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APCC Monthly Climate Outlook for March – August 2020

(Issued: February 20, 2020)

- ***During January 2020, weak positive Niño3.4 index was observed with weak positive sea surface temperature anomalies over the western and central equatorial Pacific.***
- ***The latest APCC ENSO outlook suggests the probability for ENSO neutral conditions (60%) is dominant during March – May 2020. The probability for the conditions is likely to continue and be still dominant (53%) until June – August 2020.***
- ***Positive temperature anomalies are likely to prevail over most of the globe, especially over Eurasia, Africa, the western tropical Pacific, northwestern and northern North Pacific, tropical Atlantic, and the Indian Ocean (excluding southern Indian Ocean) for March – August 2020.***
- ***Below normal precipitation anomalies are predicted for the central and eastern off-equatorial South Pacific for March – May 2020, whereas the anomalies are predicted for equatorial Pacific for June – August 2020.***

Current Climate Conditions

In January 2020, weak positive equatorial sea surface temperature (SST) anomalies remained over the western and central equatorial Pacific, while the weak negative anomalies remained over the eastern off-equatorial South Pacific. Suppressed tropical convection over Indonesia persisted, while tropical convection and westerly wind anomalies over the Date Line persisted. Positive monthly mean temperature anomalies exceeding +4^{o}C were observed over Northern Europe and central Russia. Negative anomalies spanned over the Barents Sea, Alaska, western Canada, Arctic Archipelago, Greenland, North Africa, and some austral seas. Positive monthly mean precipitation anomalies were observed over the western Indian Ocean, whereas negative anomalies spanned over the eastern Indian Ocean, and the maritime continent [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 western and central equatorial Pacific are predicted during March – May 2020, and a weak cold tongue is expected to expand over the eastern equatorial Pacific during June – August 2020, which corresponds to a decreasing Niño3.4 index from 0.43^{o}C to -0.27^{o}C. In summary, based on the running 3-month mean Niño3.4 index, the APCC ENSO outlook suggests 60% chance of ENSO neutral conditions is dominant during March to May 2020. The chance for the neutral conditions is likely to continue and be still dominant (53%) until June to August 2020 [Figs. 4 and 5].

Temperature and Precipitation Outlook:

1. Forecast for March – May 2020

Strongly enhanced probability for above normal temperatures is predicted for the tropical Pacific (excluding the eastern off-equatorial South Pacific), northwestern and northern North Pacific, maritime continent, East Asia, the Indian Ocean (excluding southern region), tropical Atlantic, Caribbean Sea, and northern South America. Enhanced probability for above normal temperatures is expected for the Arctic, Eurasia (excluding South Asia), Africa, Australia, and Central and southern South America. Enhanced probability for below normal temperatures is predicted for the eastern South Pacific, northern North Atlantic, and the southern Indian Ocean. Enhanced probability for above normal precipitation is expected for the central off-equatorial North Pacific, off-equatorial South Atlantic, western Indian Ocean, northern Russia, and the western Arctic Ocean. Strongly enhanced probability for below normal precipitation is predicted for the central and eastern off-equatorial South Pacific. Enhanced probability for below normal precipitation is expected for the Bay of Bengal, eastern South Pacific, and the tropical North Atlantic. Enhanced probability for near normal precipitation is predicted for the central and eastern equatorial Pacific [Fig. 6].

2. Forecast for June – August 2020

Strongly enhanced probability for above normal temperatures is predicted for the tropical Pacific (excluding the equatorial Pacific), northwestern, northeastern, and northern North Pacific, southern South Pacific, maritime continent, the Indian Ocean (excluding eastern and southern regions), tropical Atlantic, Caribbean Sea, Eurasia (excluding India and western Russia), North Africa, Canada, and western USA. Enhanced probability for above normal temperatures is expected for the Arctic, southern Africa, eastern USA, Central and South America. Enhanced probability for below normal temperatures is predicted for the equatorial Pacific and the eastern South Pacific. Enhanced probability for below normal precipitation is expected for the equatorial Pacific. Enhanced probability for near normal precipitation is predicted for northern and southern Africa, and northern Saudi Arabia [Fig. 7].

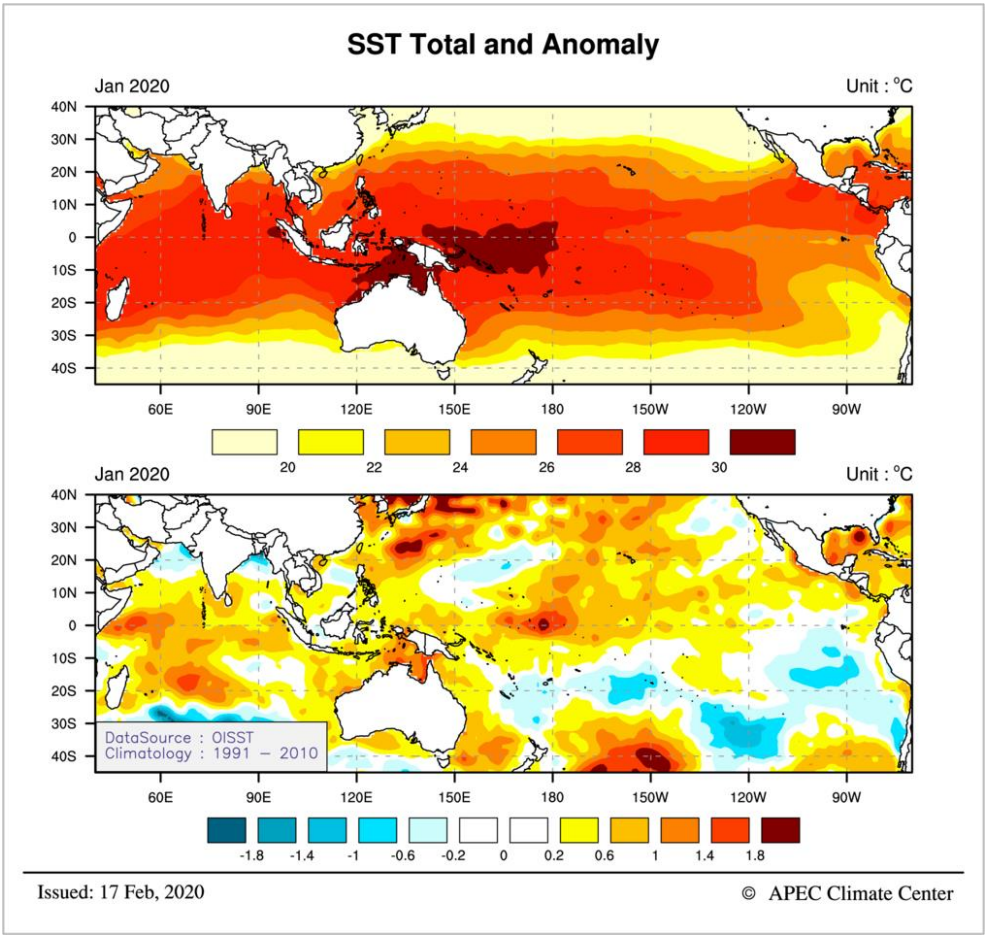

Fig. 1. Monthly mean observed sea surface temperatures (SSTs; top) and anomalies (bottom) for January 2020.

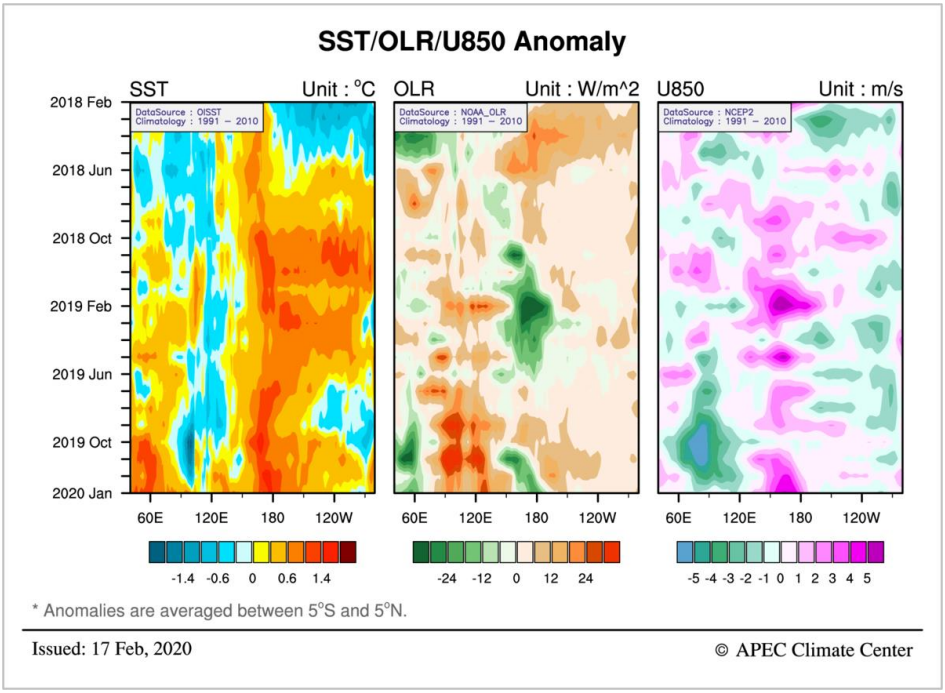

Fig. 2. Time-longitude cross section of the observed monthly mean SST anomalies, outgoing longwave radiation (OLR) anomalies, and zonal wind anomalies at 850hPa (U850) along the equator (5°S-5°N) in the Indian and Pacific Oceans (40°E-80°W) for February 2018 – January 2020.

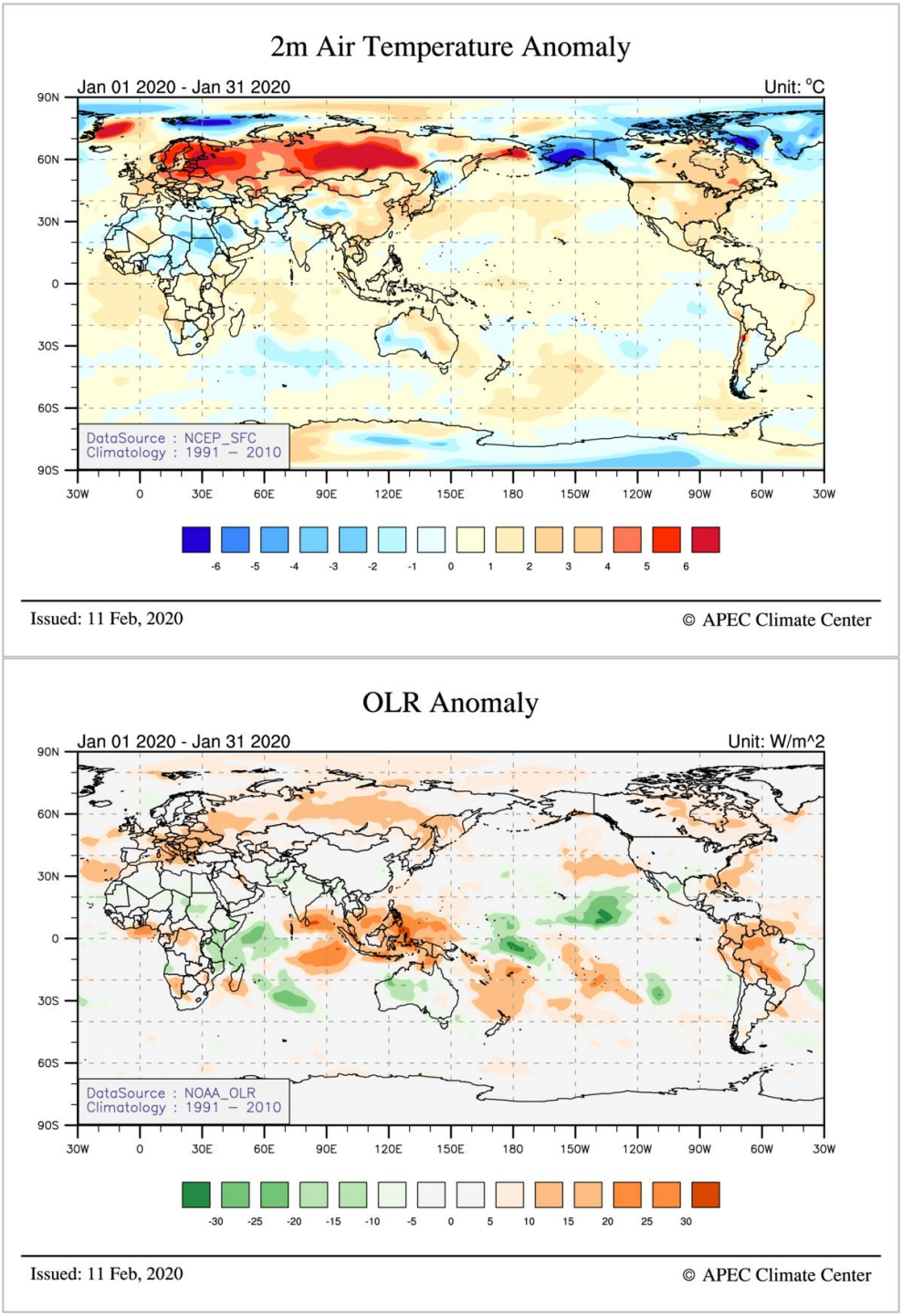

Fig. 3. Monthly mean anomalies of the observed 2m air temperature (top) and OLR (bottom) for January 2020.

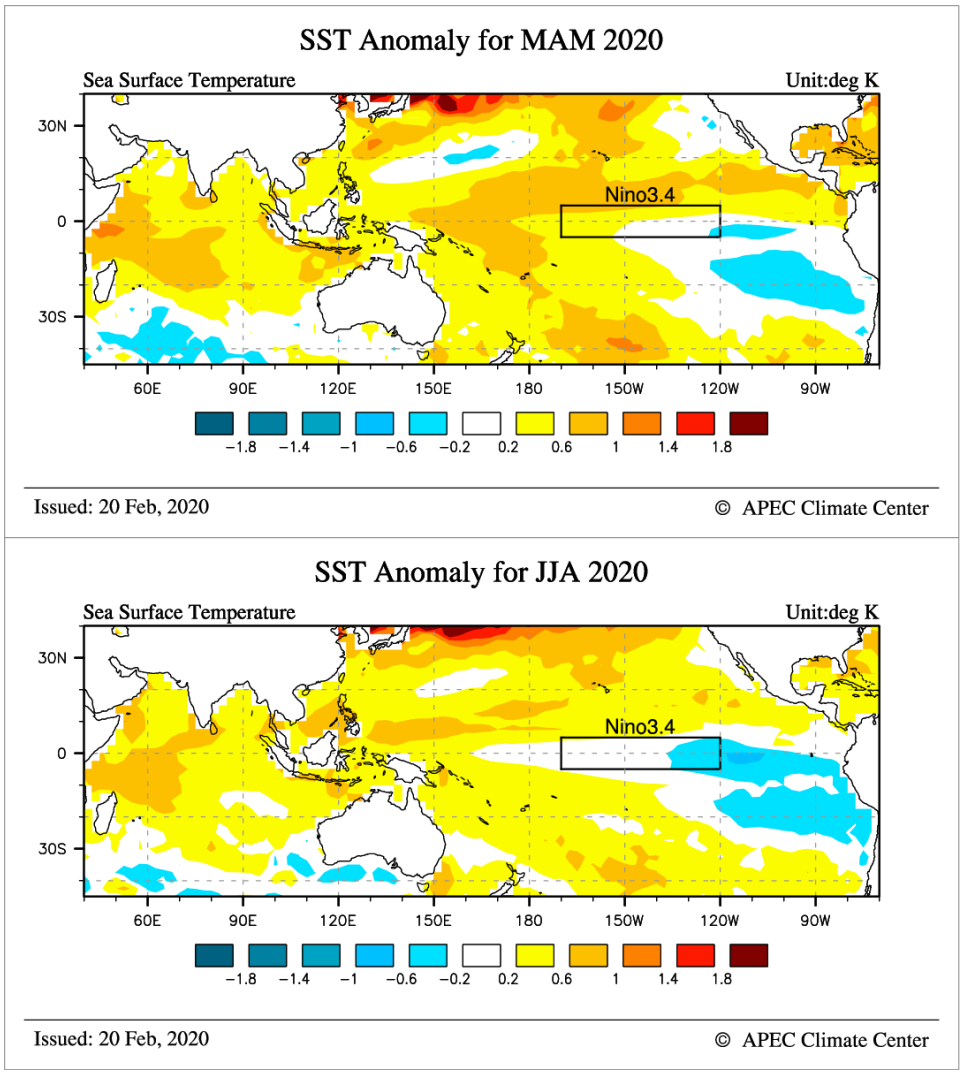

Fig. 4. Multi-model ensemble (MME) forecasts of SST anomalies for March – May 2020 (top) and June – August 2020 (bottom). Anomalies are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

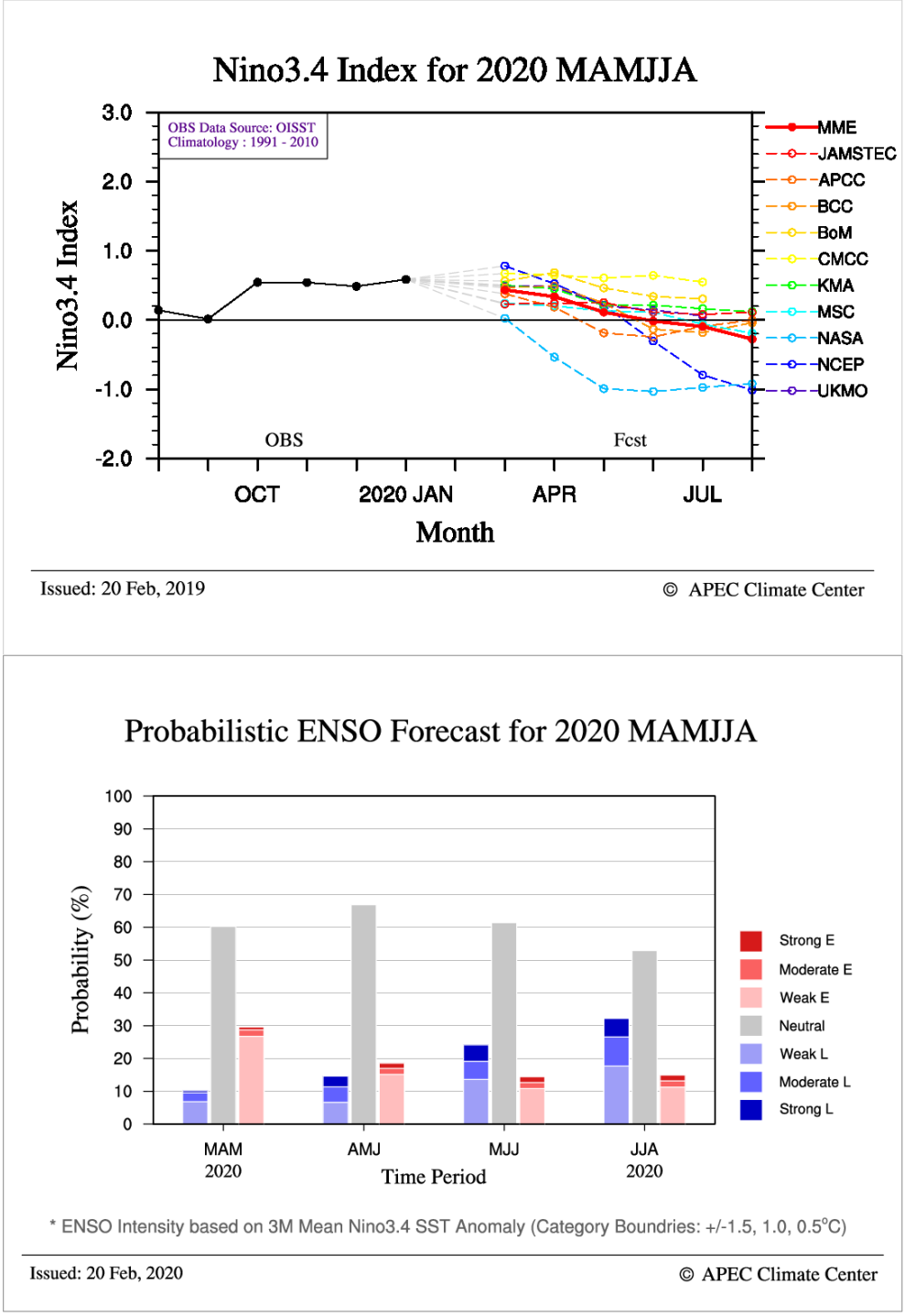

Fig. 5. Predicted monthly mean Niño3.4 index from individual models and the MME for March – August 2020 (top). Probabilistic MME forecasts of the status and intensity based on 3-month mean Niño3.4 index for four overlapping 3-month mean periods (bottom). Anomalies are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

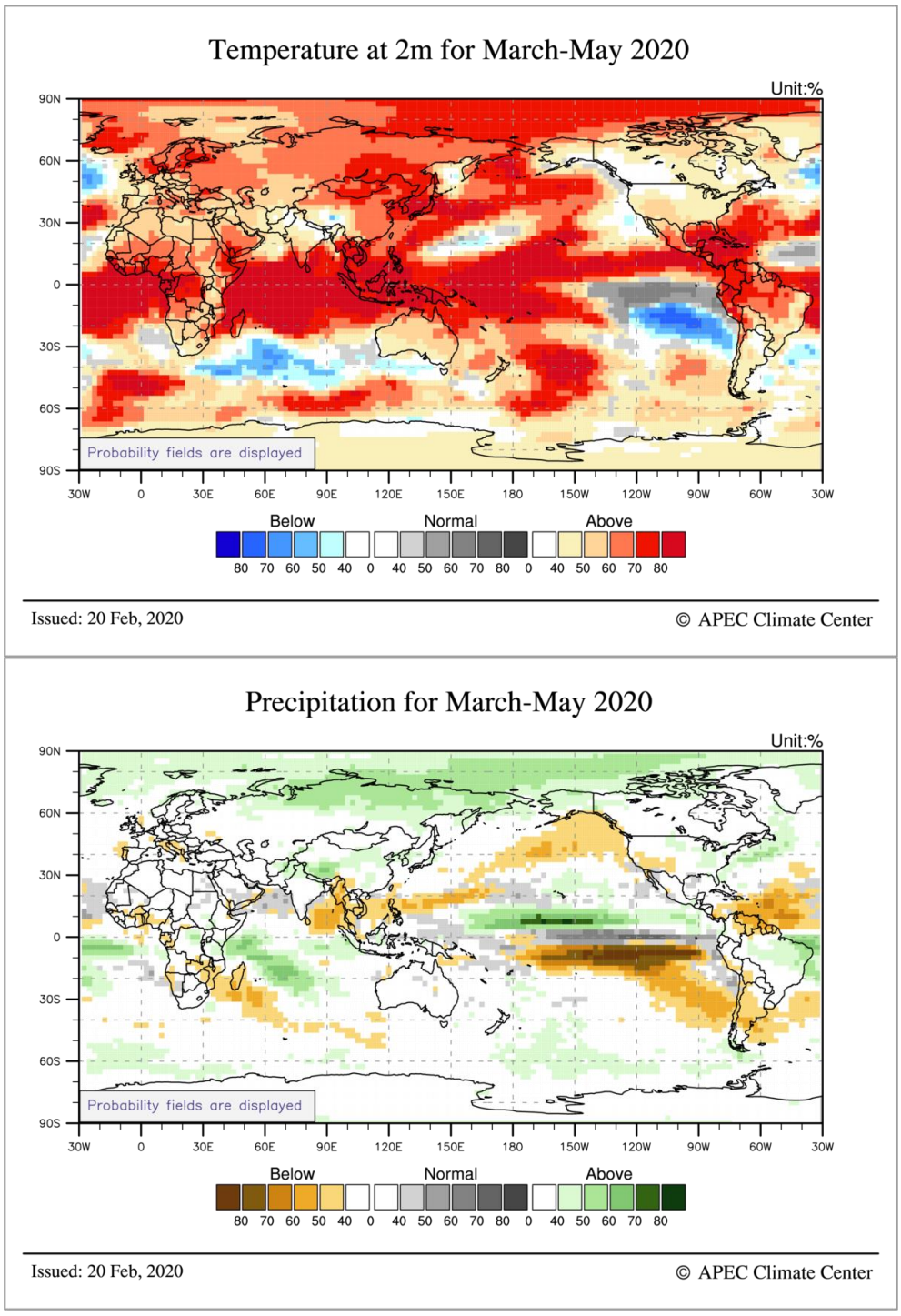

Fig. 6. Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for March – May 2020. Normal conditions are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

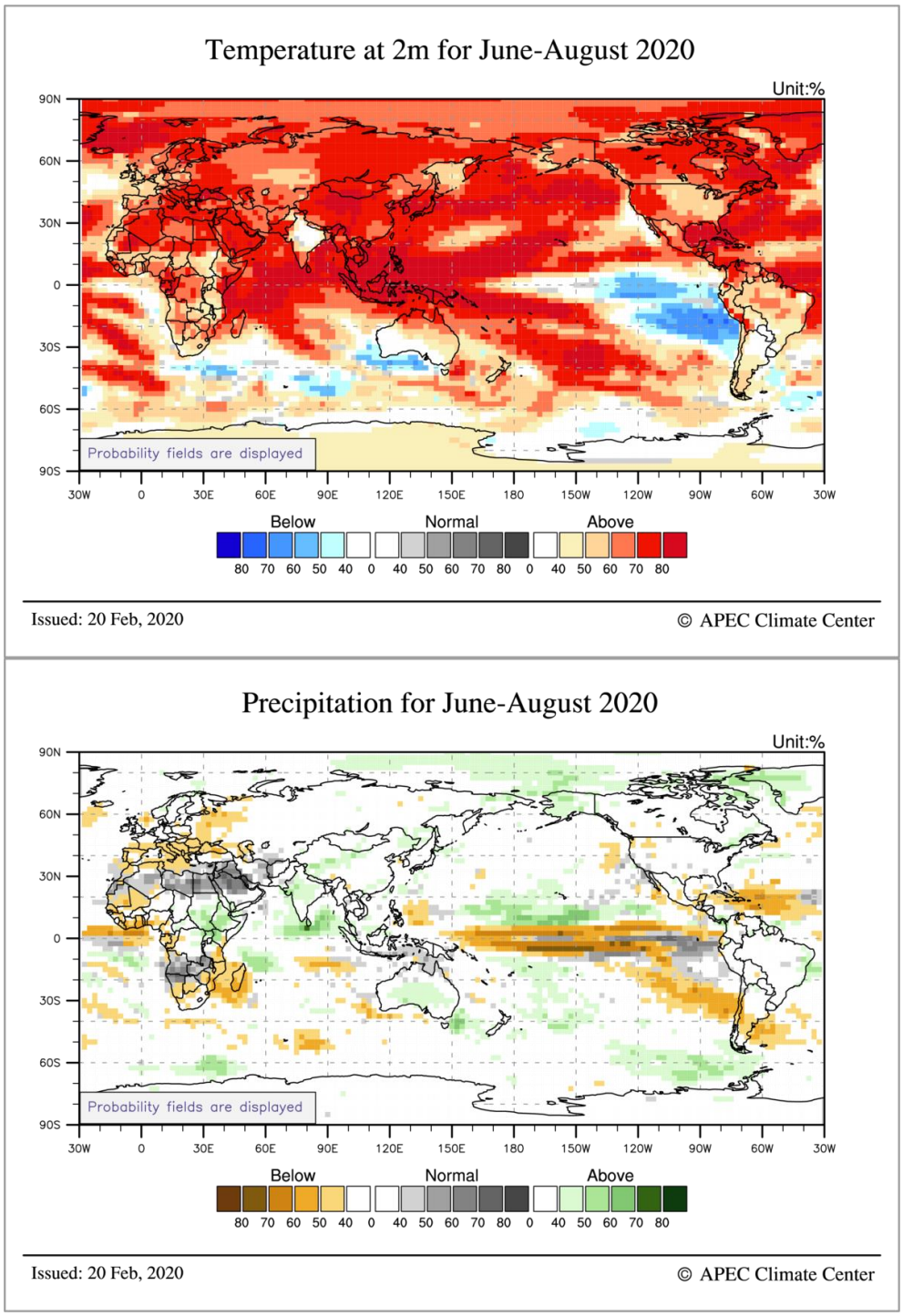

Fig. 7. Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for June – August 2020. Normal conditions are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

* 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.

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).