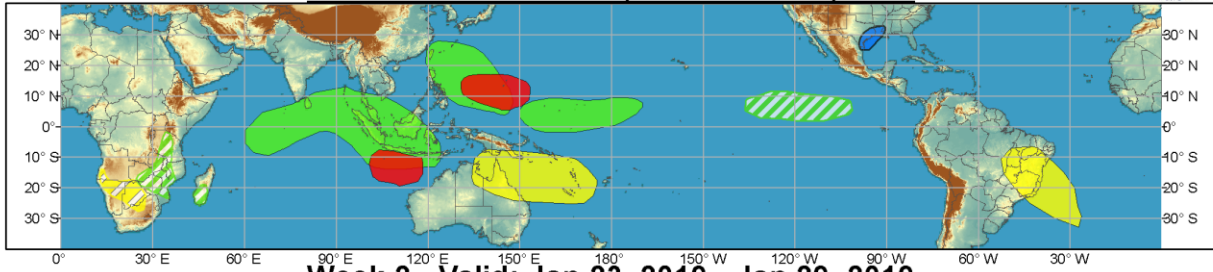




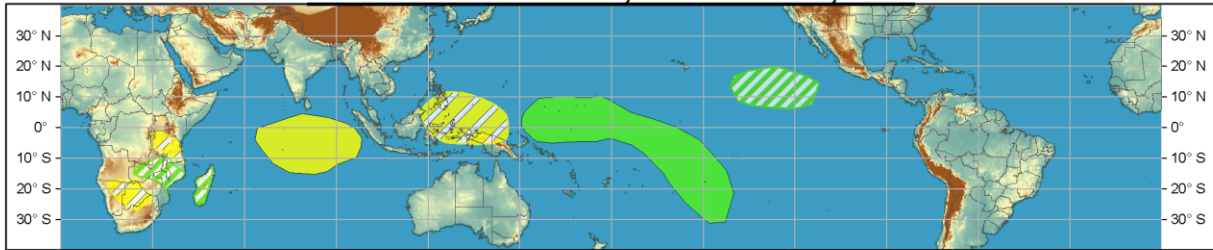
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Jan 16, 2019 - Jan 22, 2019



Week 2 - Valid: Jan 23, 2019 - Jan 29, 2019



Produced: 01/15/2019

Forecaster: Maurin

| Confidence | | |
|------------|----------|--|
| High | Moderate | |
| | | Development of a tropical cyclone (tropical depression - TD, or greater strength). |
| | | Weekly total rainfall in the upper third of the historical range. |
| | | Weekly total rainfall in the lower third of the historical range. |
| | | 7-day mean temperatures in the upper third of the historical range. |
| | | 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.



In the past week, the Madden-Julian Oscillation interacted with Rossby waves and an emerging base state as it crossed the central and eastern Pacific, leading to weakening. The RMM index reflects this deamplification, bringing the signal back inside the unit circle, but has continued eastward propagation over the past few days. Dynamical model guidance is in good agreement that the MJO signal is likely to re-emerge over the Indian Ocean and Maritime Continent (between phases 3 and 4) early in Week-1. The amplitude of this signal is likely to remain modest, maintaining a value of about 1 on the RMM index, and will continue eastward propagation through Week-2. The convective envelope is expected to reach phase 5 at the end of Week-1 and continue through to phase 7, toward the western Pacific, for Week-2. Toward the end of Week-2, model guidance consistently indicates a possible stalling and weakening in the signal; however, the convective envelope could constructively interact with the emerging El Nino base state, so the confidence in this forecast of weakening toward the end of Week-2 is low. A recent westerly windburst in the western Pacific is likely to trigger a response along the equatorial Pacific, possibly causing a downwelling Kelvin wave, which could deepen the thermocline in the central and eastern Pacific. This would lead to increased availability of warm water for these regions, aiding the developing El Nino.

The Indian Ocean and western Pacific basins have been fairly active through the past month with the active MJO and abundant Rossby wave activity. For Week-1, areas of likely cyclogenesis have been

highlighted for both these regions. In the southern Indian Ocean, there is high confidence in a formation south of Java. Model guidance shows good agreement and continuity in this forecast, with the TC likely tracking west toward the central Indian Ocean. The MJO convective envelope is also expected to be exiting the Indian Ocean and shifting over the Maritime Continent during Week-1, which usually leads to an active TC period. Another region forecast for a TC formation is centered near 140 E in the western Pacific. This is another system that has consistently formed in model guidance through the past several runs, so with the agreement in the dynamical models, confidence for this forecast is high. This TC is likely to track westward toward the Philippines. With the MJO forecasted to shift further east over the Pacific in Week-2 and possibly weaken, these basins are expected to remain quiet in Week-2 at this time.

Forecast precipitation patterns for Week-1 are linked to either TC activity or larger dynamical model patterns, with some MJO influences. There is high confidence that a large region stretching from the central Indian Ocean to the Maritime Continent is expected to receive above normal precipitation. Over the western Pacific, two other areas of above normal precipitation are expected for Week-1, supported by both the expected TC activity and the MJO signal as it shifts further over the Maritime Continent. Model guidance is in good agreement over a region of dryness for northeastern Australia and the south Pacific, which is consistent with MJO composites for phases 3 and 4. With the increased warm water availability over the eastern Pacific and support from dynamical guidance, a region of above normal precipitation has been forecast just north of the equatorial eastern Pacific with moderate confidence. The dry signal over Brazil is expected to continue through Week-1. For the U.S., anomalously cold temperatures are likely for the western and central Gulf Coast due to the large-scale upper-level pattern, coinciding with the lagged impacts of the MJO signal passing through the western hemisphere last week into this week; for more information on this particular forecast, please see the U.S. Hazards Outlook.

For Week-2, the forecast is consistent with the typical impacts seen from a MJO signal in phases 5-7. The suppressed convective envelope is forecast over the Indian Ocean and parts of the Maritime Continent, causing below normal precipitation for these two regions. There is more confidence in this forecast over the Indian Ocean, due to the variability in the speed of the eastward propagation in the models. For the western Pacific and the SPCZ, above normal precipitation is expected, which is supported by both dynamical model guidance and MJO phase 5/6/7 composites. The region of above normal precipitation over the eastern Pacific is expected to continue into Week-2.

Forecasts over Africa and South America are made both in consultation with the CPC international desk and using dynamical model consensus, and therefore can represent local scale conditions in addition to global scale variability.