



APCC Monthly Climate Outlook for September 2020 – February 2021

(Issued: Aug 20, 2020)

- *During July 2020, ENSO neutral conditions continued with weak negative sea surface temperature anomalies over the central and eastern equatorial Pacific.*
- *The latest APCC ENSO outlook suggests a 74% probability of La Niña with weak intensity during September – November 2020 and a 59% probability for the same conditions during December 2020 – February 2021.*
- *Strongly enhanced probability for above normal temperatures is predicted for the Arctic, western tropical Pacific (excluding equatorial region), Arabian Sea, and the tropical Atlantic for September 2020 – February 2021.*
- *Strongly enhanced probability for below normal precipitation is predicted for the western equatorial Pacific for September – November 2020, and enhanced probability for below normal precipitation is expected for the same region for December 2020 – February 2021.*

Current Climate Conditions

In July 2020, weak negative equatorial sea surface temperature (SST) anomalies were observed over the central and eastern equatorial Pacific. Suppressed tropical convection persisted along the central Pacific and wind anomalies at 850hPa were easterly along the equatorial Pacific, which is consistent with ENSO neutral conditions. Negative monthly mean temperature anomalies were observed over northern Russia, western China, Alaska, and western Canada. Positive monthly mean precipitation anomalies were observed over the Arabian Sea, western Indian Ocean near northern Madagascar, eastern China, South Korea, and Japan. Negative anomalies spanned over western Russia, the Indochinese Peninsula, and the western North Pacific [Figs. 1, 2, and 3].

Discussion of Climate Forecast

SST and ENSO Outlook:

The prevailing ENSO phase is expected to be negative. Negative SST anomalies along the equatorial Pacific are predicted during September 2020 – February 2021. Along with these spatial distributions, nine out of ten dynamical coupled models predict negative Niño3.4 index for the whole forecast period. As a result, a Niño3.4 index below or around -0.5°C is predicted. In summary, based on the running 3-month mean Niño3.4 index, the APCC ENSO outlook suggests La Niña conditions (74% probability) with weak intensity for September to November 2020 and the probability for the conditions is likely to decrease to 59% for December 2020 to February 2021 [Figs. 4 and 5].

Temperature and Precipitation Outlook:

1. Forecast for September – November 2020

Strongly enhanced probability for above normal temperatures is predicted for the Pacific (excluding central and eastern tropical region, the northwestern North Pacific, and the eastern South Pacific), maritime continent, Myanmar, southwestern China, the eastern and western Indian Ocean, tropical and subtropical Atlantic, Caribbean Sea, and the Arctic. Enhanced probability for above normal temperatures is expected for western China, Russia, western USA, South America, northwestern and southern Africa, and northern Australia. A tendency for above normal temperatures is predicted for Eurasia (excluding western China, Myanmar, Russia, and the maritime continent), Canada, eastern USA, and the Antarctic. Enhanced probability for below normal temperatures is expected for the central and eastern tropical Pacific. Enhanced probability for above normal precipitation is predicted for the eastern Arctic and the maritime continent. A tendency for above normal precipitation is expected for eastern Australia, India, northern Russia, and Canada. Strongly enhanced probability for below normal precipitation is predicted for the western equatorial Pacific. Enhanced probability for below normal precipitation is expected for eastern South Pacific (excluding equatorial region and west coast of South America). A tendency for below normal precipitation is predicted for northwestern Africa, the Middle East, southern Indian Ocean, northern North Atlantic, southern USA, and southern Argentina. Enhanced probability for near normal precipitation is expected for the central and eastern equatorial Pacific and northeastern Africa [Fig. 6].

2. Forecast for December 2020 – February 2021

Strongly enhanced probability for above normal temperatures is predicted for the western tropical Pacific (excluding equatorial region), Arabian Sea, tropical Atlantic, subtropical North Atlantic, and the Arctic. Enhanced probability for above normal temperatures is expected for Russia, western China, Eastern Europe, southern USA, Central America, southern Africa, the western and eastern Indian Ocean, and the Antarctic. A tendency for above normal temperatures is predicted for Eurasia (excluding Russia, western China, and Eastern Europe), northern Africa, Australia, northern USA, and South America (excluding northwestern Brazil). Enhanced probability for below normal temperatures is expected for the central equatorial Pacific. Enhanced probability for above normal precipitation is predicted for the Barents and Kara Seas, South China and Philippine Seas, off-equatorial North Pacific, Pacific Island countries, western and eastern Russia, and southern Canada. Enhanced probability for below normal precipitation is expected for the western equatorial Pacific and the eastern South Pacific (excluding equatorial region and west coast of South America), northeastern North Pacific, Mexico, and the Gulf of Mexico. Enhanced probability for near normal precipitation is predicted for the central and eastern equatorial Pacific. A tendency for near normal precipitation is expected for the Sahel region [Fig. 7].

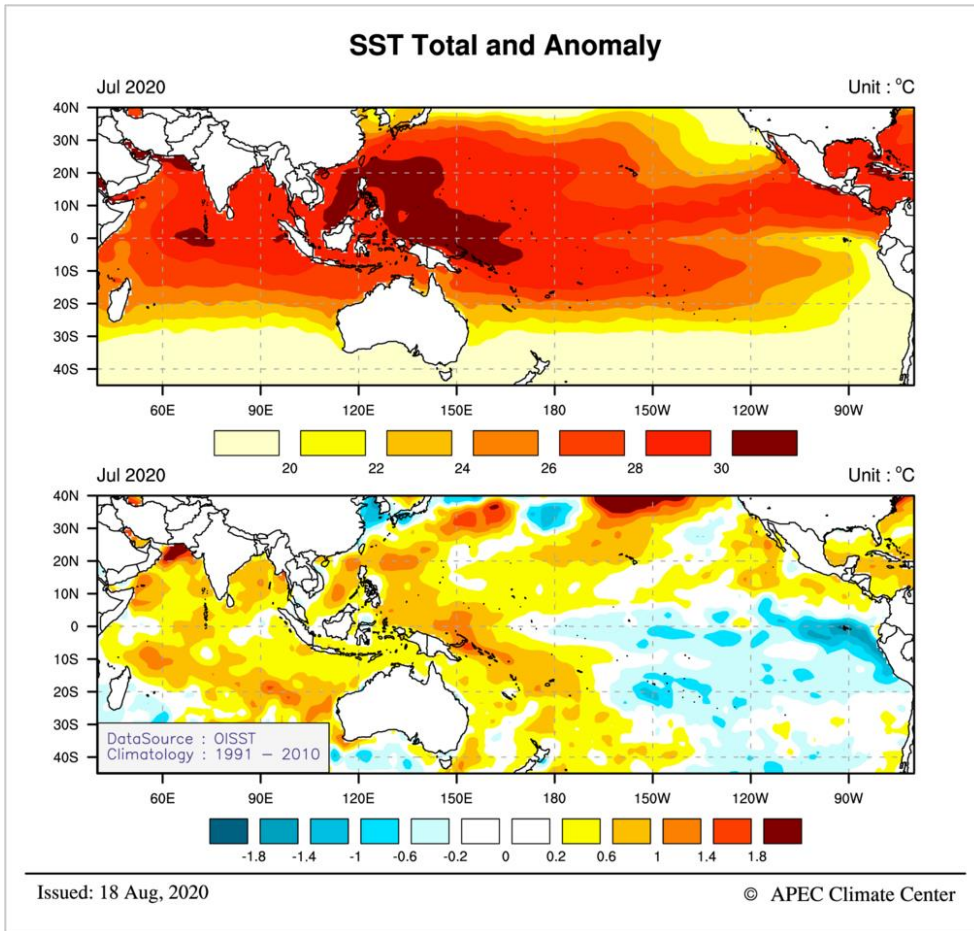


Fig. 1. Monthly mean observed sea surface temperatures (SSTs; top) and anomalies (bottom) for July 2020.

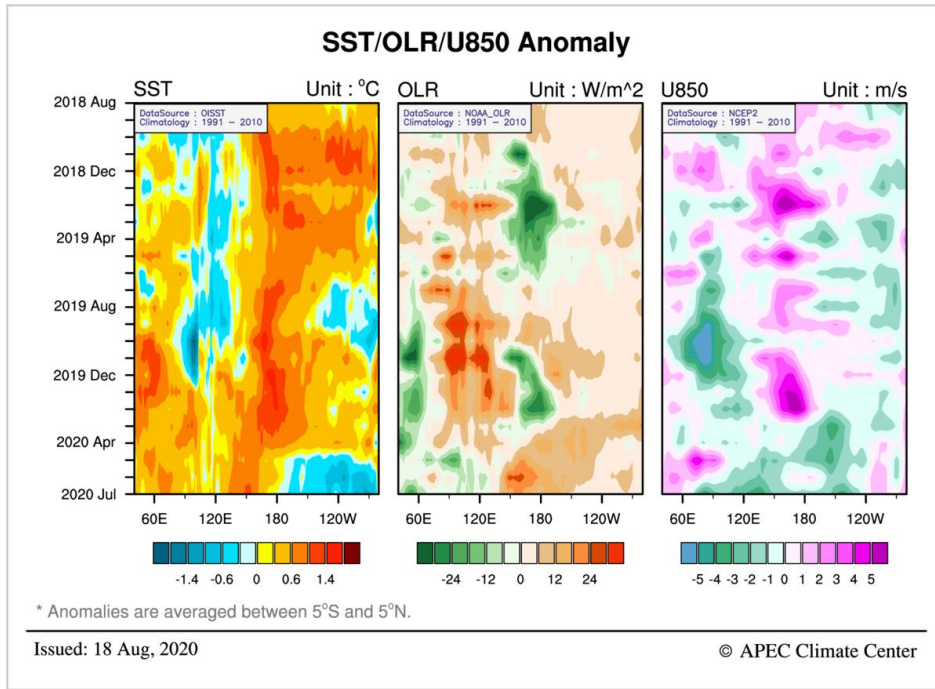


Fig. 2. Time-longitude cross section of the observed monthly mean SST anomalies, outgoing longwave radiation (OLR) anomalies, and zonal wind anomalies at 850hPa (U850) along the equator (5°S-5°N) in the Indian and Pacific Oceans (40°E-80°W) for August 2018 – July 2020.

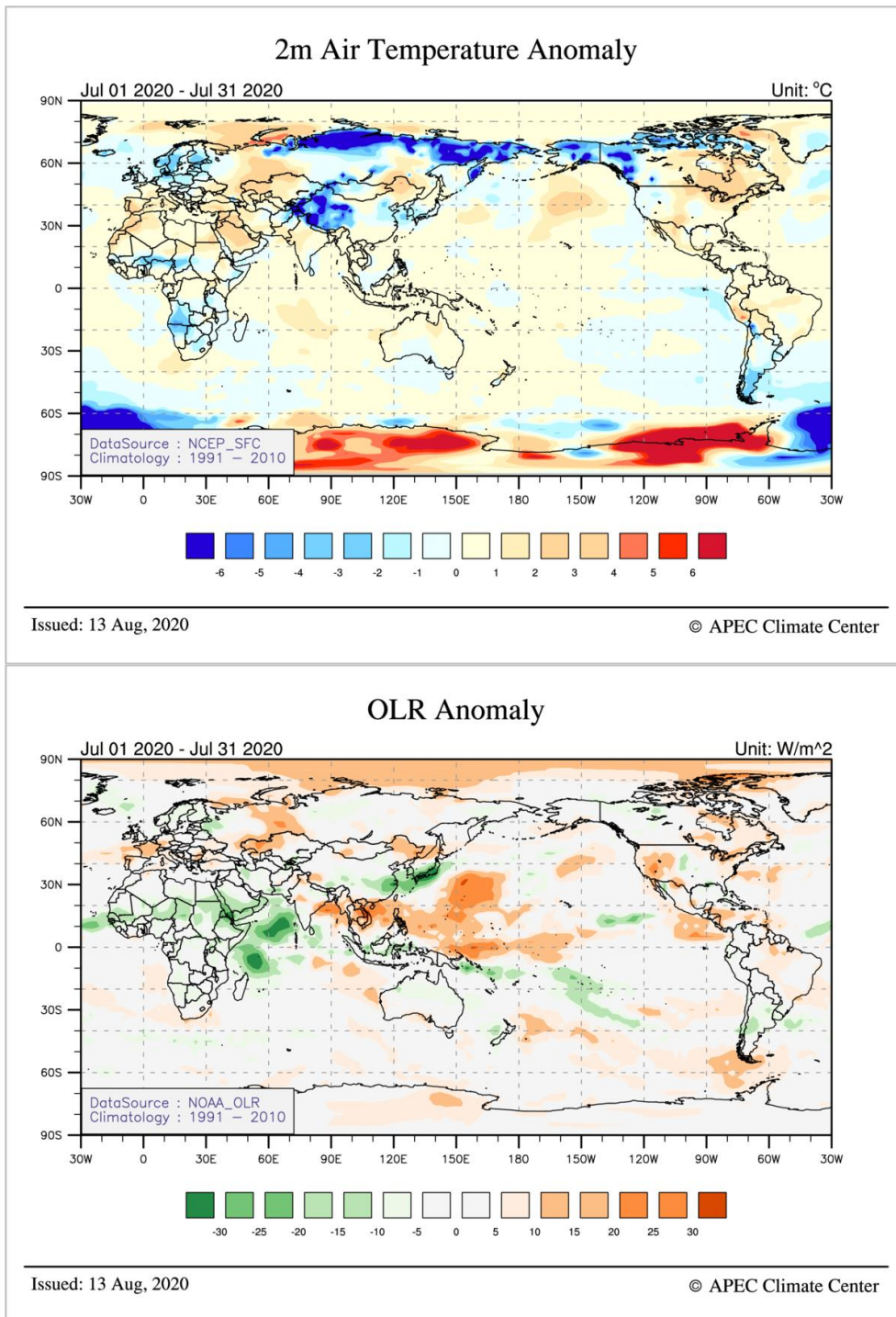


Fig. 3. Monthly mean anomalies of the observed 2m air temperature (top) and OLR (bottom) for July 2020.

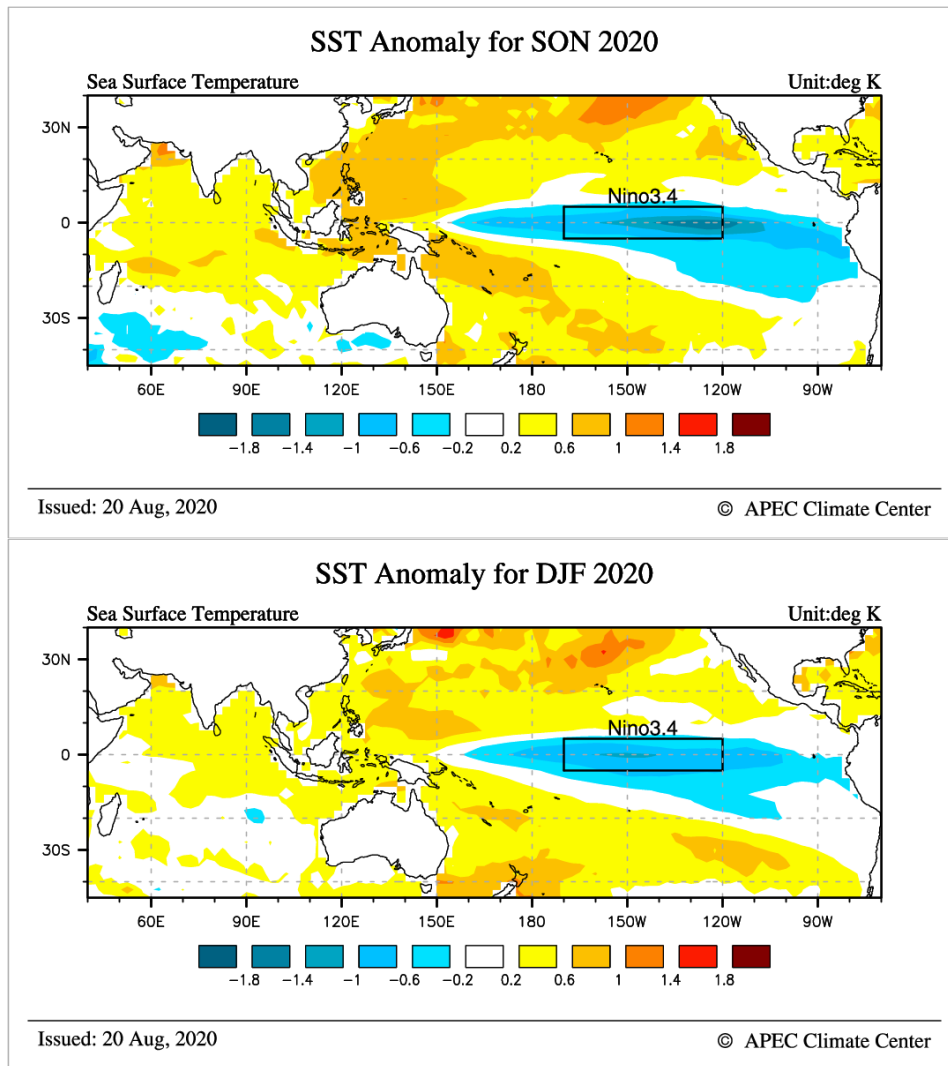


Fig. 4. Multi-model ensemble (MME) forecasts of SST anomalies for September – November 2020 (top) and December 2020 – February 2021 (bottom). Anomalies are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

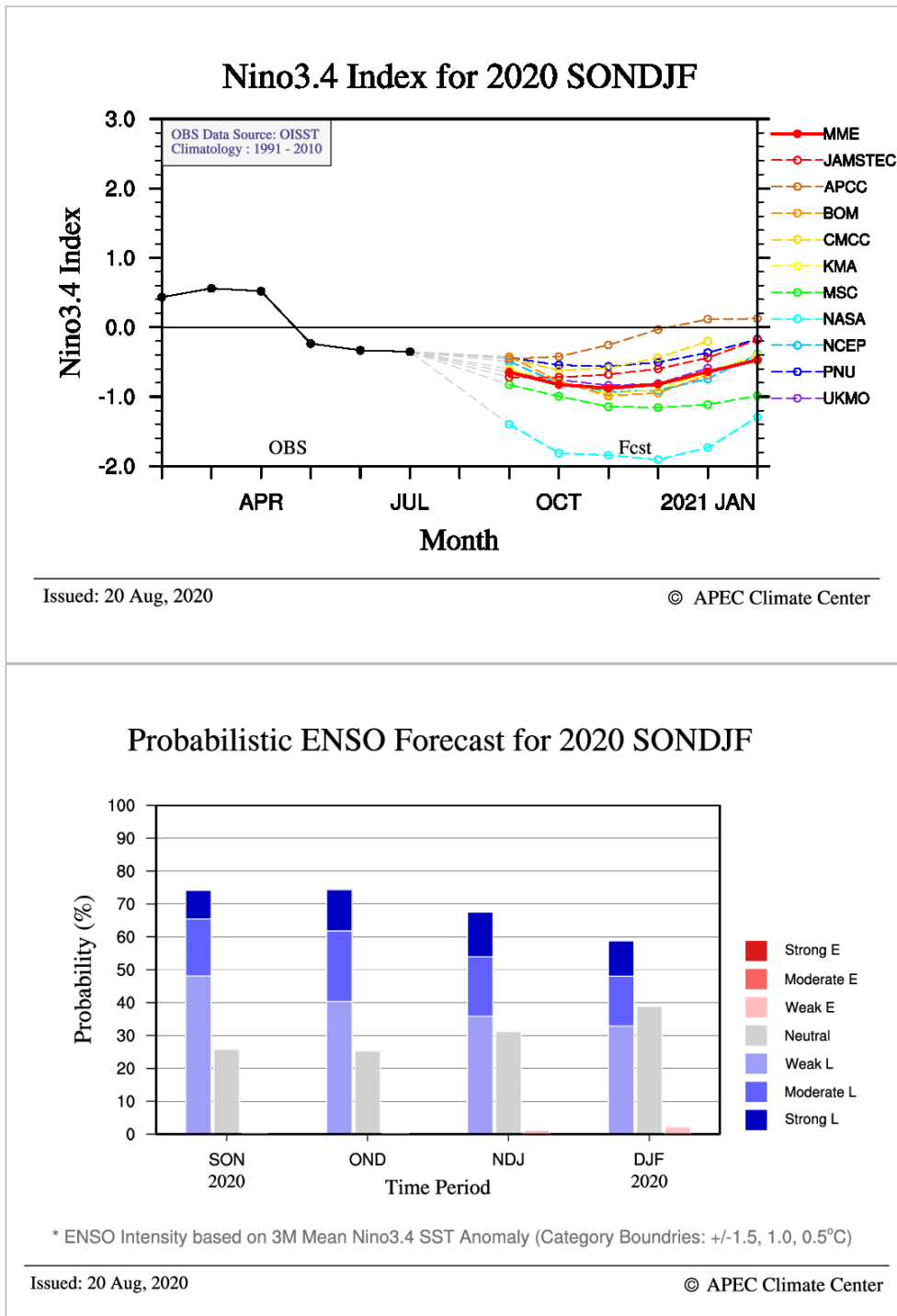


Fig. 5. Predicted monthly mean Niño3.4 index from individual models and the MME for September 2020 – February 2021 (top). Probabilistic MME forecasts of the status and intensity based on 3-month mean Niño3.4 index for four overlapping 3-month mean periods (bottom). Anomalies are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

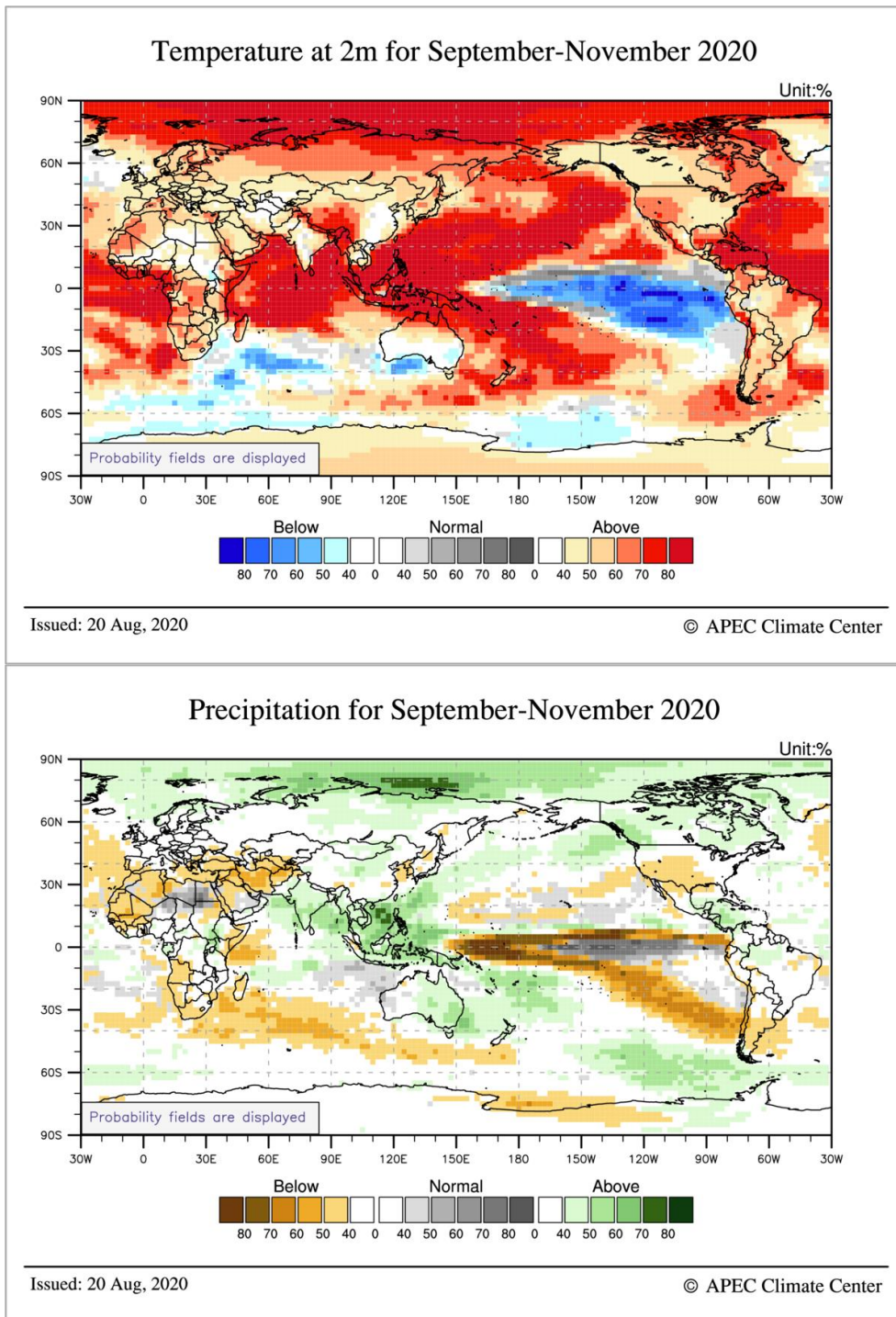


Fig. 6. Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for September – November 2020. Normal conditions are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

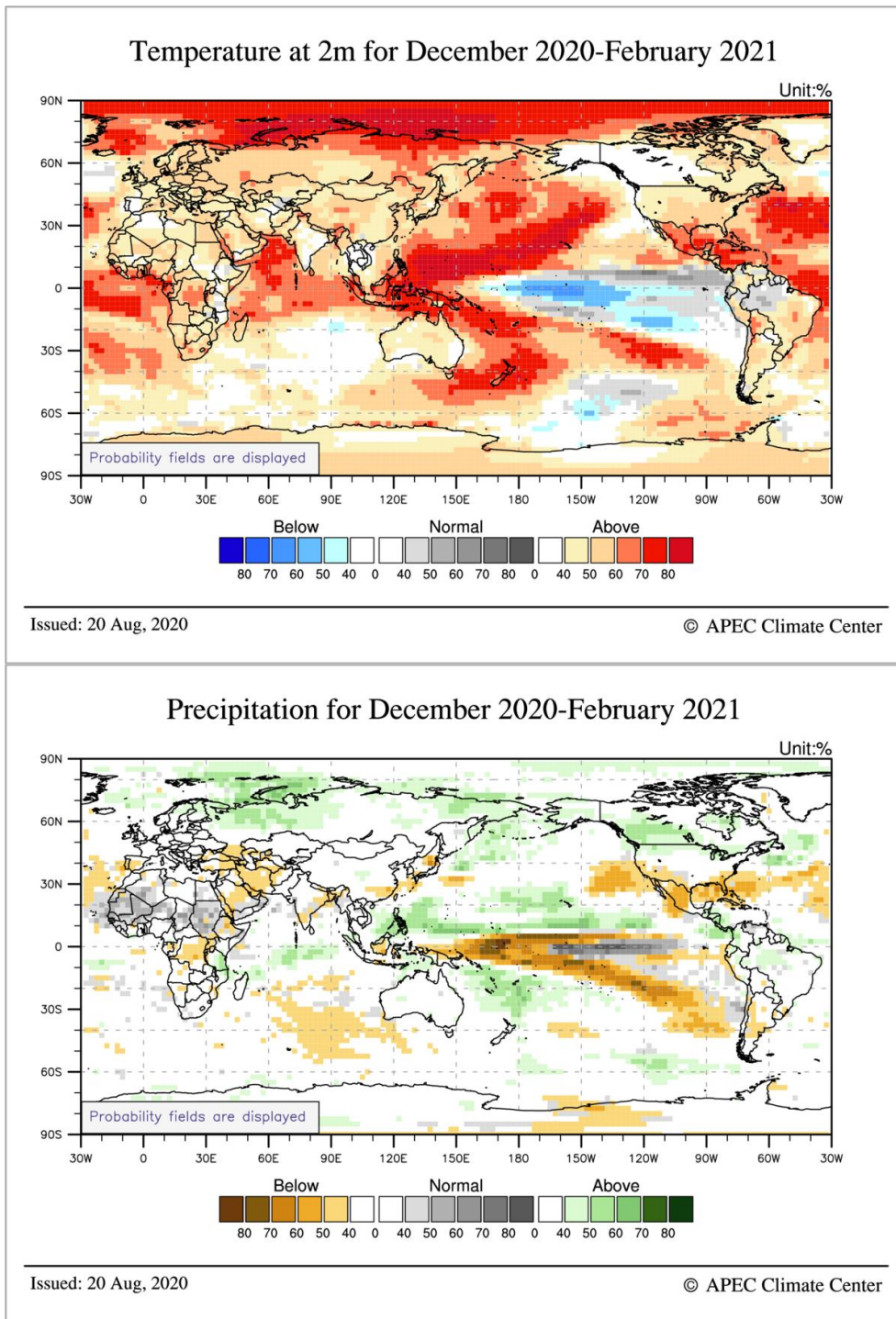


Fig. 7. Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for December 2020 – February 2021. Normal conditions are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

* 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).