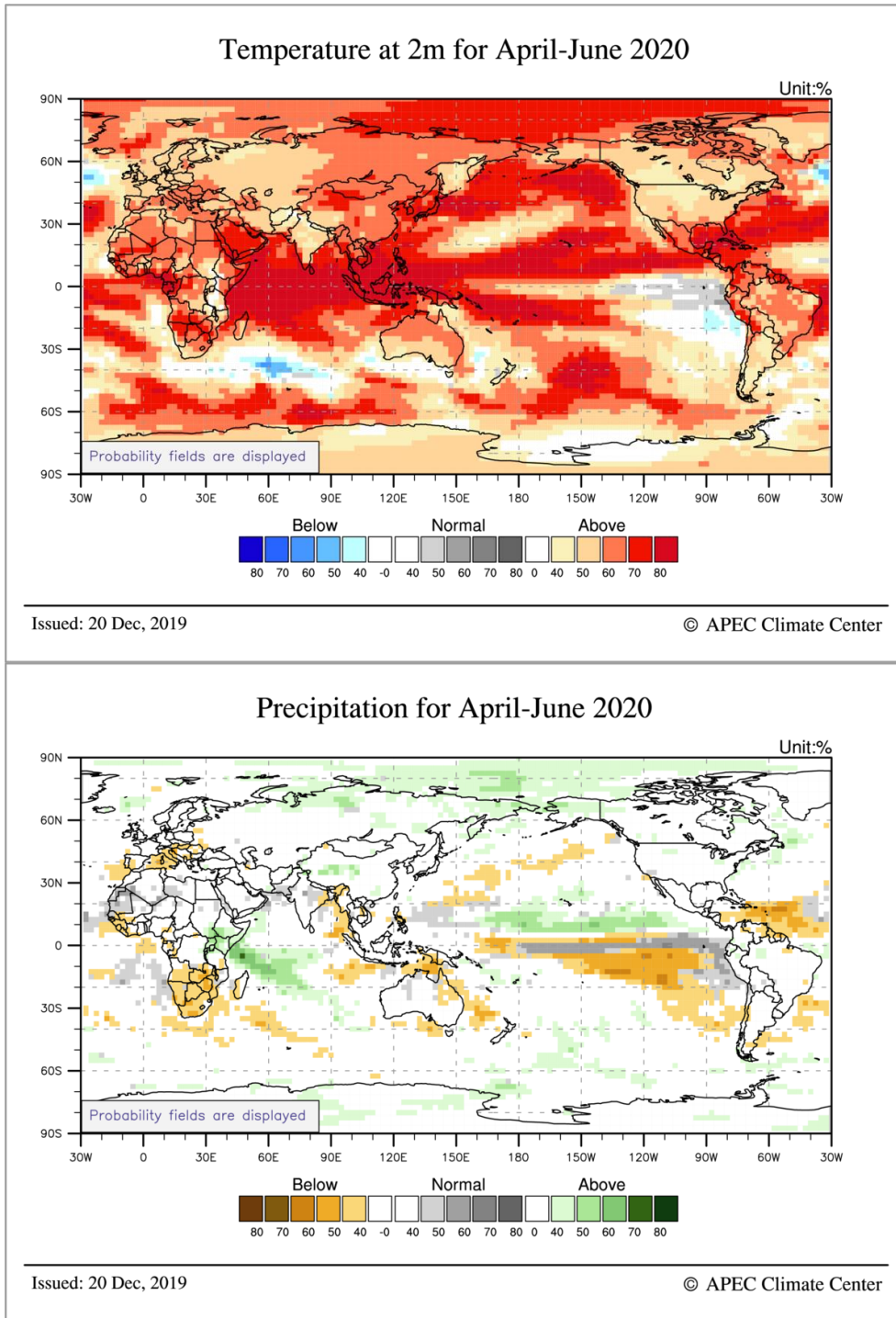
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**Fig. 5.** Predicted monthly mean Niño3.4 index from individual models and the MME for January – June 2020 (top). Probabilistic MME forecasts of the status and intensity based on 3-month mean Niño3.4 index for four overlapping 3-month mean periods (bottom). Anomalies are computed with respect to the common base period of participating models in the APCC MME prediction (1992-2011).



**Fig. 6.** Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for January – March 2020. Normal conditions are computed with respect to the common base period of participating models in the APCC MME prediction (1992-2011).



**Fig. 7.** Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for April – June 2020. Normal conditions are computed with respect to the common base period of participating models in the APCC MME prediction (1992-2011).

\* More information on current climate conditions is available at:

<http://www.apcc21.org/ser/high.do?lang=en>

\* More information on prediction and verification results is available at:

<http://www.apcc21.org/ser/outlook.do?lang=en>

*This outlook is prepared by the Climate Prediction Department in the Climate Services and Research Division, APCC.*

*If you would like to subscribe to our Climate Outlook or have any questions, please e-mail [mme@apcc21.org](mailto:mme@apcc21.org).*

#### **Acknowledgements**

*The APEC Climate Center is a major APEC science facility, which was established in November 2005 during the leaders meeting of the Asia-Pacific Economic Forum in Busan, Korea. The APCC climate forecasts are based on model simulations from 14 prominent climate forecasting centers and institutes in the APEC region. These forecasts are collected and combined using state-of-the-art schemes to produce a statistically 'consensual' forecast. APCC collects seasonal forecasts from 14 institutes in the APEC region: the Australian Bureau of Meteorology (BoM), Meteorological Service of Canada (MSC), Beijing Climate Center China (BCC), Japan Meteorological Agency Japan (JMA), APEC Climate Center Korea (APCC), Korea Meteorological Administration (KMA), Pusan National University Korea (PNU), Met Office United Kingdom (UKMO), Euro-Mediterranean Center on Climate Change Italy (CMCC), Hydrometeorological Research Center of Russia (HMC), Voeikov Main Geophysical Observatory of Russia (MGO), Central Weather Bureau Chinese Taipei (CWB), National Aeronautics and Space Administration USA (NASA), and the National Centers for Environmental Prediction USA (NCEP).*