WEATHER CLIMATE WATER

WORLD METEOROLOGICAL ORGANIZATION

GLOBAL SEASONAL CLIMATE UPDATE

TARGET SEASON: April-May-June 2025

Prepared: 20 March 2025

Summary

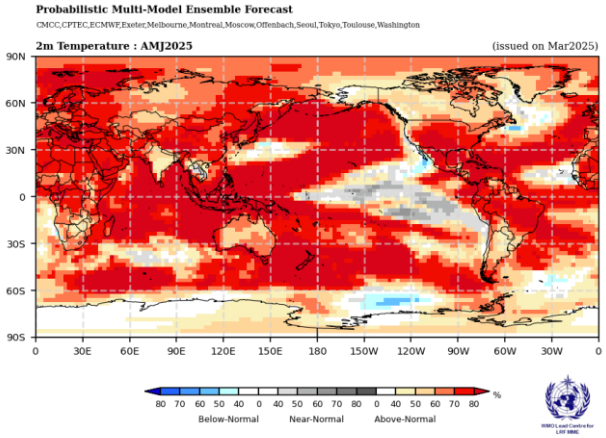
For the seasonal mean spanning December 2024 to February 2025, global ocean sea-surface temperature (SST) anomalies were generally above average, with the exception of the equatorial central Pacific. The Pacific Niño SST index anomalies in the far eastern Pacific (Niño 1+2) and the eastern Pacific (Niño 3) were near zero, while those in the central Pacific (Niño 3.4 and Niño 4) were slightly below average. Despite these weak below-average SST anomalies, oceanic and atmospheric conditions in the equatorial central and eastern Pacific remained consistent with a weak La Niña. The observed Indian Ocean Dipole (IOD) anomaly was slightly below average. Meanwhile, reflecting the persistent warmth in the tropical Atlantic over the past year, SST index anomalies in both the North Tropical Atlantic (NTA) and South Tropical Atlantic (STA) were above average.

For April–June 2025, sea surface temperature anomalies in the Niño 3.4 and Niño 3 regions are forecast to decline to near-average levels, indicating a neutral state for the El Niño–Southern Oscillation (ENSO). In the Niño 4 region farther west, sea surface temperature anomalies are also projected to decrease to near-average. The Indian Ocean Dipole (IOD) index is expected to trend toward below-average. Meanwhile, in the equatorial Atlantic, sea surface temperatures are anticipated to remain above average in both the northern (NTA) and southern (STA) regions.

Consistent with the anticipated continuation of widespread above-normal sea-surface temperatures across most oceans—except for the near-equatorial central Pacific Ocean—above-normal temperatures are predicted for nearly all land areas. Extensive regions with increased probabilities for above-normal temperatures include most of Africa, Madagascar, Asia, South America (north of 20°S), the Caribbean, Central America, the southern and eastern parts of North America (below 45°N), the western Pacific (west of 160°E), Australia, New Zealand, and Europe. Areas with the largest increase in the probability of above-normal temperatures include the Arabian Peninsula, extending eastward into Eastern Asia; the Maritime Continent; a horseshoe-shaped pattern radiating from the Maritime Continent and stretching north-eastward and south-eastward into the North and South Pacific; the region between 45°N and 20°S encompassing North and South America; the Caribbean; northern Africa extending into Europe; and New Zealand. Regions with a weaker enhancement in the probability of above-normal temperatures are expected over the Indian subcontinent, Southeast Asia, and the northern and western coastal areas of North America.

Rainfall predictions for April–June 2025 align with the typical enhanced positive east-to-west sea surface temperature gradient observed during La Niña, despite the Niño indices pointing to an ENSO-neutral state. Enhanced probabilities for below-normal rainfall are forecast along and north of the equator, extending eastward from 150°E to 150°W and arching north-eastward toward the southwestern region of North America. Probabilities for near-normal rainfall are expected along the equator from 150°W to 90°W. Moderately enhanced probabilities for above-normal rainfall are predicted over the central and eastern Maritime Continent. South of this, the region of above-normal rainfall probabilities extends to northern and western parts of Australia and south-eastward to 150°W. Over Africa, rainfall predictions show no clear signal, except for a few isolated areas. Enhanced probabilities for below-normal rainfall are anticipated over the southern Arabian Peninsula, extending eastward into Central Asia. Increased probabilities for above-normal rainfall are indicated over the Indian subcontinent, stretching eastward into the Bay of Bengal and Southeast Asia. In North America, enhanced probabilities for below-normal rainfall are forecast for the interior and southern regions, with stronger probabilities centred in the southwest. In South America, above-normal rainfall is expected in the northwest, while below-normal rainfall probabilities are predicted for the northeast, extending into the Atlantic and the western coastal areas south of 30°S. Weakly enhanced probabilities for above-normal rainfall are also indicated north of 60°N.

Surface Air Temperature, AMJ 2025



Precipitation, AMJ 2025

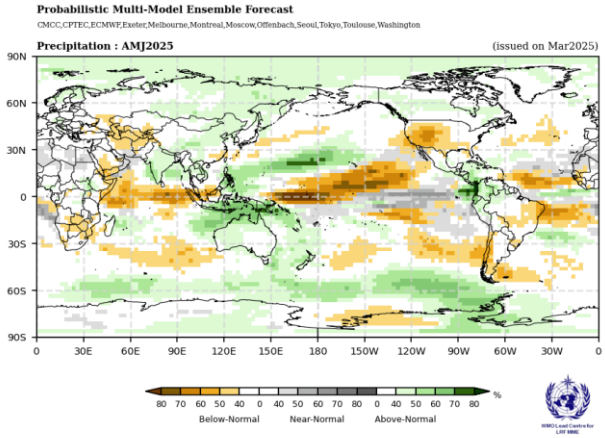
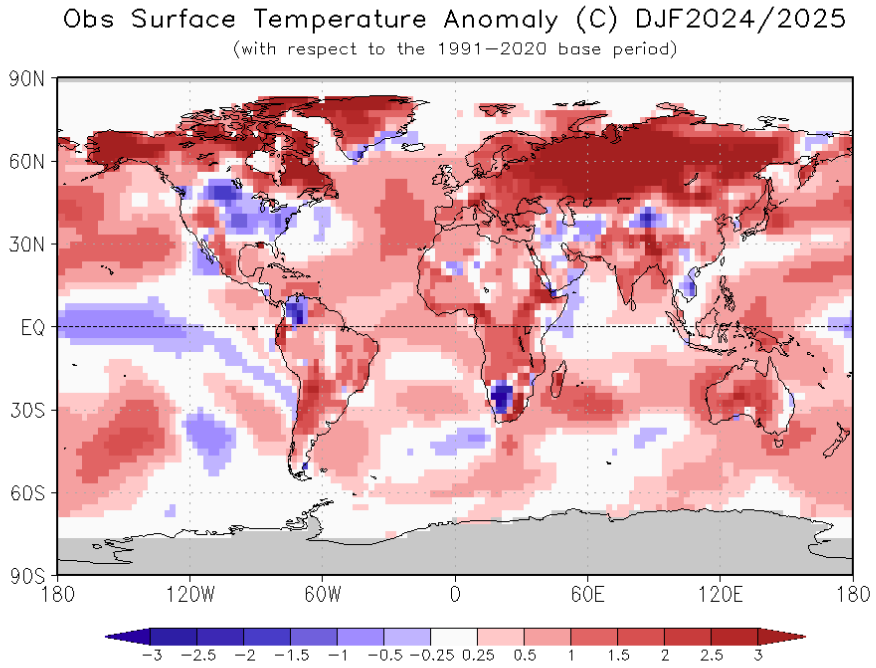


Figure 1. Probabilistic forecasts of surface air temperature and precipitation for the season April-June 2025. The tercile category with the highest forecast probability is indicated by shaded areas. The most likely category for below-normal, above-normal, and near-normal is depicted in blue, red, and grey shadings respectively for temperature, and orange, green and grey shadings respectively for precipitation. White areas indicate equal chances for all categories in both cases. The baseline period is 1993–2009.



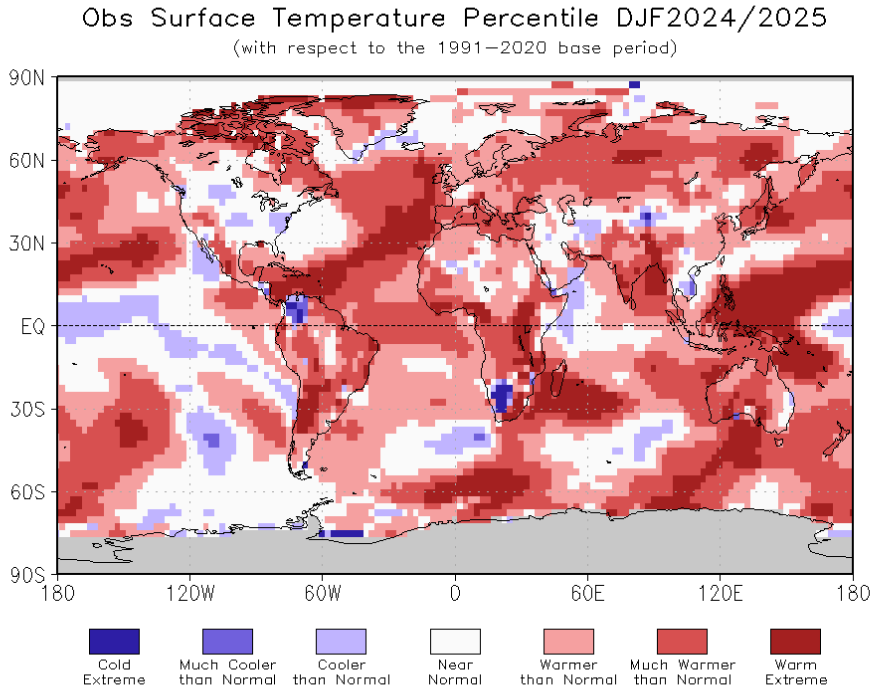
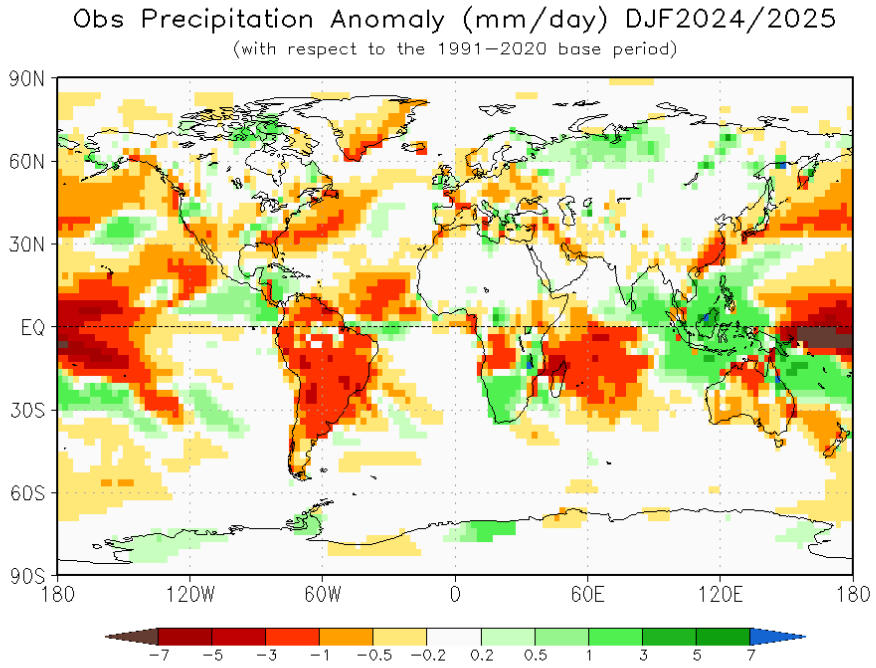


Figure 2. Observed December-February 2024-2025 near-surface temperature anomalies relative to 1991–2020 (top). The Cooler than Normal, Near Normal, and Warmer than Normal shadings on the percentile map (bottom) indicate that seasonal mean anomalies were in the bottom, middle, and upper tercile of the 1991–2020 distribution, respectively. Regions with anomalies in the lowest and highest decile (or 10%) of the distribution are marked as Much Cooler than Normal and Much Warmer than Normal, respectively. The Cold Extreme and Warm Extreme shadings indicate that the anomalies exceeded the coldest and warmest temperature values of the 1991–2020 period for the season. Grey shading indicates areas where observational analysis was not available. (Source: U.S. Climate Prediction Center).



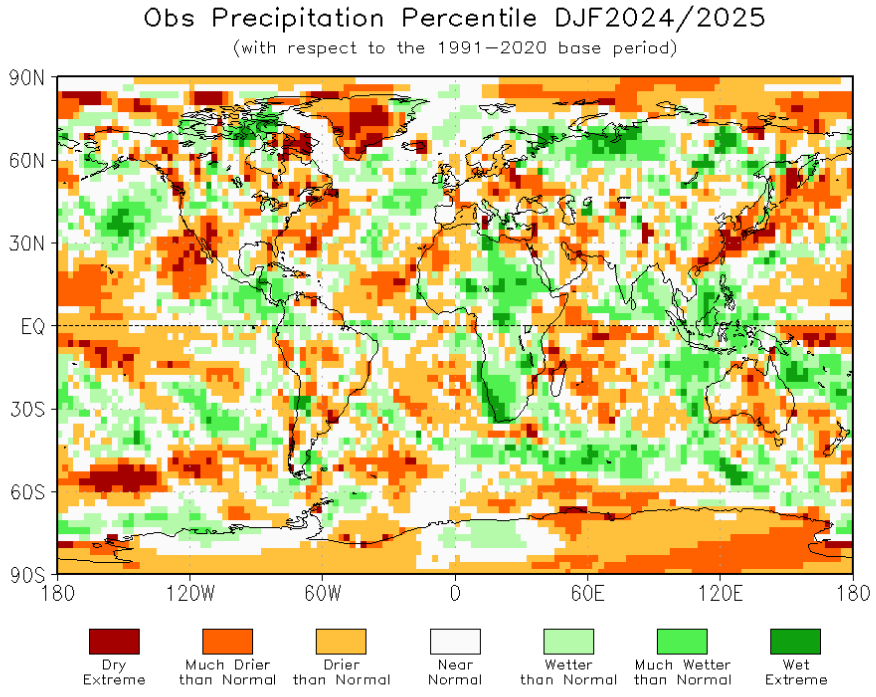
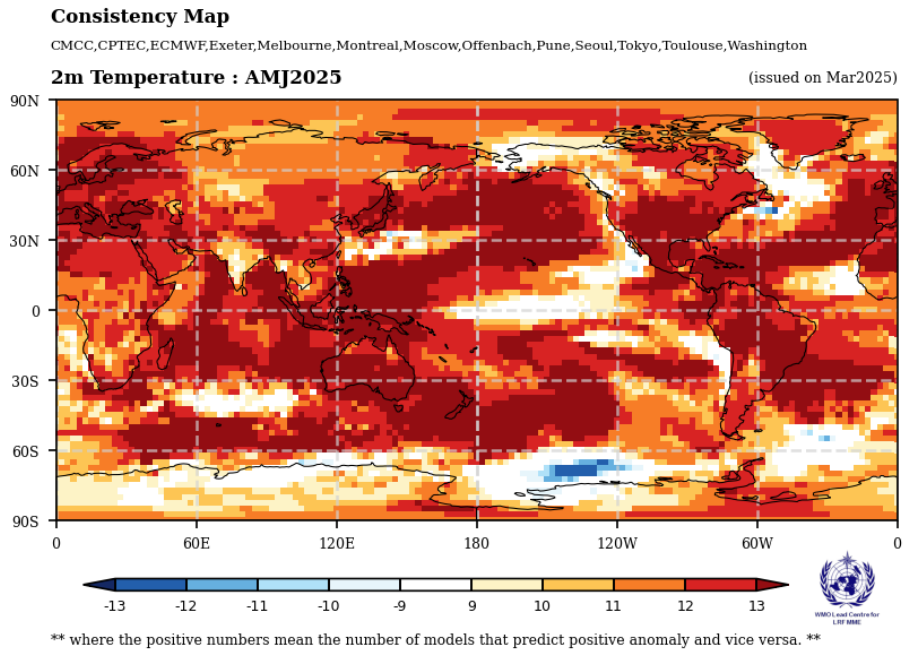


Figure 3. Observed precipitation anomalies for December-February 2024-2025, relative to 1991–2020 base period (top). The Drier than Normal, Near Normal and Wetter than Normal shadings on the percentile map (bottom) indicate that seasonal mean anomalies were in the bottom, middle, and upper tercile of the 1991–2020 distribution, respectively. Regions with anomalies in the lowest and highest decile (or 10%) of the distribution are marked as Much Drier than Normal and Much Wetter than Normal, respectively. The Dry Extreme and Wet Extreme shadings indicate that the anomalies exceeded the driest and wettest values of the 1991–2020 period for the season. (Source: U.S. Climate Prediction Center).



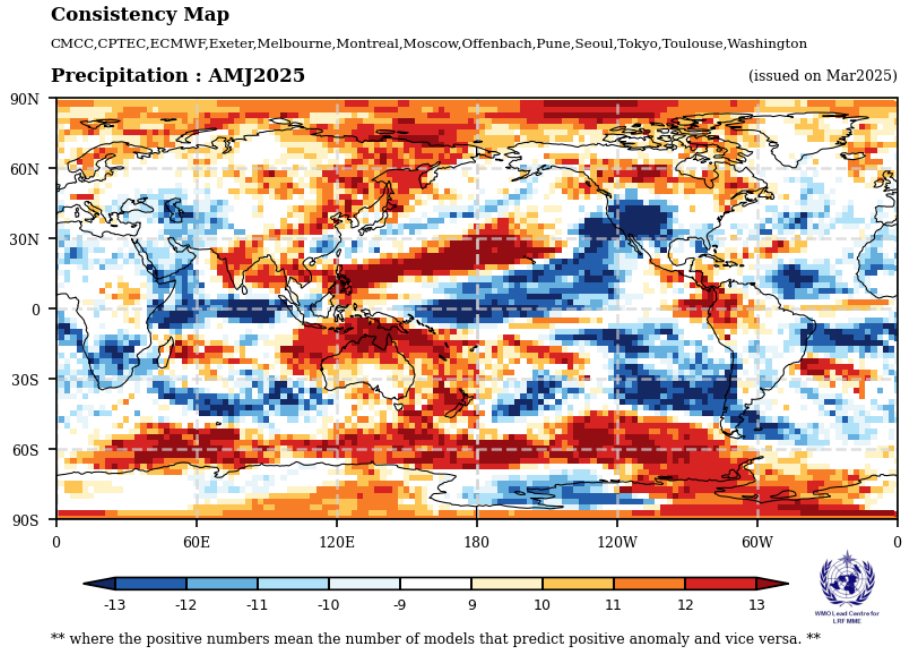


Figure 4. Consistency maps for the sign of ensemble mean anomalies of April-June 2025 seasonal mean for (top) surface air temperature, and (bottom) rainfall (bottom) from different model forecasts. The consistency map is constructed using the following procedure: At each grid point the number of models with positive or negative anomaly are counted and the number that is larger in plotted on the map. For example, if the number of models with positive (negative) anomaly is larger than the respective count is plotted on the map using the red (blue) scale. Darker (lighter) colours imply that there is a higher (lower) consistency in the sign of anomalies between models.