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 April – September 2020

(Issued: March 20, 2020)

- ***During February 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 (62%) is dominant during April – June 2020. The probability for the conditions is likely to continue and be still dominant (48%) until July – September 2020.***
- ***Positive temperature anomalies are likely to prevail over most of the globe, especially over Eurasia, Africa, America, tropical North Pacific, northwestern and northern North Pacific, equatorial and subtropical Atlantic, and the Indian Ocean (excluding southern and eastern region) for April – September 2020.***
- ***Below normal precipitation anomalies are predicted for the off-equatorial South Pacific for April – June 2020, whereas the anomalies are expected for the western and central equatorial Pacific for July – September 2020.***

Current Climate Conditions

In February 2020, weak positive equatorial sea surface temperature (SST) anomalies remained over the western and central equatorial 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 Eastern Europe and most of Russia. Negative anomalies spanned over the Chukchi Sea, Alaska, Arctic Archipelago, and Greenland. Positive monthly mean precipitation anomalies were observed over the western tropical Pacific and the western Indian Ocean near Somalia, whereas negative anomalies spanned over the subtropical North Pacific and Atlantic, western Indian Ocean near Madagascar, maritime continent, northern Australia, most of Russia, and northern South America [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 equatorial Pacific are predicted during April – June 2020, and a weak cold tongue is expected to expand over the eastern equatorial Pacific during July – September 2020, which corresponds to a decreasing Niño3.4 index from 0.34^{o}C to -0.39^{o}C. 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 April to June 2020. The chance for the neutral conditions is likely to continue and be still dominant (48%) until July to September 2020 [Figs. 4 and 5].

Temperature and Precipitation Outlook:

1. **Forecast for April – June 2020**

Strongly enhanced probability for above normal temperatures is predicted for Russia, the Arctic, tropical Pacific (excluding the eastern South Pacific), northwestern and northern North Pacific, maritime continent, Indian Ocean (excluding southern region), equatorial and subtropical Atlantic, and the Caribbean Sea. Enhanced probability for above normal temperatures is expected for Eurasia (excluding Russia), Africa, Australia, and America. Enhanced probability for above normal precipitation is predicted for the central off-equatorial North Pacific, western Indian Ocean near Somalia, and northern Russia. Enhanced probability for below normal precipitation is expected for off-equatorial South Pacific, the Philippine and South China Seas, and the Bay of Bengal. A trend for below normal precipitation is predicted for the eastern subtropical South Pacific, subtropical Atlantic, western Indian Ocean near Madagascar, Arabian Sea, Bay of Bengal, and the Indochina peninsula. Enhanced probability for near normal precipitation is expected for the eastern equatorial Pacific [Fig. 6].

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

Strongly enhanced probability for above normal temperatures is predicted for the North Pacific (excluding the equatorial region), southern South Pacific, Eurasia (excluding central Russia, South Asia, and eastern China), the Indian Ocean (excluding southern and eastern region), tropical Atlantic, and the Caribbean Sea. Enhanced probability for above normal temperatures is expected for eastern China, central Russia, Africa, and America. Enhanced probability for below normal temperatures is predicted for the eastern equatorial Pacific and the Great Australian Bight. Enhanced probability for near normal temperatures is expected for the central equatorial Pacific. Enhanced probability for below normal precipitation is predicted for the western and central equatorial Pacific, eastern subtropical South Pacific, and the Philippine Sea. A trend for below normal precipitation is expected for the Caribbean Sea and western Russia. Enhanced probability for near normal precipitation is predicted for North Africa and northern Saudi Arabia [Fig. 7].

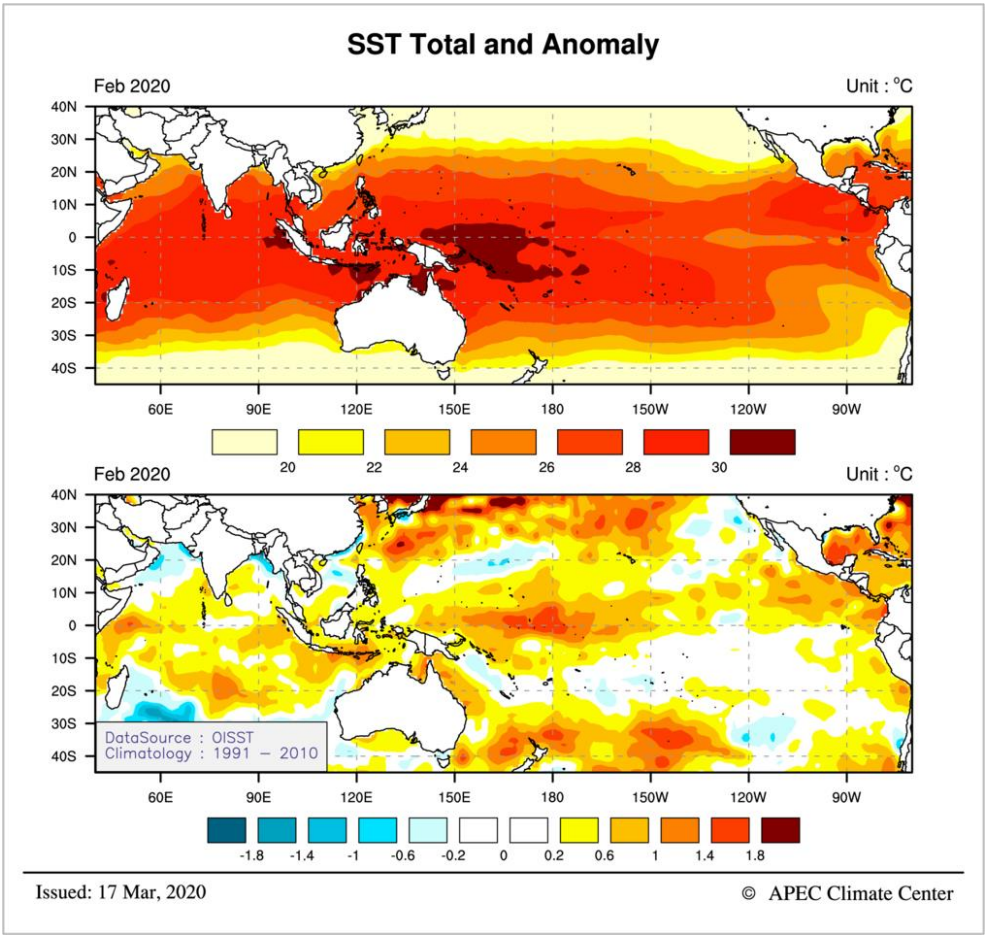

Fig. 1. Monthly mean observed sea surface temperatures (SSTs; top) and anomalies (bottom) for February 2020.

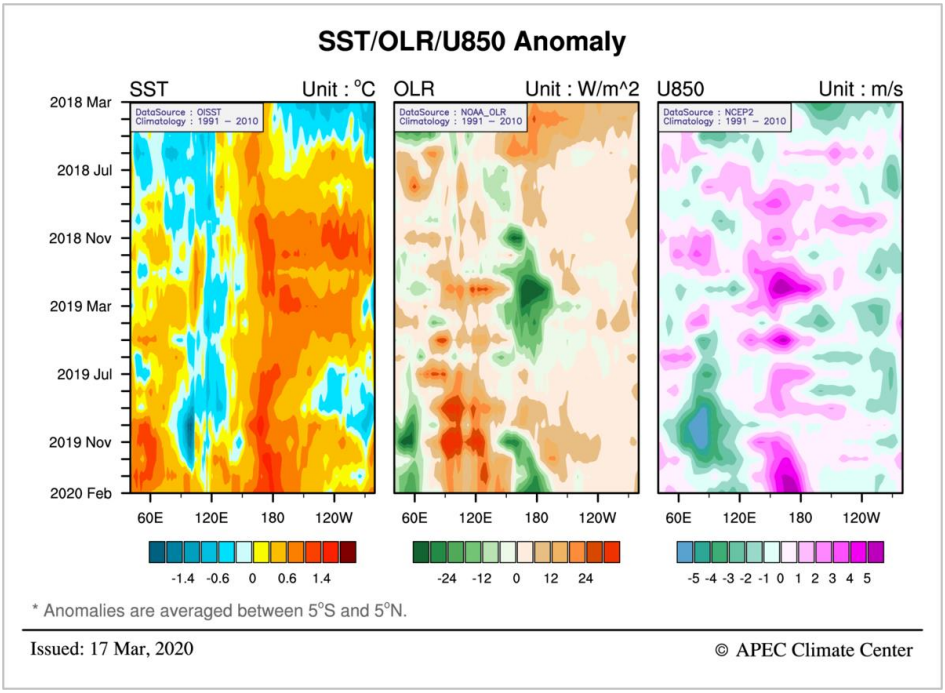

Fig. 2. Time-longitude cross section of the observed monthly mean SST anomalies, outgoing longwave radiation (OLR) anomalies, and zonal wind anomalies at 850hPa (U850) along the equator (5°S-5°N) in the Indian and Pacific Oceans (40°E-80°W) for March 2018 – February 2020.

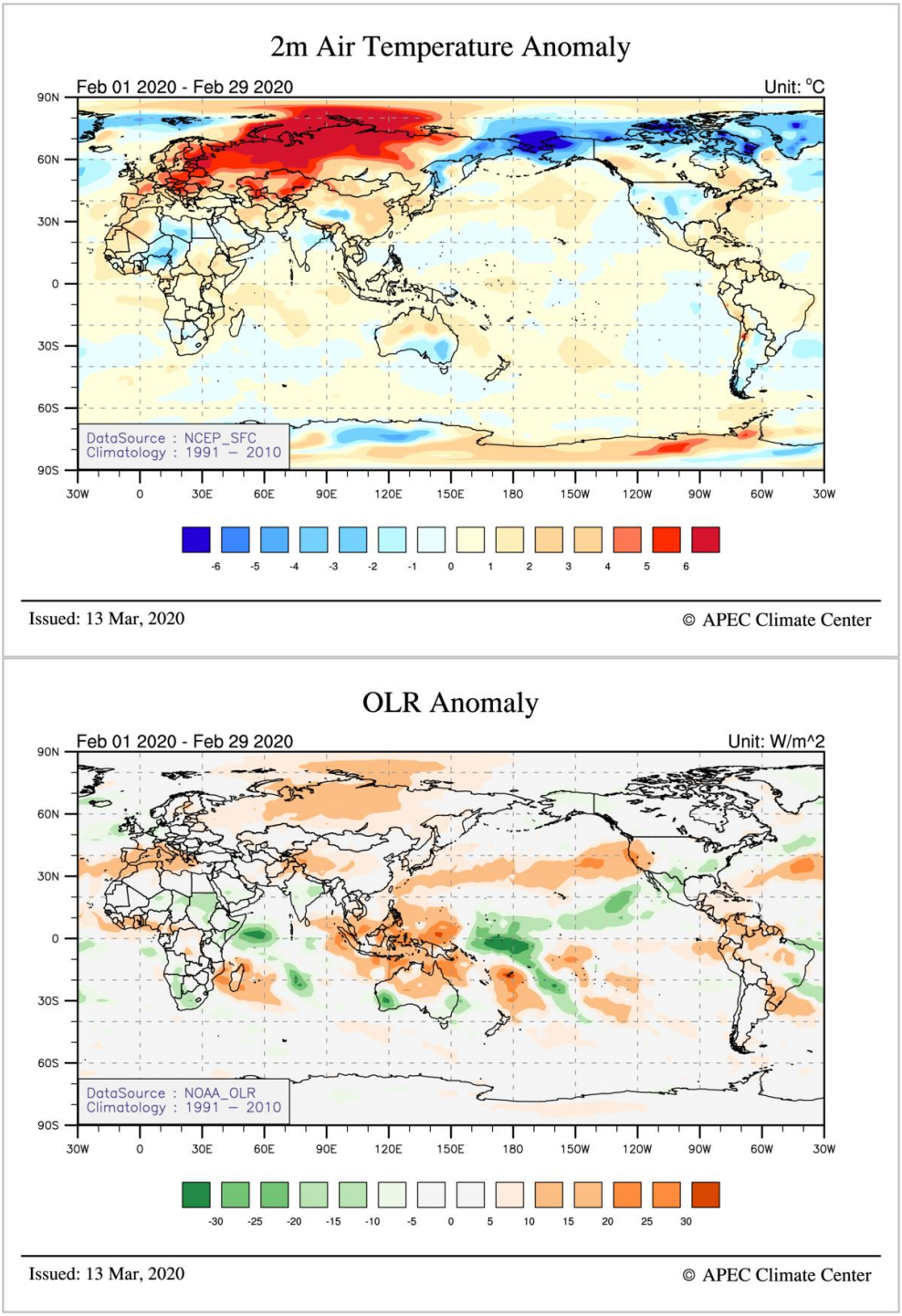

Fig. 3. Monthly mean anomalies of the observed 2m air temperature (top) and OLR (bottom) for February 2020.

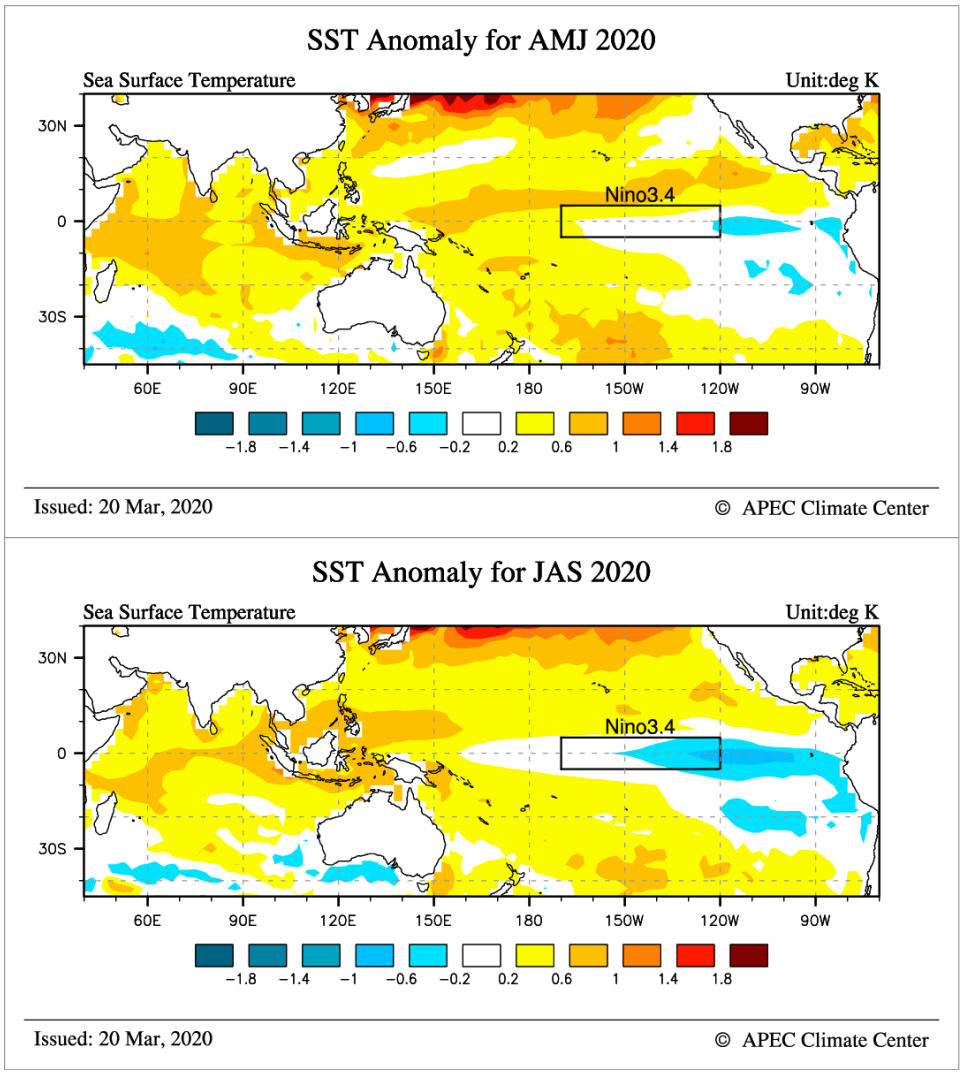

Fig. 4. Multi-model ensemble (MME) forecasts of SST anomalies for April – June 2020 (top) and July – September 2020 (bottom). Anomalies are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

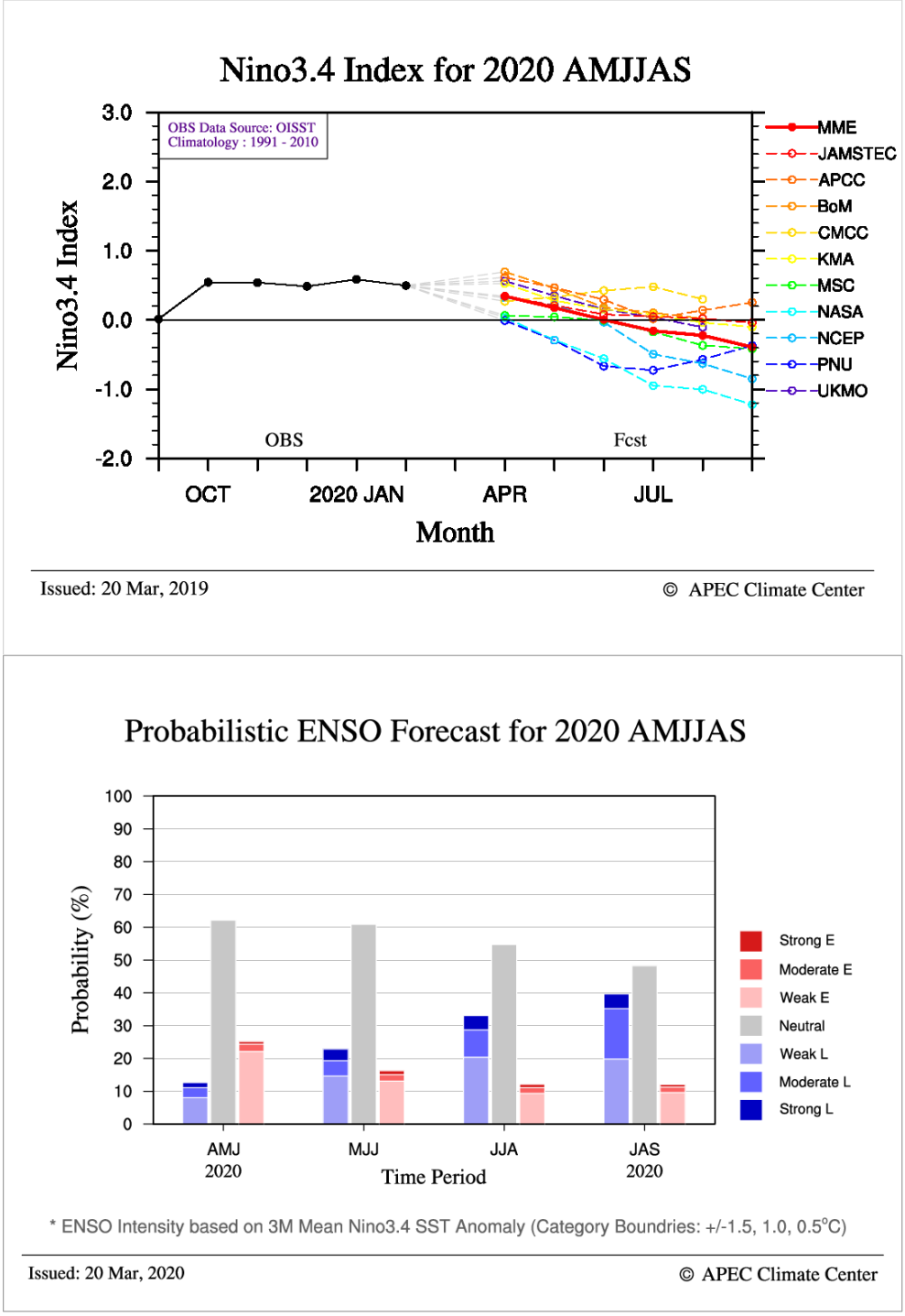

Fig. 5. Predicted monthly mean Niño3.4 index from individual models and the MME for April – September 2020 (top). Probabilistic MME forecasts of the status and intensity based on 3-month mean Niño3.4 index for four overlapping 3-month mean periods (bottom). Anomalies are computed with respect to the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

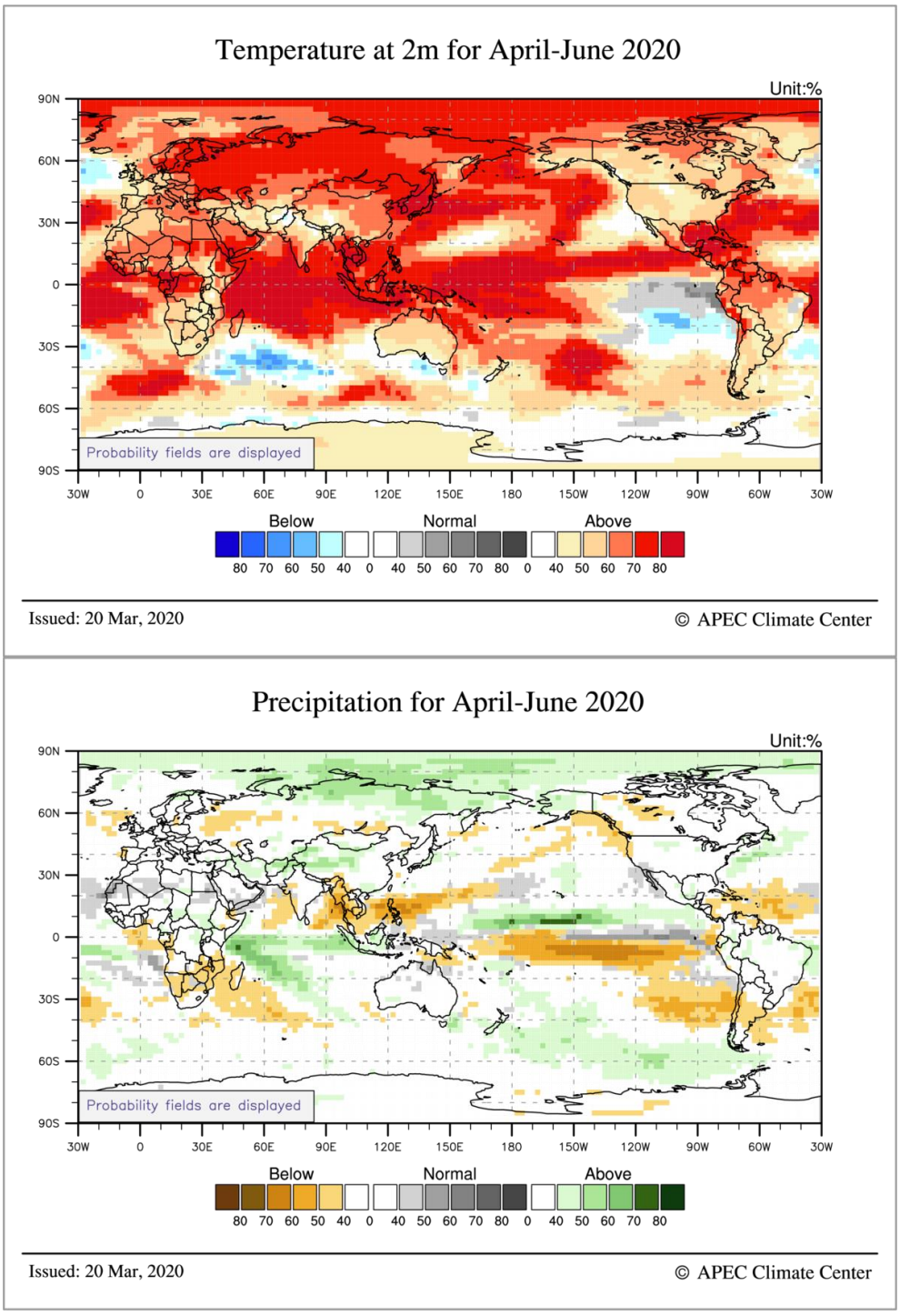

Fig. 6. Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for April – June 2020. Normal conditions are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

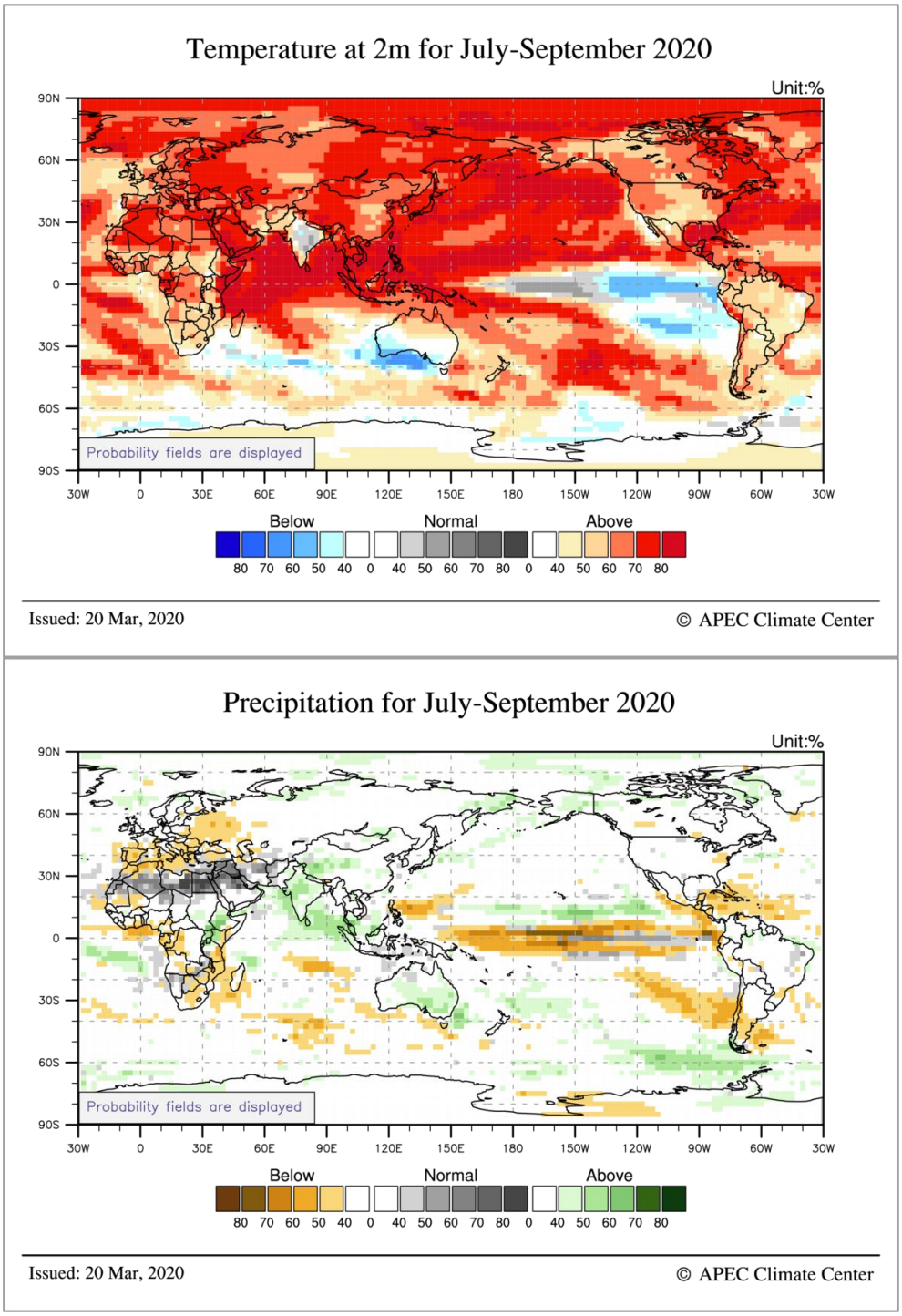

Fig. 7. Probabilistic MME forecasts of 2m temperature (top) and precipitation (bottom) for July – September 2020. Normal conditions are computed with respect to the common base period of participating models in the APCC MME prediction (1991-2010).

* 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).