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APCC Monthly Climate Outlook for August 2020 – January 2021

(Issued: Jul 20, 2020)

- ***During June 2020, weak negative sea surface temperature anomalies were observed over the central and eastern equatorial Pacific.***
- ***The latest APCC ENSO outlook suggests around a 60% chance of La Niña conditions with a weak intensity during August 2020 – January 2021.***
- ***Strongly enhanced probability for above normal temperatures is predicted for the Arctic, western tropical Pacific (excluding equatorial region), northern North Pacific, and the tropical Atlantic for August 2020 – January 2021.***
- ***Strongly enhanced probability for below normal precipitation is predicted for the western equatorial Pacific for August – October 2020, and enhanced probability for below normal precipitation is expected for the same region for November 2020 – January 2021.***

Current Climate Conditions

In June 2020, weak negative equatorial sea surface temperature (SST) anomalies were observed over the central and eastern equatorial Pacific. Suppressed tropical convection and easterly wind anomalies persisted along the central Pacific, which is consistent with ENSO neutral conditions. Negative monthly mean temperature anomalies were observed over Russia (excluding central region), western China and Mongolia, Alaska, and western Canada. Positive monthly mean precipitation anomalies were observed over India, whereas negative anomalies spanned over eastern Russia, Northern Europe, and the western equatorial 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 August 2020 – January 2021. Along with these spatial distributions, nine out of eleven dynamical coupled models predict negative Niño3.4 index for the whole forecast period. As a result, a Niño3.4 index below -0.5^{o}C is predicted. In summary, based on the running 3-month mean Niño3.4 index, the APCC ENSO outlook suggests a 60% chance of La Niña conditions with weak intensity (~43%) is dominant during August to October 2020. The chance for the conditions is likely to persist until November 2020 to January 2021 with the same intensity (~29%) [Figs. 4 and 5].

Temperature and Precipitation Outlook:

1. Forecast for August – October 2020

Strongly enhanced probability for above normal temperatures is predicted for the Pacific (excluding equatorial region and the eastern South Pacific), eastern and western Indian Ocean, southwestern China, the tropical and subtropical Atlantic, Caribbean Sea, and the Arctic. Enhanced probability for above normal temperatures is expected for East Asia (excluding eastern China), Russia, the maritime continent, America, Africa (excluding northeastern and central regions), and northern Australia. A tendency for above normal temperatures is predicted for Europe and Central Asia. Enhanced probability for below normal temperatures is expected for the eastern tropical Pacific. Enhanced probability for above normal precipitation is predicted for western India, Pakistan, the Bay of Bengal, western Indian Ocean near northern Madagascar, and South China Sea. A tendency for above normal precipitation is expected for eastern Australia, the northern North Pacific, Canada (excluding southern region), and the Arctic. Strongly enhanced probability for below normal precipitation is predicted for the western equatorial Pacific and the central and eastern off-equatorial North Pacific. Enhanced probability for below normal precipitation is expected for eastern South Pacific (excluding equatorial region), Madagascar, and the Indian Ocean near Madagascar and Somalia. A tendency for below normal precipitation is predicted for southern Africa and southern Argentina. Enhanced probability for near normal precipitation is expected for the eastern equatorial Pacific and northern North Africa [Fig. 6].

2. Forecast for November 2020 – January 2021

Strongly enhanced probability for above normal temperatures is predicted for the northern North Pacific, western tropical Pacific (excluding equatorial region), Tasman Sea, tropical Atlantic, subtropical South Atlantic, Caribbean Sea, and the Arctic. Enhanced probability for above normal temperatures is expected for Russia, western China, southern USA, Central America, southern South America, South Africa, and the western and eastern Indian Ocean. A tendency for above normal temperatures is predicted for Europe, Central Asia, and northwestern Australia. Enhanced probability for below normal temperatures is predicted for the central equatorial Pacific and eastern off-equatorial South Pacific. Enhanced probability for above normal precipitation is expected for the South China and Philippine Seas and the eastern Arctic. A tendency for above normal precipitation is predicted for Russia and Alaska. Enhanced probability for below normal precipitation is expected for the western equatorial Pacific and the central off-equatorial Pacific. A tendency for below normal precipitation is predicted for the eastern South Pacific (excluding equatorial region), eastern China, Central Asia (excluding Kazakhstan), Mexico, and southern Argentina. Enhanced probability for near normal precipitation is expected for the central and eastern equatorial Pacific. A tendency for near normal precipitation is predicted for northern Africa [Fig. 7].

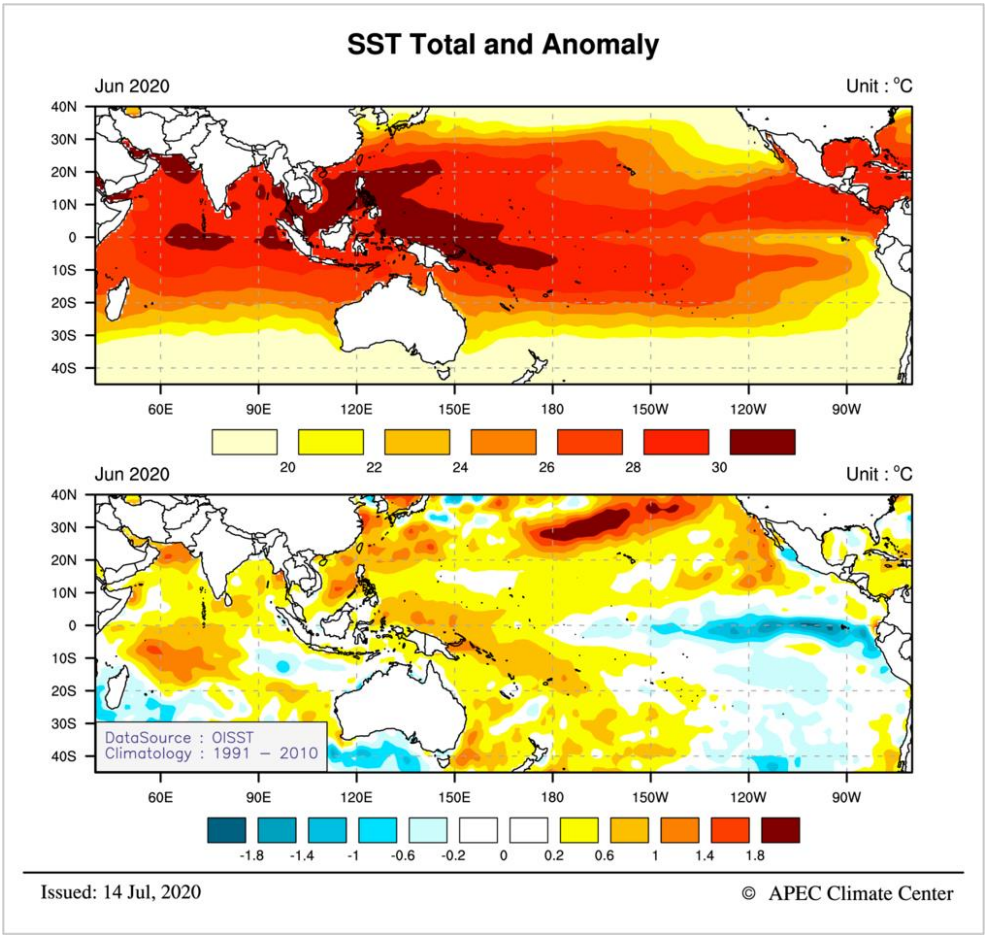

Fig. 1. Monthly mean observed sea surface temperatures (SSTs; top) and anomalies (bottom) for June 2020.

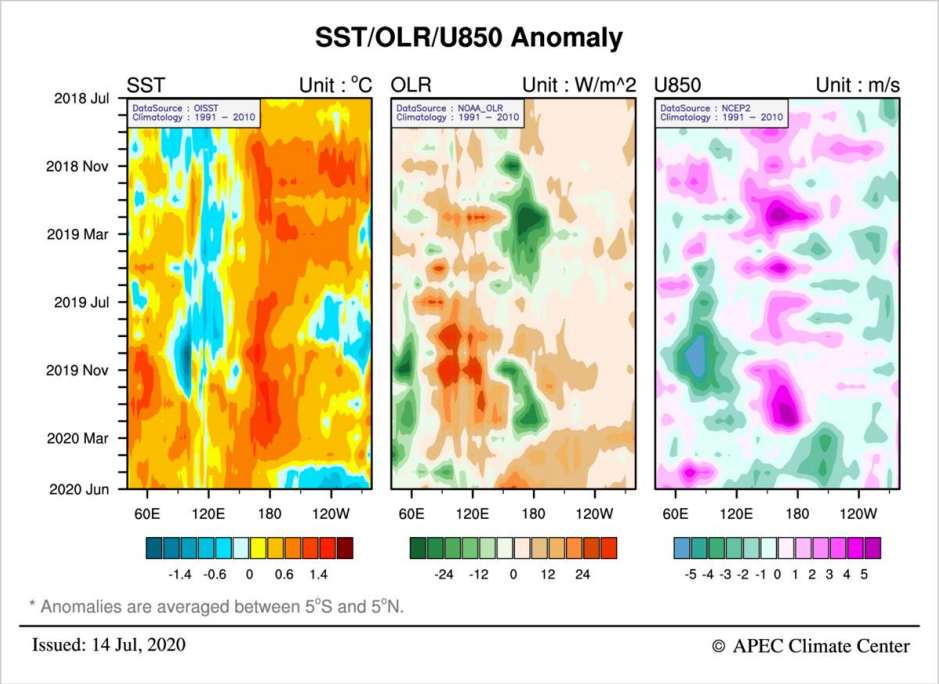

Fig. 2. Time-longitude cross section of the observed monthly mean SST anomalies, outgoing longwave radiation (OLR) anomalies, and zonal wind anomalies at 850hPa (U850) along the equator (5°S-5°N) in the Indian and Pacific Oceans (40°E-80°W) for July 2018 – June 2020.

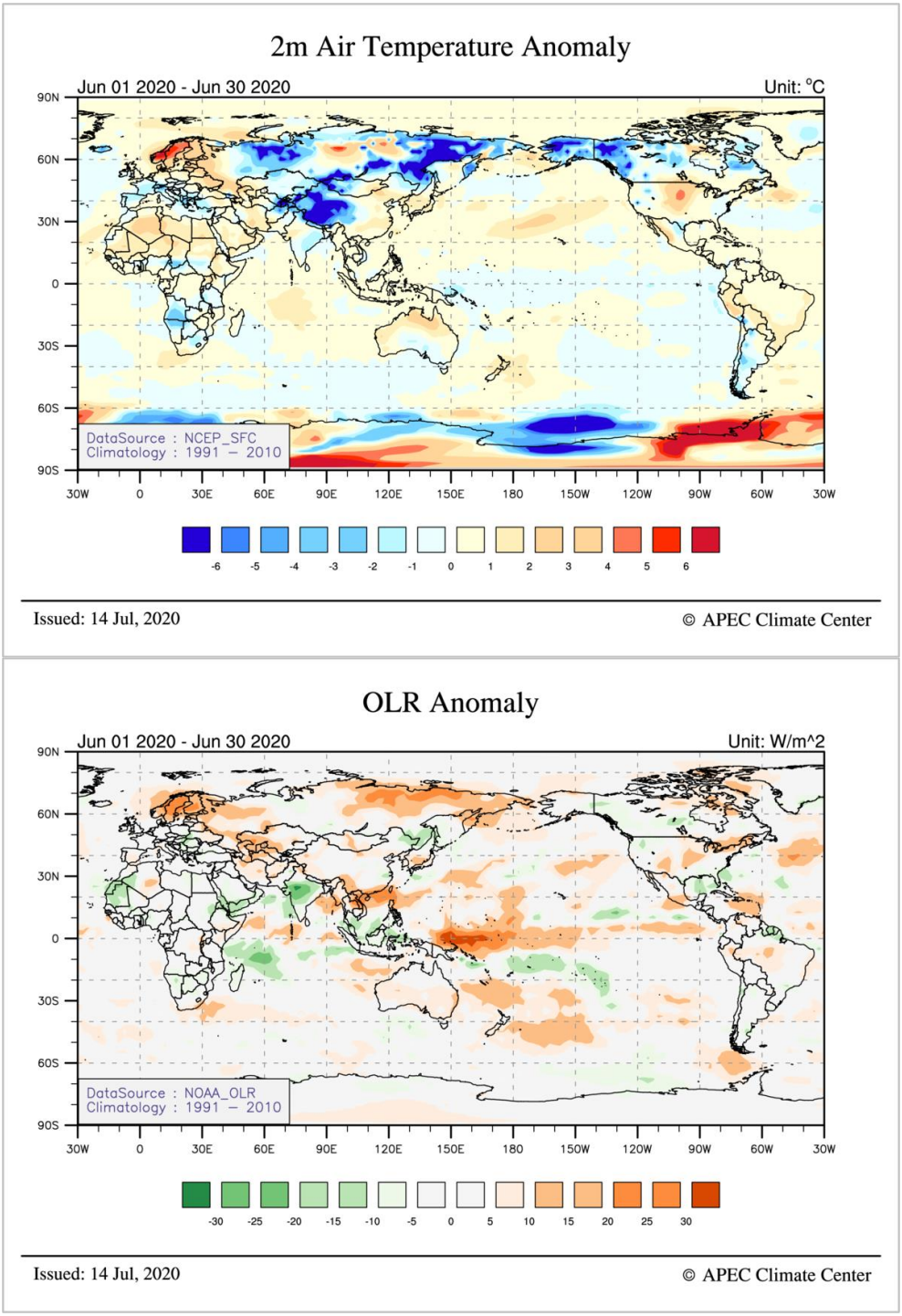

Fig. 3. Monthly mean anomalies of the observed 2m air temperature (top) and OLR (bottom) for June 2020.

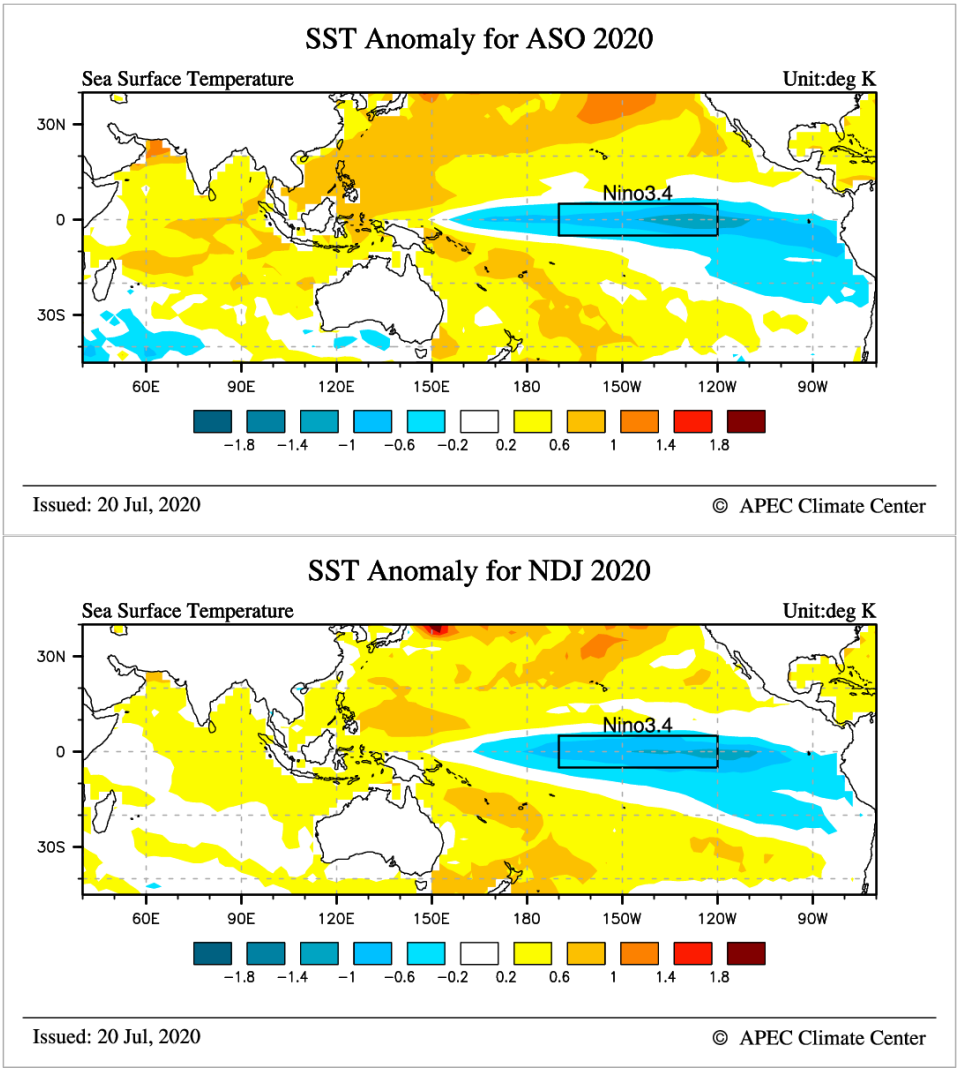

Fig. 4. Multi-model ensemble (MME) forecasts of SST anomalies for August – October 2020 (top) and November 2020 – January 2021 (bottom). Anomalies are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

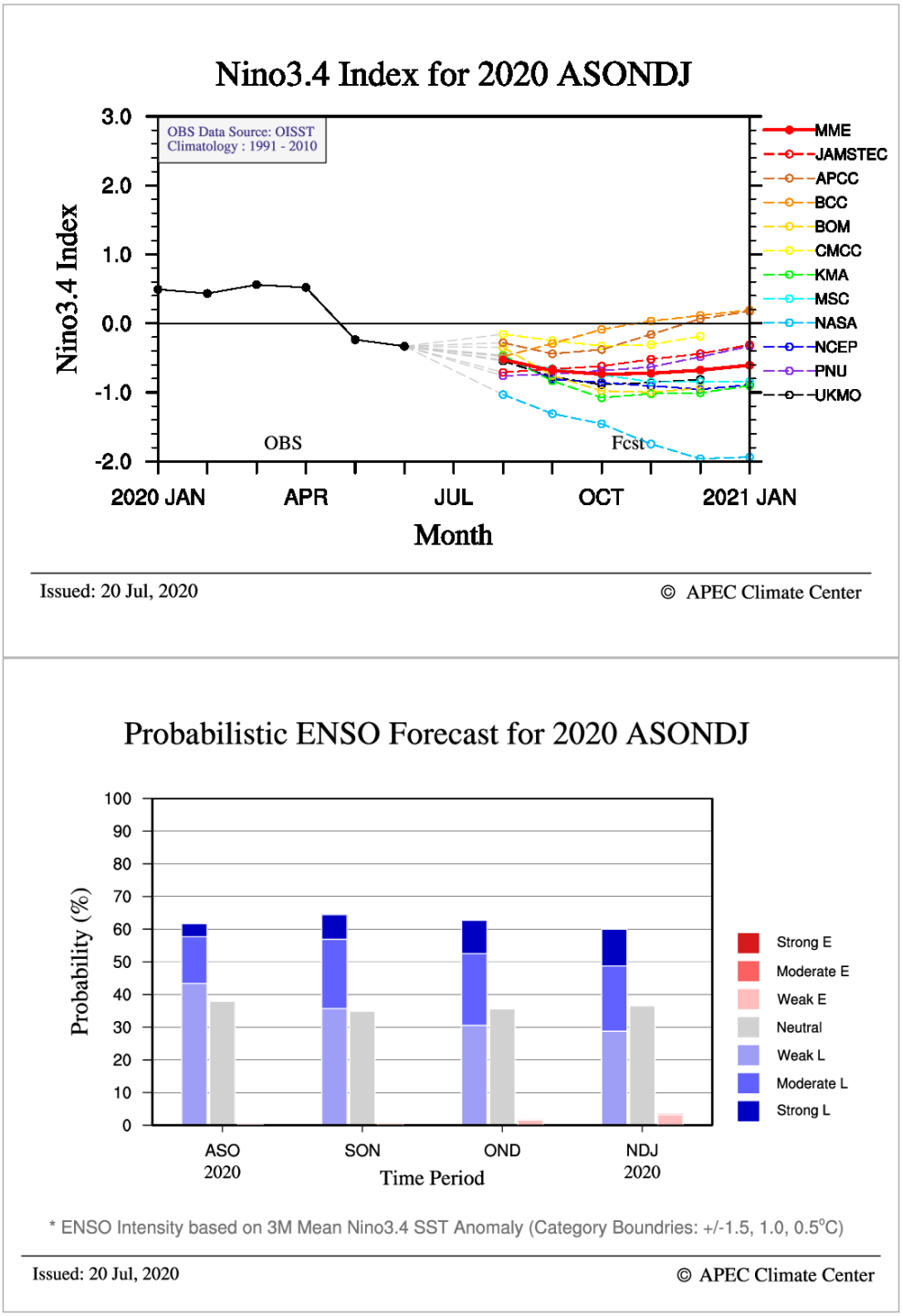

Fig. 5. Predicted monthly mean Niño3.4 index from individual models and the MME for August 2020 – January 2021 (top). Probabilistic MME forecasts of the status and intensity based on 3-month mean Niño3.4 index for four overlapping 3-month mean periods (bottom). Anomalies are computed with respect to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

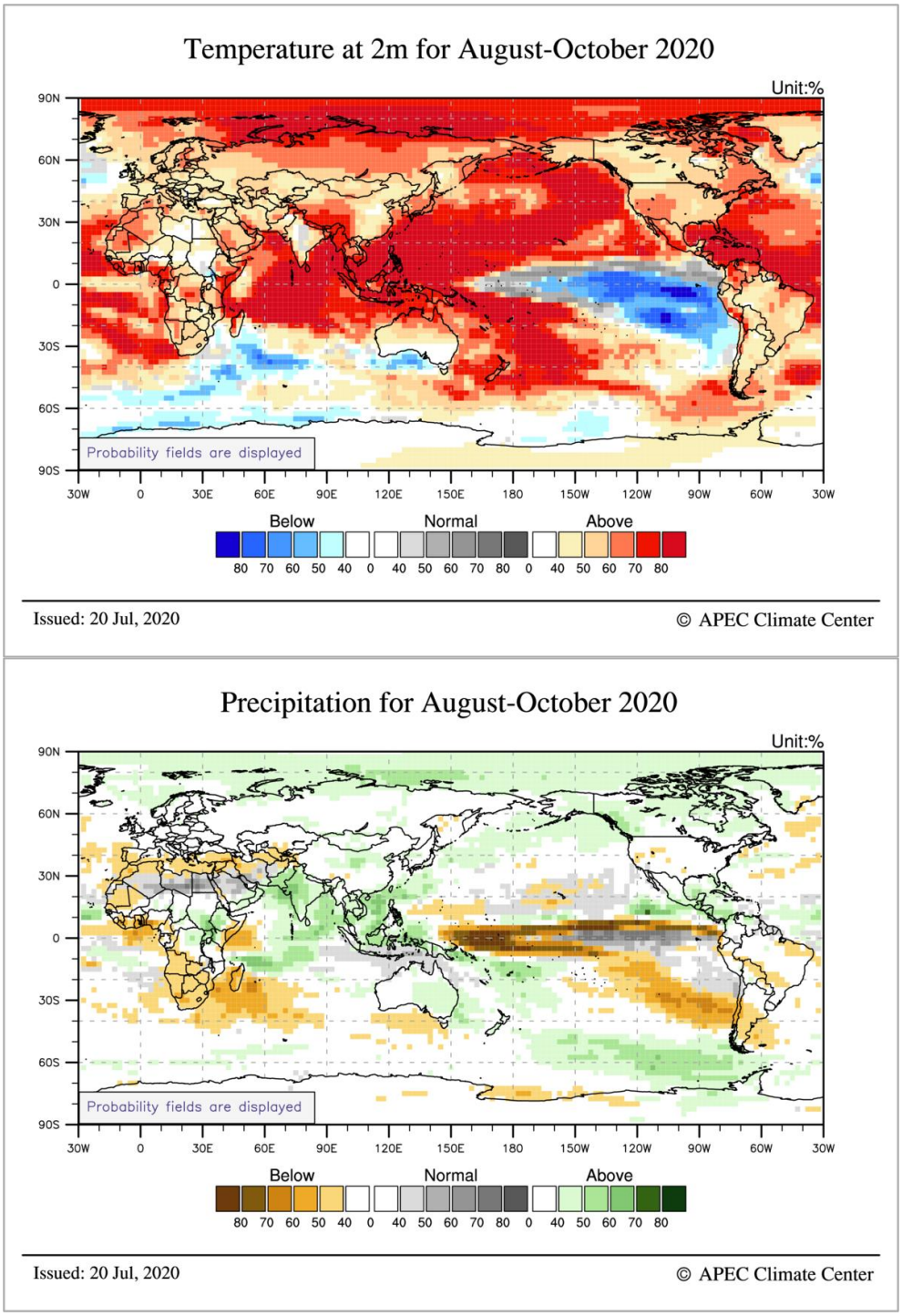

Fig. 6. Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for August – October 2020. Normal conditions are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

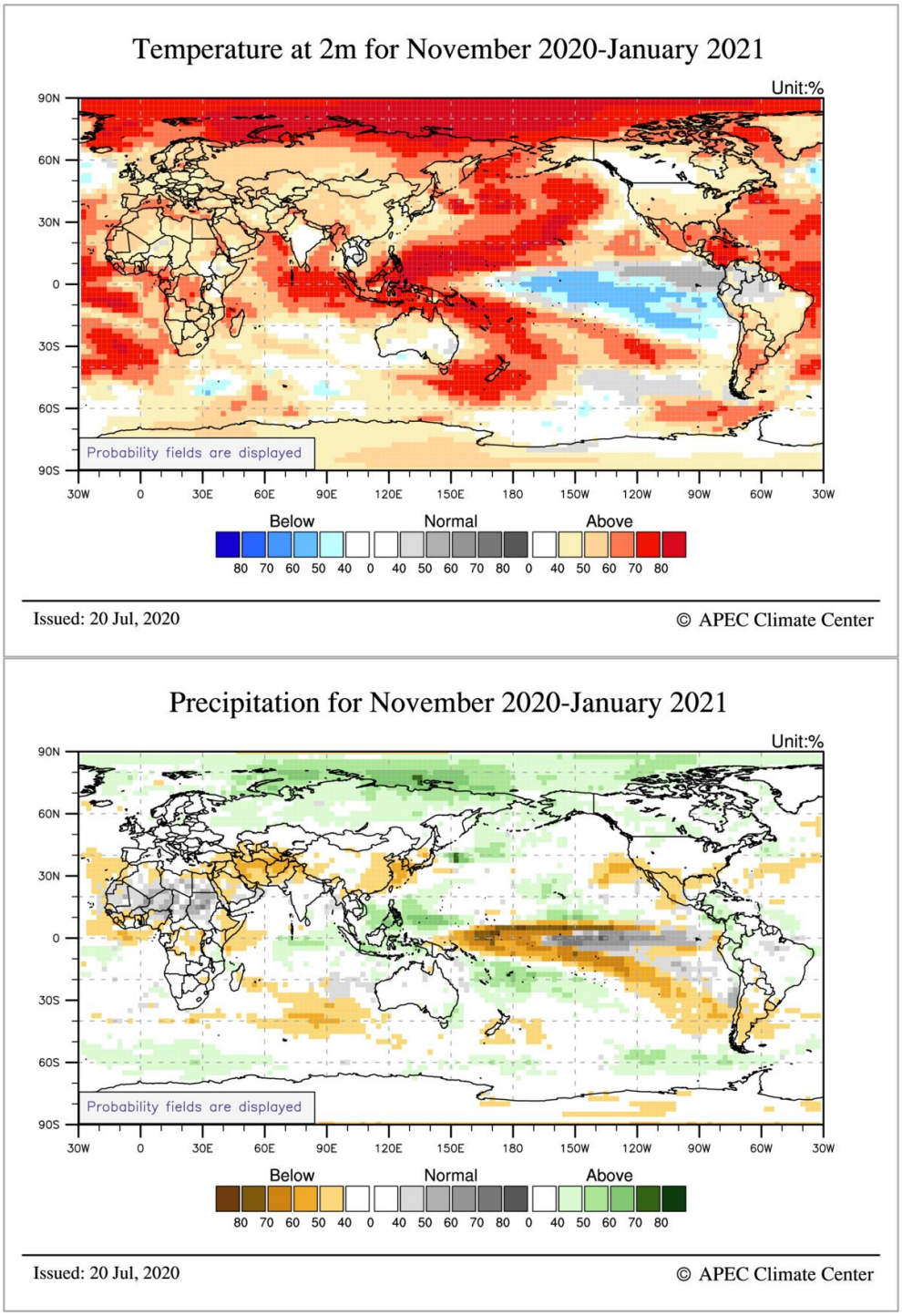

Fig. 7. Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for November 2020 – January 2021. Normal conditions are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

* 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).