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APCC Monthly Climate Outlook for June – November 2020

(Issued: May 20, 2020)

- ***During April 2020, weak positive sea surface temperature anomalies were observed over the equatorial Pacific.***
- ***The latest APCC ENSO outlook suggests 62% probability for ENSO neutral conditions during June – August 2020 and 48% probability for La Niña conditions with a weak level during September – November 2020.***
- ***Strongly enhanced probability for above normal temperatures is predicted over the North Pacific (excluding equatorial regions), subtropical Atlantic, and the eastern Indian Ocean for June – November 2020.***
- ***Enhanced probability for above normal precipitation is predicted for southeastern Australia, whereas below normal precipitation is predicted for the eastern equatorial Atlantic and the southern Indian Ocean near Madagascar for June – November 2020.***

Current Climate Conditions

In April 2020, weak positive equatorial sea surface temperature (SST) anomalies were observed over the equatorial Pacific. Suppressed tropical convection near Indonesia and the Date Line was persisted, while wind anomalies near the Date Line were easterly. Positive monthly mean temperature anomalies were observed over the Arctic, Antarctic, and Central Russia, whereas negative anomalies spanned over East Asia, Central Asia, western Russia, Canada, and northern USA. Positive monthly mean precipitation anomalies were observed along the region from Iran to the Horn of Africa, eastern Indian Ocean near Australia, and southeastern Australia. Negative anomalies spanned over Central Russia, Mongolia, northern China, Europe (excluding Northern Europe), equatorial Pacific, and Timor, Arafura, and Coral Seas [Figs. 1, 2, and 3].

Discussion of Climate Forecast

SST and ENSO Outlook:

The prevailing ENSO phase is expected to be neutral to negative. Negative SST anomalies along the equatorial Pacific are predicted during June – August 2020, and these anomalies are expected to strengthen during September – November 2020. Along with these spatial distributions, six out of ten dynamical coupled models predict negative Niño3.4 index for the whole forecast period. As a result, a decreasing Niño3.4 index from -0.16^{o}C to -0.67^{o}C is predicted. In summary, based on the running 3-month mean Niño3.4 index, the APCC ENSO outlook suggests 62% chance of ENSO neutral conditions is dominant during June to August 2020. The chance for the conditions is likely to gradually decrease

until September to November 2020, whereas the chance for the La Niña conditions is likely to increase (~48%). Its intensity is expected to be weak [Figs. 4 and 5].

Temperature and Precipitation Outlook:

1. **Forecast for June – August 2020**

Strongly enhanced probability for above normal temperatures is predicted for the North Pacific (excluding equatorial regions), central South Pacific, maritime continent, eastern and western Indian Ocean, tropical and subtropical Atlantic. Enhanced probability for above normal temperatures is expected for Eurasia (excluding India), America, Africa (excluding southern regions), northern Australia, and the Arctic and Antarctic. Enhanced probability for below normal temperatures is predicted for the eastern equatorial Pacific and the Great Australian Bight. Enhanced probability for above normal precipitation is expected for Australia, Indonesia, the western Indian Ocean near Madagascar, and the eastern Indian Ocean near Indonesia. Strongly enhanced probability for below normal precipitation is predicted for the equatorial Pacific and the Philippine Sea. Enhanced probability for below normal precipitation is expected for the eastern equatorial Atlantic and the southern Indian Ocean near Madagascar. A trend for below normal precipitation is predicted for the eastern subtropical South Pacific and Europe (excluding Northern Europe). Enhanced probability for near normal precipitation is expected for northern North Africa [Fig. 6].

2. **Forecast for September – November 2020**

Strongly enhanced probability for above normal temperatures is predicted for the North Pacific (excluding equatorial and eastern subtropical regions), eastern Indian Ocean, maritime continent, subtropical Atlantic, and the Arctic. Enhanced probability for above normal temperatures is expected for the South Pacific (excluding equatorial and eastern subtropical regions), Eurasia (excluding India), America (excluding Brazil), northwestern and central Africa, and the Antarctic. Enhanced probability for below normal temperatures is predicted for the equatorial Pacific and the Great Australian Bight. Enhanced probability for above normal precipitation is expected for the Arctic, maritime continent, India, and southeastern Australia. Enhanced probability for below normal precipitation is predicted for the western equatorial Pacific, eastern subtropical South Pacific, and the southern Indian Ocean near Madagascar. A trend for below normal precipitation is expected for Central Asia, Middle East, the Mediterranean Sea, western Indian Ocean near Somalia, and the eastern equatorial Atlantic. Enhanced probability for near normal precipitation is predicted for the eastern equatorial Pacific and the Sahel [Fig. 6].

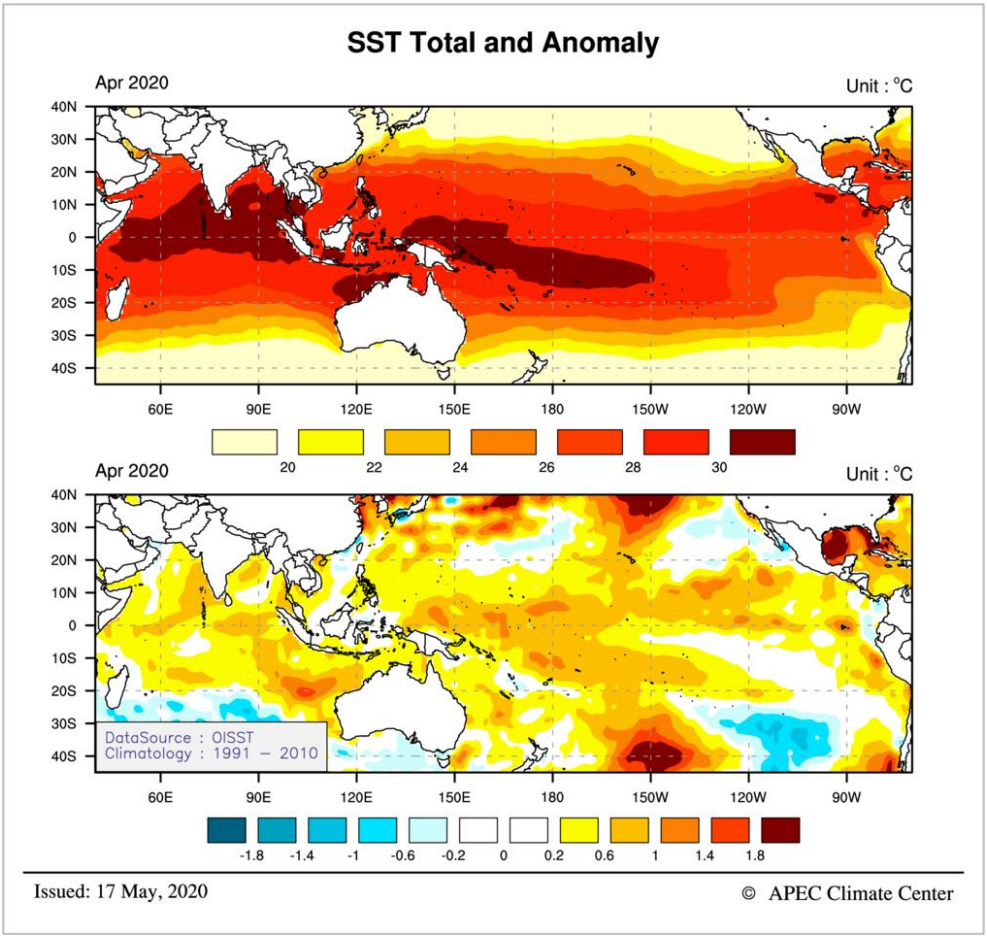

Fig. 1. Monthly mean observed sea surface temperatures (SSTs; top) and anomalies (bottom) for April 2020.

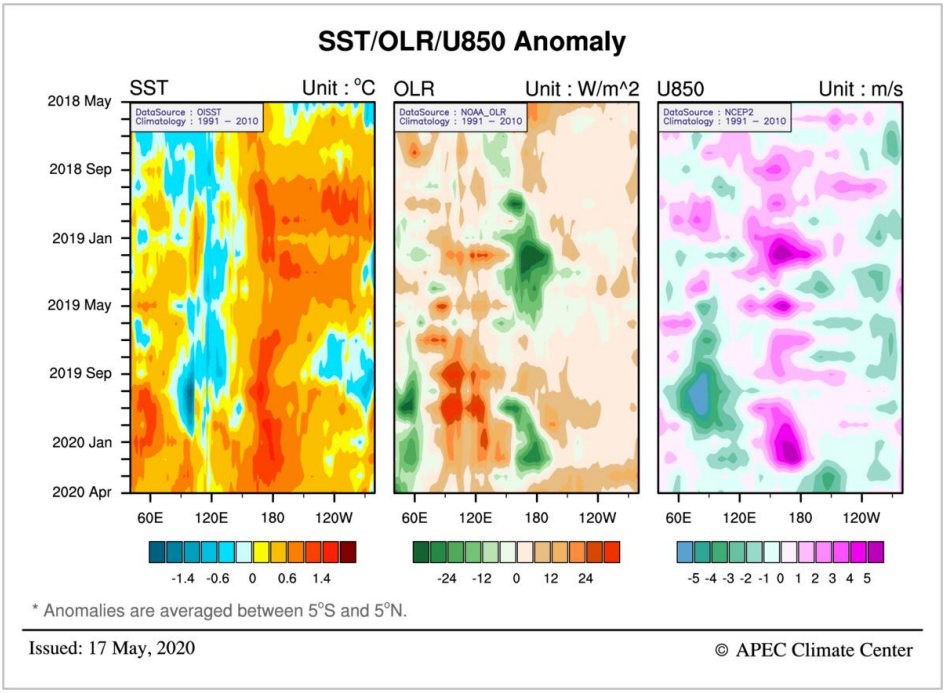

Fig. 2. Time-longitude cross section of the observed monthly mean SST anomalies, outgoing longwave radiation (OLR) anomalies, and zonal wind anomalies at 850hPa (U850) along the equator (5°S-5°N) in the Indian and Pacific Oceans (40°E-80°W) for May 2018 – April 2020.

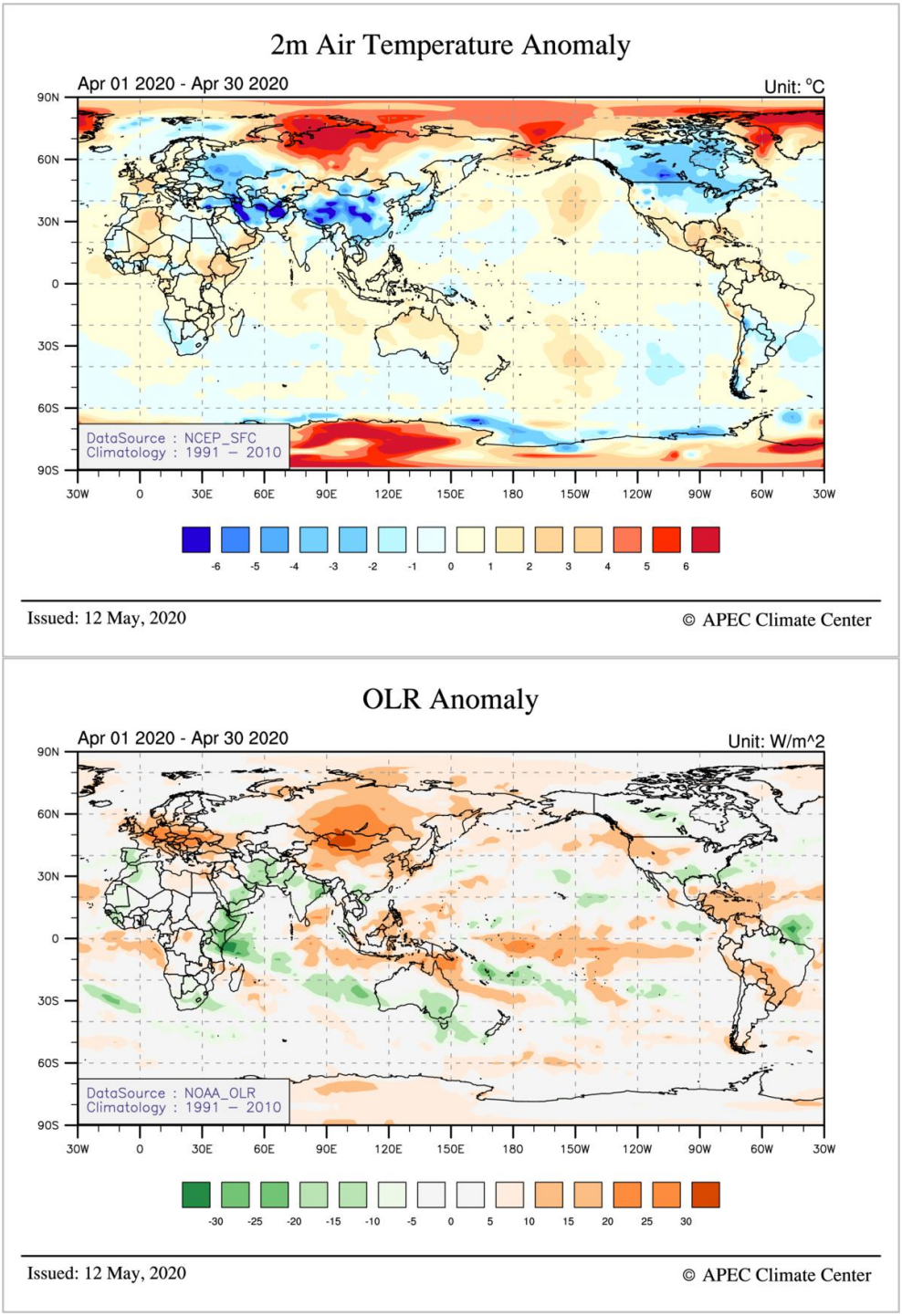

Fig. 3. Monthly mean anomalies of the observed 2m air temperature (top) and OLR (bottom) for April 2020.

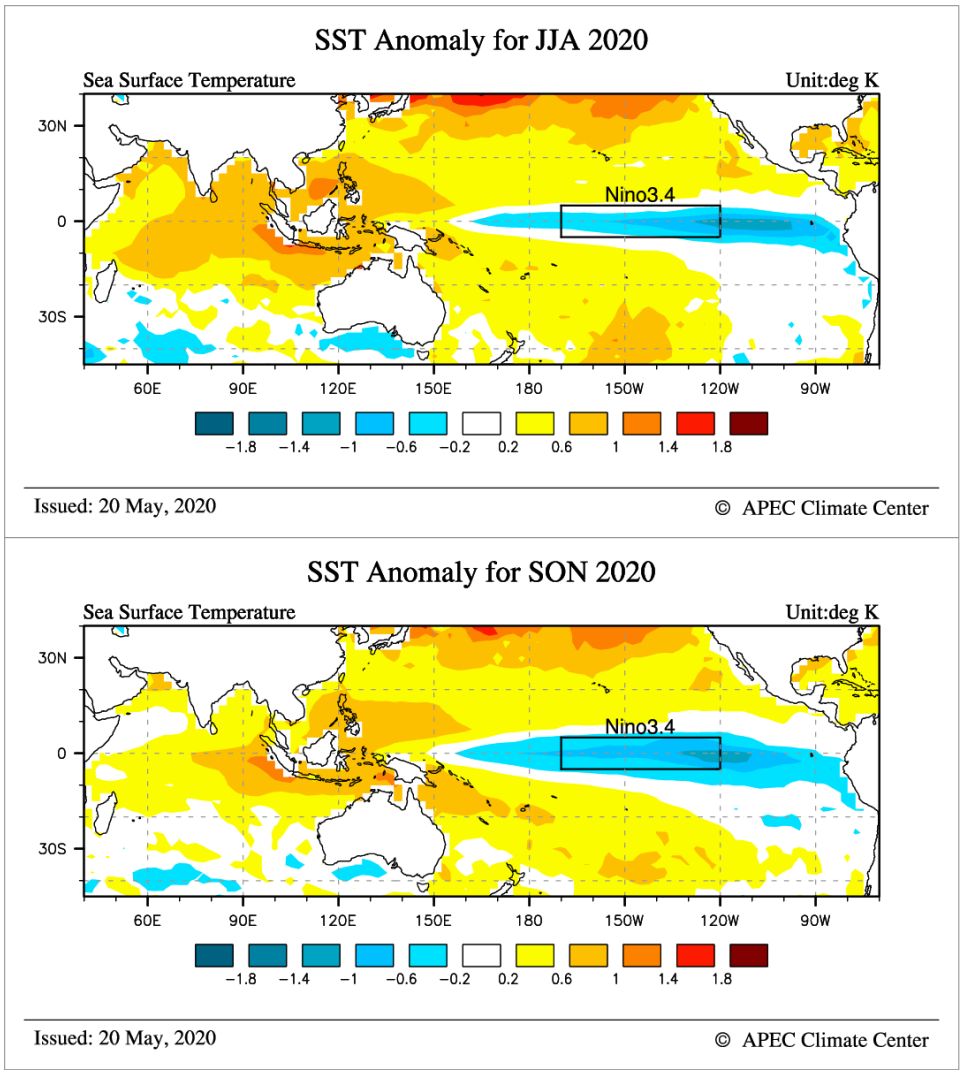

Fig. 4. Multi-model ensemble (MME) forecasts of SST anomalies for June – August 2020 (top) and September – November 2020 (bottom). Anomalies are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

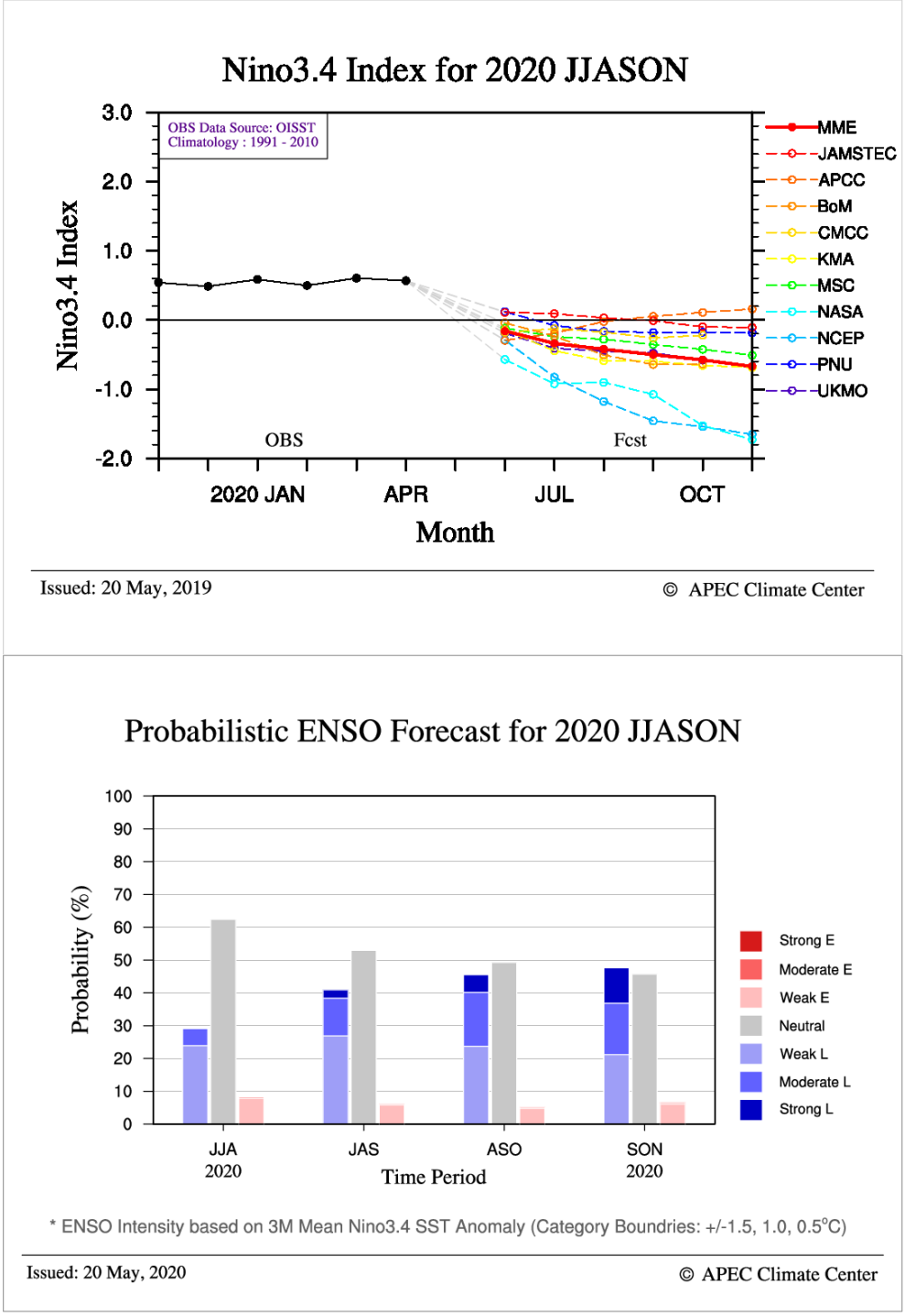

Fig. 5. Predicted monthly mean Niño3.4 index from individual models and the MME for June – November 2020 (top). Probabilistic MME forecasts of the status and intensity based on 3-month mean Niño3.4 index for four overlapping 3-month mean periods (bottom). Anomalies are computed with respect to the common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

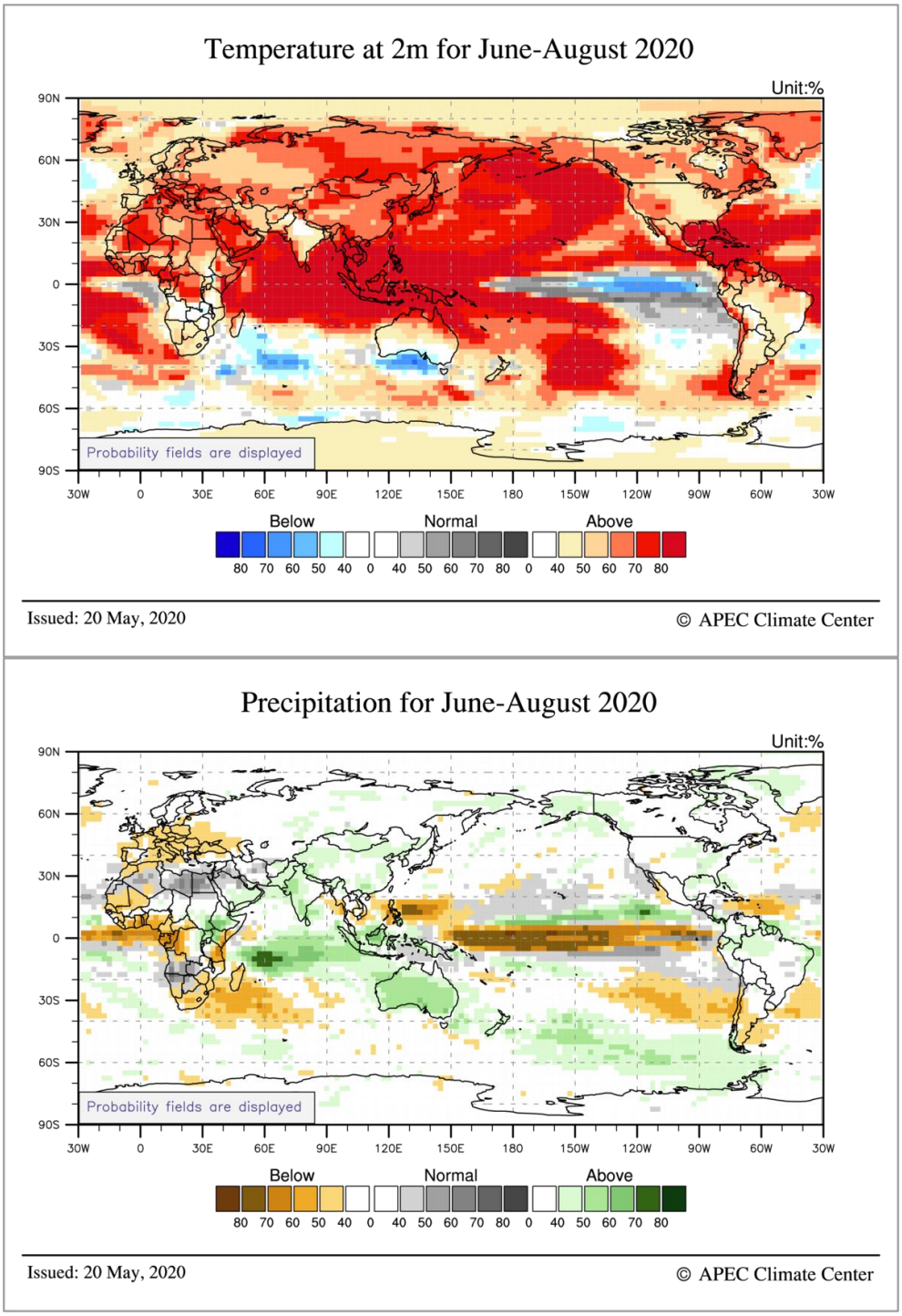

Fig. 6. Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for June – August 2020. Normal conditions are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

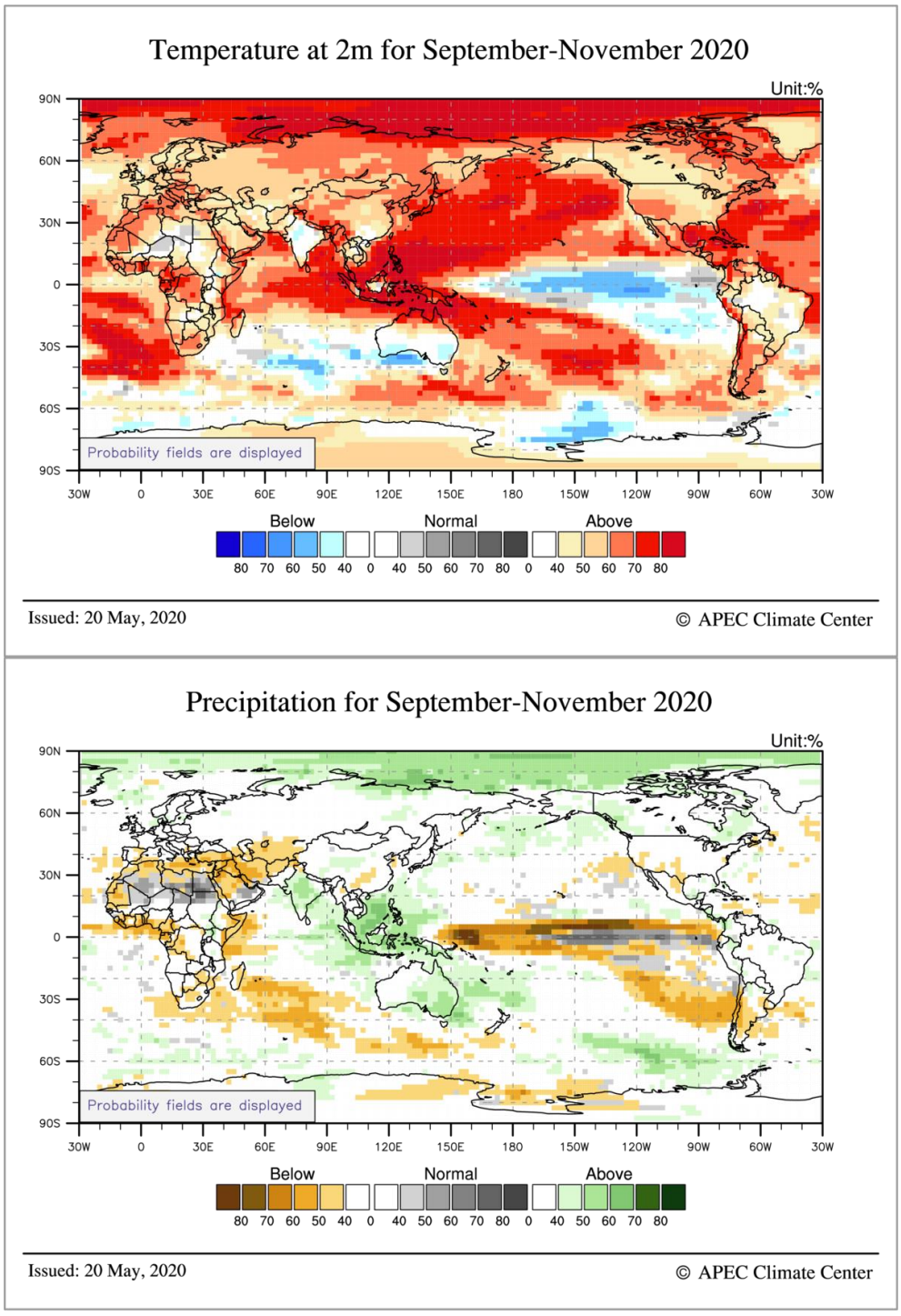

Fig. 7. Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for September – November 2020. Normal conditions are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

* 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).