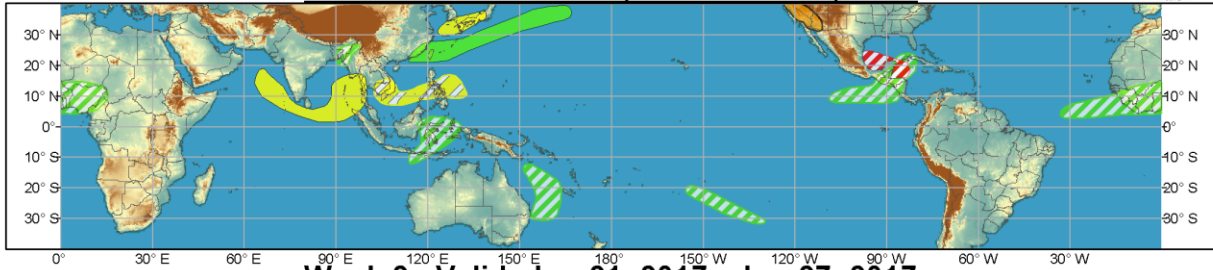




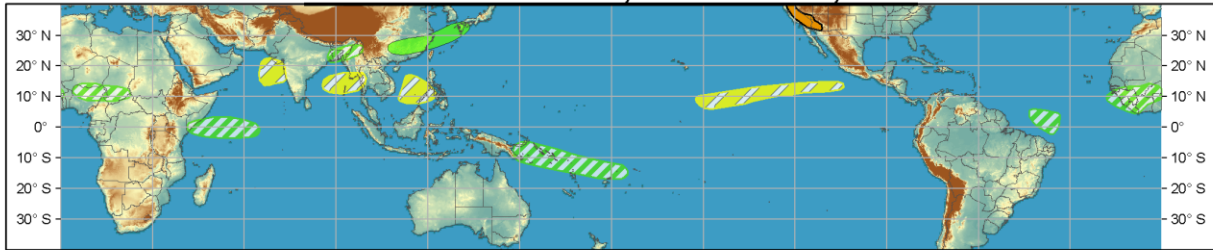
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Jun 14, 2017 - Jun 20, 2017



Week 2 - Valid: Jun 21, 2017 - Jun 27, 2017



Confidence
High Moderate

Tropical Cyclone Formation		Development of a tropical cyclone (tropical depression - TD, or greater strength).
Above-average rainfall		Weekly total rainfall in the upper third of the historical range.
Below-average rainfall		Weekly total rainfall in the lower third of the historical range.
Above-normal temperatures		7-day mean temperatures in the upper third of the historical range.
Below-normal temperatures		7-day mean temperatures in the lower third of the historical range.

Product is updated once per week, except from 6/1 - 11/30 for the region from 120E to 0, 0 to 40N. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

Produced: 06/13/2017
Forecaster: D.Harnos



Substantial uncertainty exists regarding the evolution of ongoing convective modes in the global tropics. The RMM index suggests an emerging Madden-Julian Oscillation (MJO) in Phase 1 over Africa after exhibiting reduced amplitude over the previous week. The CPC velocity-potential based MJO index tracks an eastward propagating enhanced convective signal that is presently over the Atlantic. Given a periodicity of around 2 weeks this signal is seemingly Kelvin-wave driven, however, as it is at least double the characteristic phase speed of the MJO. Objective filtering of outgoing longwave radiation and velocity potential fields confirms presence of a Kelvin wave presently near the Prime Meridian, with another Kelvin wave analyzed just east of the Date Line. The aforementioned analyses also show a more slowly eastward propagating convective envelope shifting east from Africa to the Indian Ocean during May, and would currently be centered over the eastern Maritime Continent. The slow moving enhanced convective signal has been damped, however, by mid-latitude ridging that has been inducing mass building aloft between the eastern Maritime Continent and Date Line in recent weeks, with this scenario helping to damp convection here, which could be masking the slowly-moving enhanced mode noted earlier. Dynamical model guidance is mixed on the treatment of these modes over the next two weeks, with the GEFs and several other systems maintaining an intraseasonal signal in Phase 1 or pushing it eastward into the Indian Ocean. The ECMWF solution is favored in this outlook and suggests weakness

of the MJO throughout the outlook period, due to the pair of observed Kelvin waves being forecast to continue and remain nearly 180 degrees apart, effectively destructively interfering with the RMM index.

During the past week a pair of tropical cyclones (TCs) developed. First, Tropical Storm Calvin developed in the East Pacific just south of the Gulf of Tehuantepec on 11 June, making landfall in Oaxaca on the 13th with 40 mph winds and accompanying heavy rains and mudslides. In the West Pacific, Tropical Storm Merbok formed over the South China Sea on 11 June and made landfall just east of Hong Kong the following day with 45 mph winds, flooding rains, and landslides. Currently the National Hurricane Center is monitoring a potential TC formation just east of the Yucatan and forecasting a ___20%___ chance of a system forming in the next 5 days for this region in association with a monsoon gyre forecast to drift northwestward from South America. Ensemble guidance has been supporting development of this system over the last week of runs, but a consistent southern shift in the forecast track has been bringing the system closer to Central America which could help inhibit development. Moderate confidence is given on either side of the Yucatan for TC formation in Week-1 in association with this system, with a chance of development possibly sliding into early Week-2. A robust early season easterly wave is also currently present in the tropical Atlantic near 5N/15W, but development appears unlikely before the wave reaches high wind shear to the east of the Lesser Antilles. Tropical cyclogenesis is also possible during Week-1 and Week-2 with low confidence in a similar region to where Calvin formed in the East Pacific, and also in the West Pacific stretching approximately between the Philippines and Guam. Each of these regions are supported by statistical guidance, but dynamical guidance is less bullish.

The Week-1 outlook is influenced heavily by assumed evolution of ongoing modes of tropical variability and ensemble guidance, which are reasonably consistent during this timeframe. Highest confidence in Week-1 is for above-normal precipitation from Southeast China and across Taiwan into the North Pacific associated with the Meiyu front, anomalous dryness to the north of this feature, and anomalously dry conditions across the northern Indian Ocean in association with a quasi-low frequency suppressed mode that has drifted slowly eastward over the last month. Moderate confidence of above-normal precipitation exists in the East Pacific and near the Yucatan associated with anticipated Kelvin wave passage and the aforementioned monsoon gyre that shows signs of tropical development. Enhanced phases of both a Kelvin and equatorial Rossby wave are responsible for favored above-normal precipitation in the tropical Atlantic and equatorial Africa. Below-normal precipitation is favored with moderate confidence in the vicinity of the South China Sea in association with the suppressed phase of an equatorial Rossby Wave. Remaining precipitation outlooks during Week-1 result from agreement among the CFS, GEFS, and ECMWF guidance. Above-normal temperatures are forecast with high confidence for the Southwest U.S. throughout both weeks in association with anomalous ridging in the North Pacific that could yield all time record high temperatures in some areas.

Model solutions diverge substantially during Week-2, with the ECMWF having a wetter solution across the Indian Ocean while the CFS is very dry. The CFS instead has anomalous convection near the Date Line and in the East Pacific, while the ECMWF is dry there. These differences are apparently tied to the CFS initiating low frequency convection over the Indian Ocean during Week-2 and Central Pacific convection associated with an equatorial Rossby wave. ECMWF guidance appears more representative of Kelvin wave activity in the Indian Ocean and Maritime Continent, while it lacks the Rossby wave in the Central Pacific depicted by the CFS. Given the CFS tending to overplay westward moving features, ECMWF guidance was slightly favored in Week-2, but overall confidence is low. High confidence in above-normal precipitation continues in Week-2 with the Meiyu front lifting north towards Japan. Moderate confidence of anomalous drying in the South China Sea is forecast to continue in Week-2 associated with the suppressed phase of a currently observed equatorial Rossby wave. Anomalous dryness forecast in the Arabian Sea appears tied to a building low frequency state for this region. Remaining Week-2 precipitation forecast areas are sparse due to the lack of consensus in the forecast guidance.

Forecasts over Africa are made in consultation with the CPC international desk, and can represent local-scale conditions in addition to global-scale variability.