APEC Climate Center
12 Centum 7-ro, Haeundae-gu, Busan
48058, Republic of Korea
Tel: +82 51 745 3900
Fax: +82 51 745 3949
Website: www.apcc21.org

APCC Monthly Climate Outlook for May – October 2020

(Issued: April 20, 2020)

- ***During March 2020, weak positive sea surface temperature anomalies were observed over the western and central equatorial Pacific.***
- ***The latest APCC ENSO outlook suggests 65% probability for ENSO neutral conditions during May – July 2020 and 45% probability for La Niña conditions with a moderate level during August – October 2020.***
- ***Enhanced probability for above normal temperatures is likely to prevail over most of the globe, especially over the Pacific (excluding central and eastern equatorial regions and eastern South Pacific), subtropical Atlantic, Indian Ocean (excluding southern region), and the maritime continent for May – October 2020.***
- ***Enhanced probability for below normal precipitation is predicted for the western and central equatorial Pacific and western Indian Ocean near Madagascar for May – August 2020.***

Current Climate Conditions

In March 2020, weak positive equatorial sea surface temperature (SST) anomalies were observed over the western and central equatorial Pacific. Suppressed tropical convection over Indonesia persisted, while tropical convection and westerly wind anomalies over the Date Line weakened compared to the previous month. Positive monthly mean temperature anomalies were observed over Eurasia (excluding South and Central Asia). Negative anomalies spanned over the Barents and Greenland Seas, Arctic Archipelago, Greenland, Canada, South and Central Asia, and the Antarctic. Positive monthly mean precipitation anomalies were observed over the eastern subtropical North Pacific, western Indian Ocean, India, and southern Australia, whereas negative anomalies spanned over the tropical Pacific, northeastern North Pacific, South America, Central Europe and Asia, the Indochina Peninsula, and northwestern Australia [Figs. 1, 2, and 3].

Discussion of Climate Forecast

SST and ENSO Outlook:

The prevailing ENSO phase is expected to be neutral to negative. Weak negative SST anomalies in the eastern equatorial Pacific are predicted during May – July 2020, and this cold tongue is expected to expand over the central and eastern equatorial Pacific during August – October 2020. Along with these spatial distributions, seven out of ten dynamical coupled models predict negative Niño3.4 index for the same period. As a result, a decreasing Niño3.4 index from 0.30^{o}C to -0.54^{o}C is predicted. In summary, based on the running 3-month mean Niño3.4 index, the APCC ENSO outlook suggests 65% chance of

ENSO neutral conditions is dominant during May to July 2020. The chance for the conditions is likely to gradually decrease until August to October 2020, whereas the chance for the La Niña conditions is likely to increase (~45%). Its intensity is expected to be moderate [Figs. 4 and 5].

Temperature and Precipitation Outlook:

1. **Forecast for May – July 2020**

Strongly enhanced probability for above normal temperatures is predicted for Eurasia (excluding Central and South Asia), the Pacific (excluding eastern South Pacific, and eastern and central subtropical North Pacific), tropical and subtropical Atlantic, Indian Ocean (excluding southern region), northern South America, the Sahel, Central Africa, and the Arctic. Enhanced probability for above normal temperatures is expected for North and Central America, and southern South America. Enhanced probability for near normal temperatures is predicted for the eastern equatorial Pacific. Enhanced probability for above normal precipitation is expected for the western and eastern Indian Ocean near the equator, maritime continent, and the central off-equatorial North Pacific. A trend for above normal precipitation is predicted for Australia, northeastern Russia, Central Asia, and the Arctic. Enhanced probability for below normal precipitation is expected for the western and central equatorial Pacific, Philippine Sea, Indochina Peninsula, equatorial Atlantic, and the western Indian Ocean near Madagascar. A trend for below normal precipitation is predicted for the eastern subtropical South Pacific, western Russia, and southern Africa. Enhanced probability for near normal precipitation is expected for the eastern equatorial Pacific. A trend for near normal precipitation is predicted for northern Africa, Saudi Arabia, and the off-equatorial South Atlantic [Fig. 6].

2. **Forecast for August – October 2020**

Strongly enhanced probability for above normal temperatures is predicted for the Arctic, Pacific (excluding equatorial region and eastern South Pacific), subtropical Atlantic, maritime continent, and the Indian Ocean (excluding southern region). Enhanced probability for above normal temperature is expected for Eurasia (excluding South Asia), America, and the Antarctic. Enhanced probability for below normal temperature is predicted for the eastern equatorial Pacific. Enhanced probability for below normal precipitation is expected for the western and central equatorial Pacific, eastern subtropical South Pacific, equatorial Atlantic, and the western Indian Ocean near Madagascar. Enhanced probability for near normal precipitation is predicted for northern Africa and Saudi Arabia [Fig. 7].

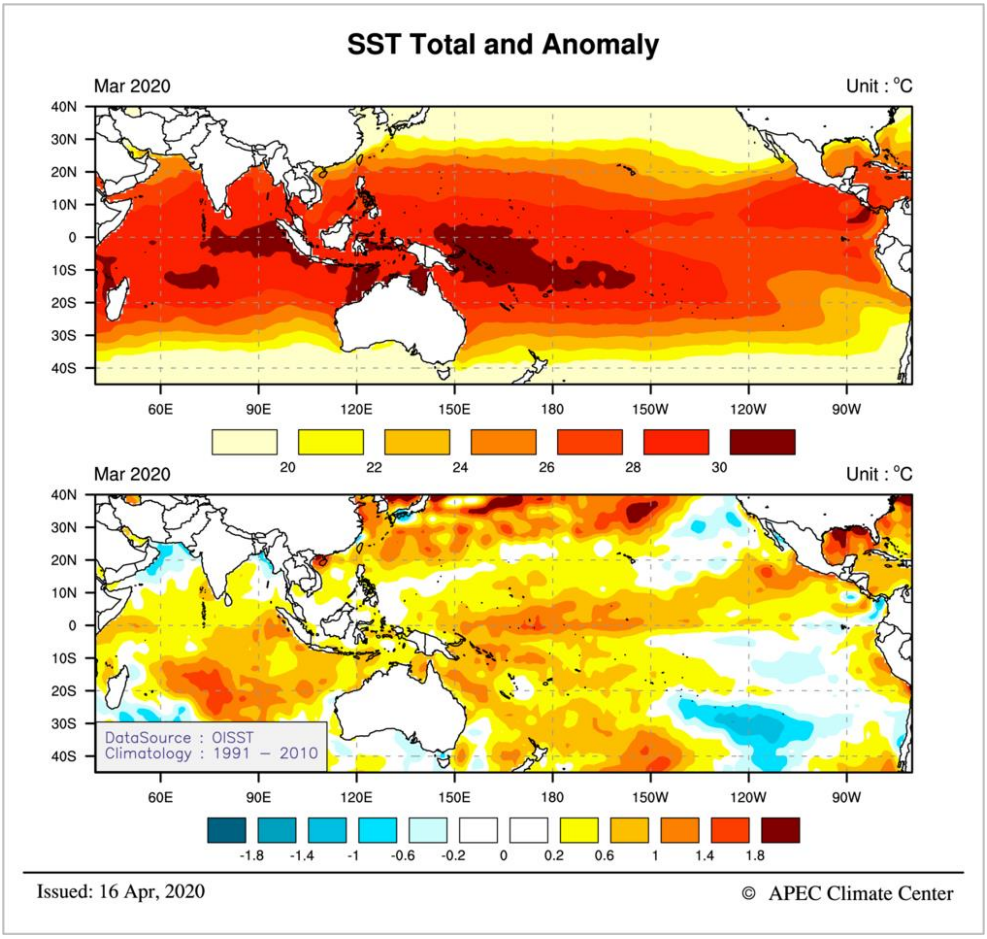

Fig. 1. Monthly mean observed sea surface temperatures (SSTs; top) and anomalies (bottom) for March 2020.

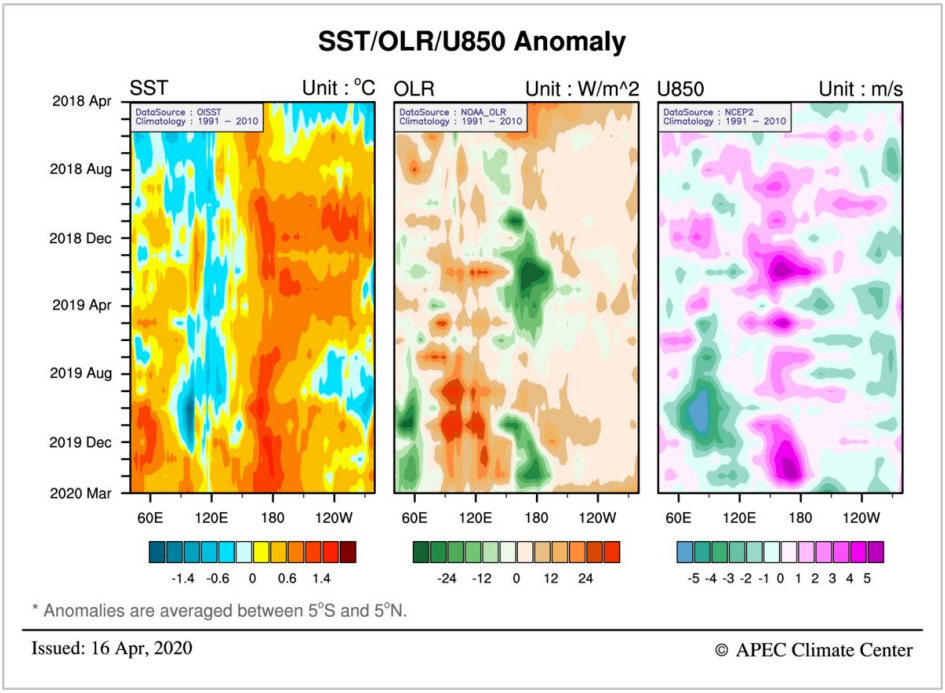

Fig. 2. Time-longitude cross section of the observed monthly mean SST anomalies, outgoing longwave radiation (OLR) anomalies, and zonal wind anomalies at 850hPa (U850) along the equator (5°S-5°N) in the Indian and Pacific Oceans (40°E-80°W) for April 2018 – March 2020.

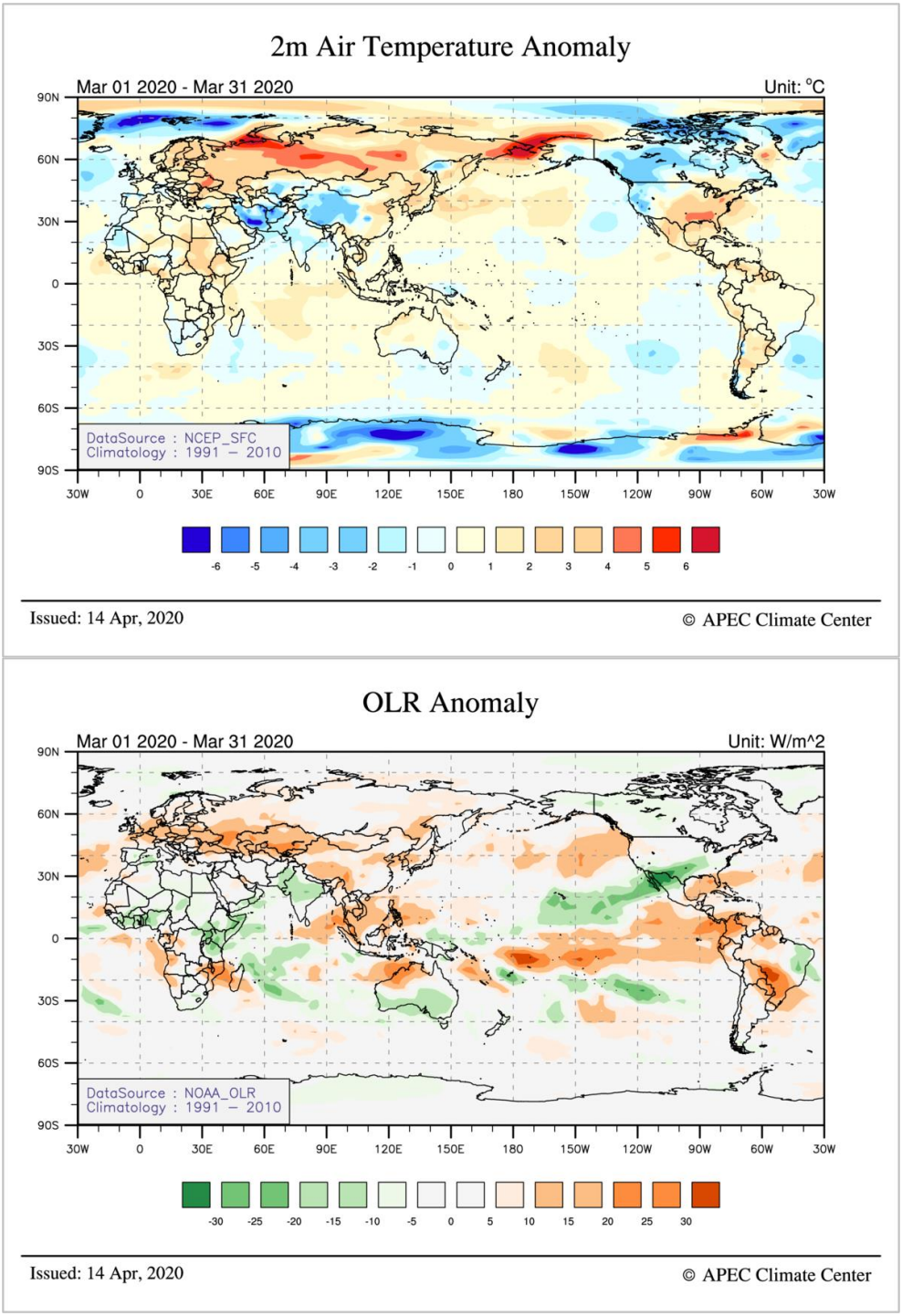

Fig. 3. Monthly mean anomalies of the observed 2m air temperature (top) and OLR (bottom) for March 2020.

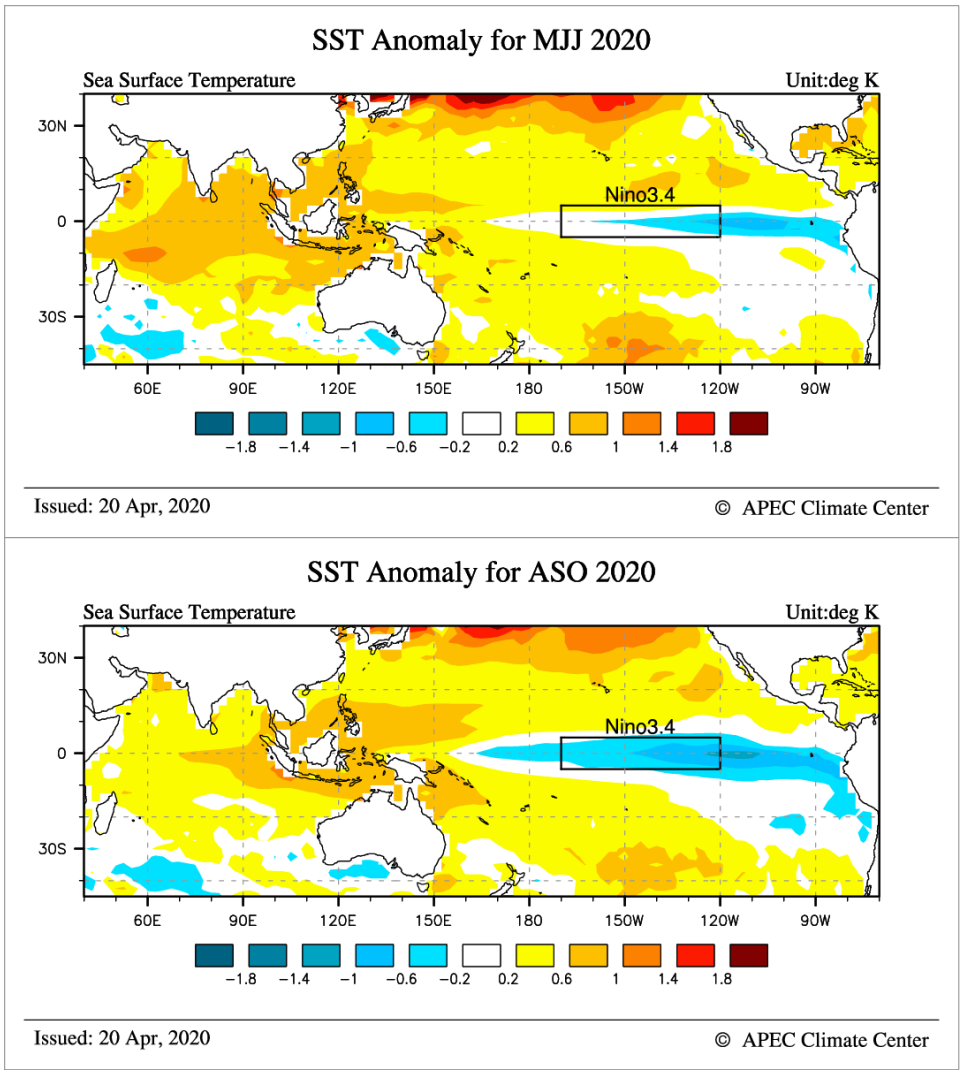

Fig. 4. Multi-model ensemble (MME) forecasts of SST anomalies for May – July 2020 (top) and August – October 2020 (bottom). Anomalies are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

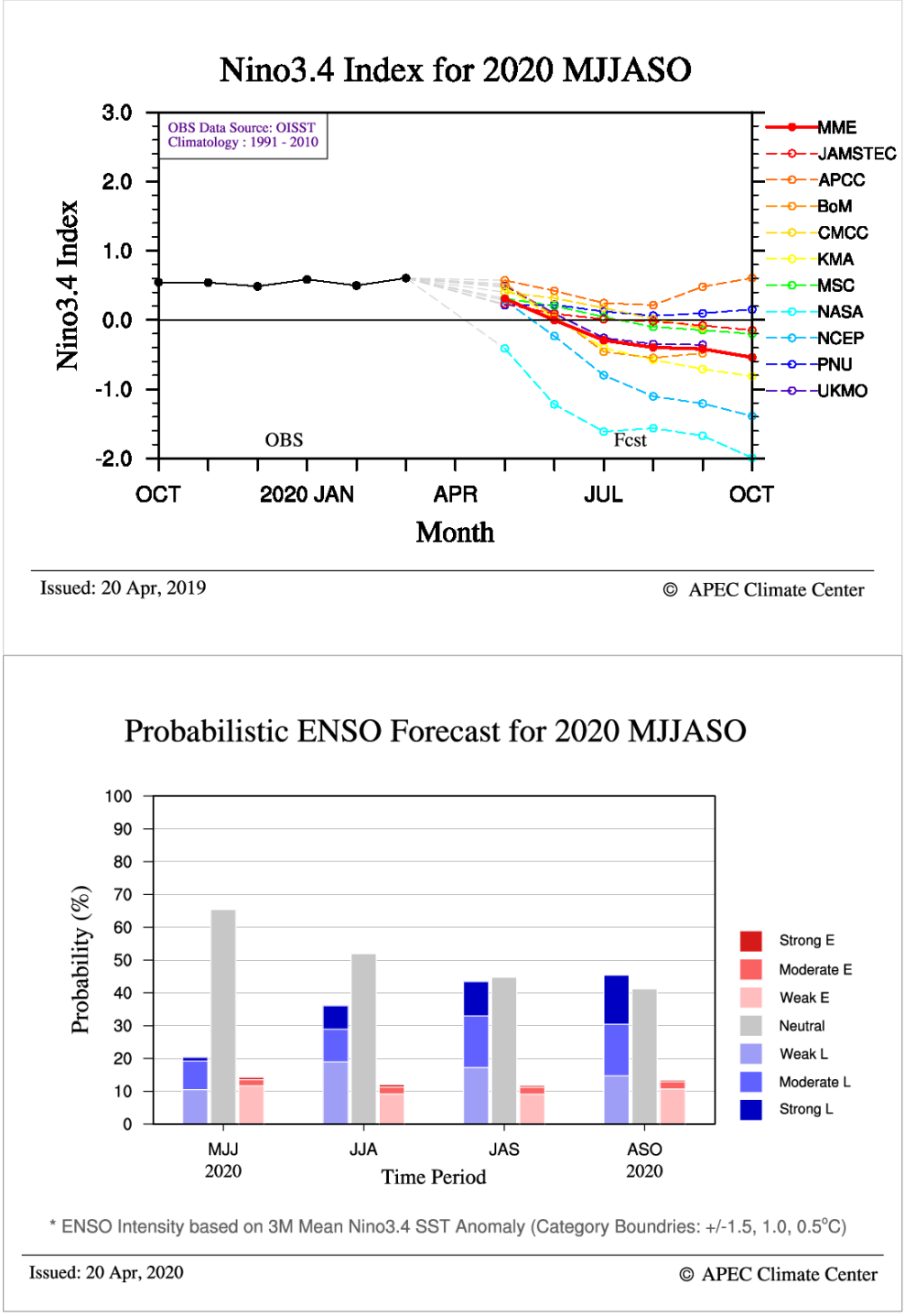

Fig. 5. Predicted monthly mean Niño3.4 index from individual models and the MME for May – October 2020 (top). Probabilistic MME forecasts of the status and intensity based on 3-month mean Niño3.4 index for four overlapping 3-month mean periods (bottom). Anomalies are computed with respect to the common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

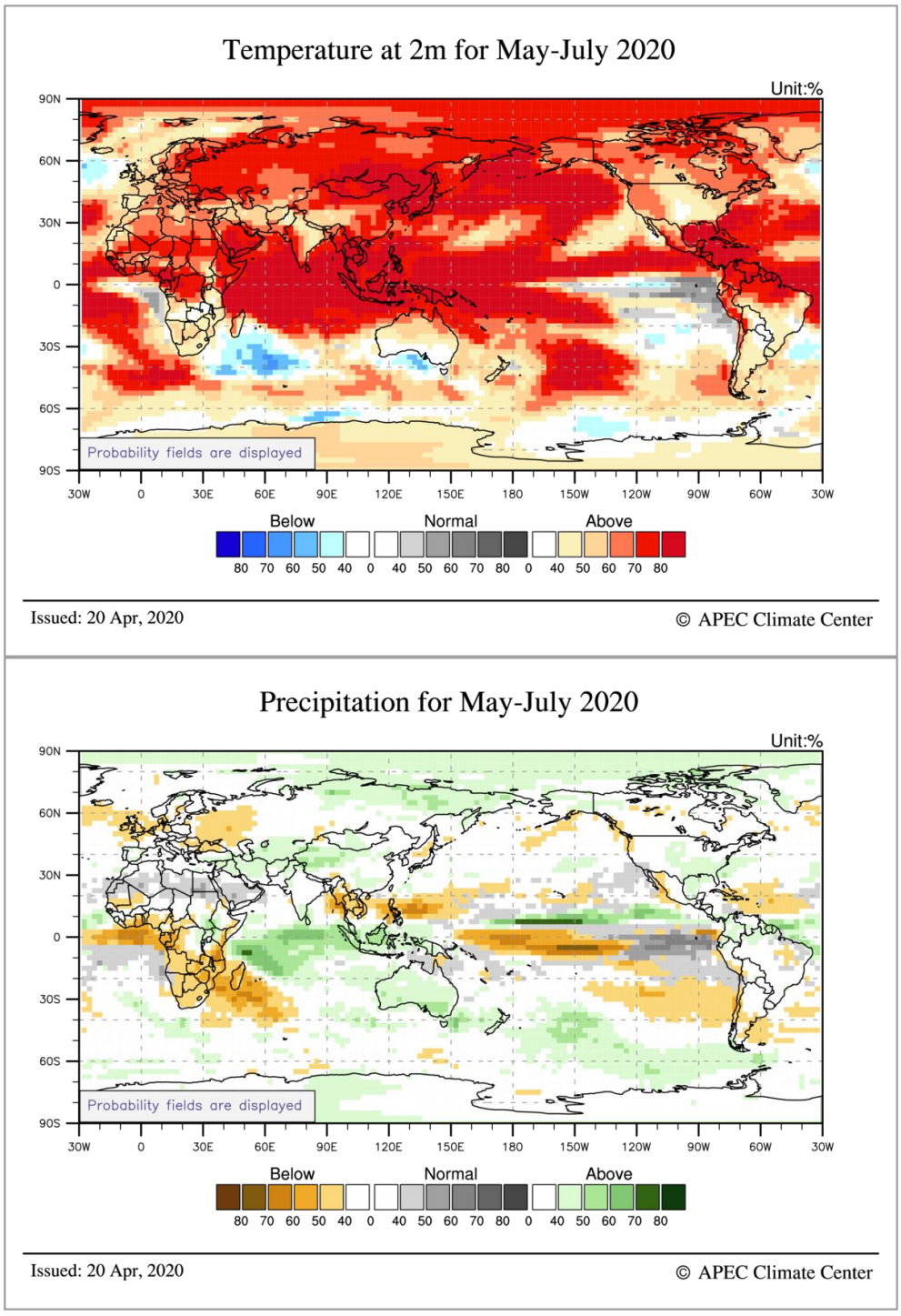

Fig. 6. Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for May – July 2020. Normal conditions are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

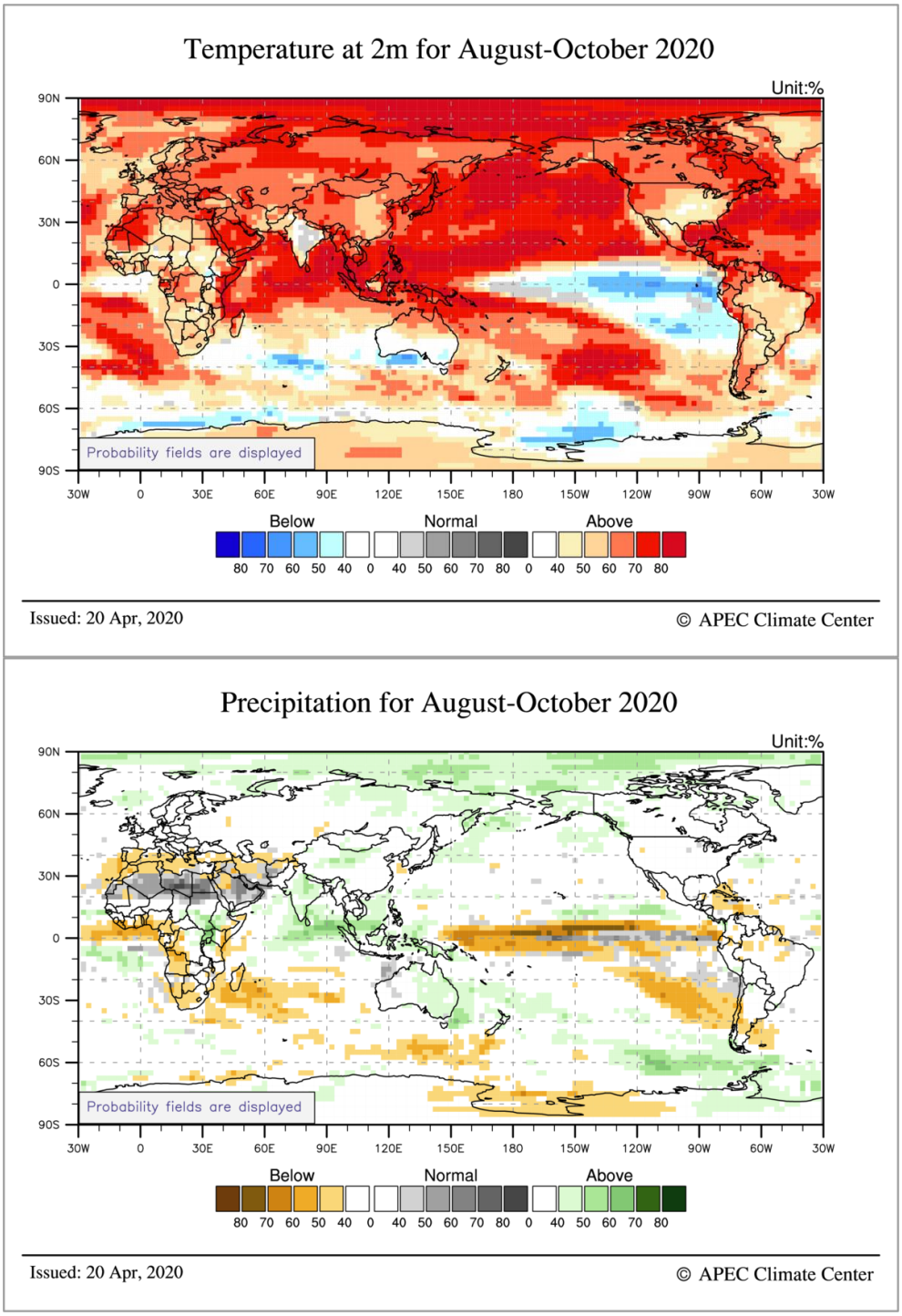

Fig. 7. Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for August – October 2020. Normal conditions are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

* 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).