Global Tropics Hazards And Benefits Outlook
January 5, 2016

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Outline

1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts
Tropical Cyclone Formations

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Week 1 - Valid: Dec 30, 2015 - Jan 05, 2016

Week 2 - Valid: Dec 30, 2015 - Jan 05, 2016
Synopsis of Climate Modes

**ENSO:**
- Current: [El Niño Advisory](#)
- El Niño is expected to remain strong through the Northern Hemisphere winter 2015-16, with a transition to ENSO-neutral anticipated during late spring or early summer 2016.

**MJO and other subseasonal tropical variability:**
- The MJO remains active, and is currently propagating over the Pacific (constructively interfering with the El Niño).
- A consensus of dynamical model MJO index forecasts supports continued eastward propagation of the MJO over the Western Hemisphere during Week-1. During Week-2, the ECMWF brings the MJO index over the Indian Ocean, while the GFS depicts a westward adjustment back to the Pacific.

**Extratropics:**
- The MJO contributed to a large pattern change over the Northern Hemisphere, including a transition to a negative AO pattern. There is uncertainty regarding how much of an impact the MJO will continue to have on the extratropical pattern, due to increased divergence among the model guidance as well as uncertainty regarding the extent of Indian Ocean convection if the upper-level MJO structure holds together.
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Week 1 - Valid: Jan 06, 2016 - Jan 12, 2016

Week 2 - Valid: Jan 13, 2016 - Jan 19, 2016

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.
Robust eastward propagation of the MJO is evident in the upper-level pattern.
The GFS (left) brings the RMM Index back to the central Pacific, due in part to forecasts for a large low-level westerly wind burst.

The ECMWF (center) maintains a robust MJO signal across the Western Hemisphere to the Indian Ocean by the end of Week-2.
Average Conditions when the MJO is present
MJO activity is evident in the OLR field during December.

Note the westward moving feature near the Date Line at the end of the month.
January Tropical Storm Formation by MJO phase

- Phase 1 (67 days): 14 storms
- Phase 2 (101 days): 15 storms
- Phase 3 (112 days): 20 storms
- Phase 4 (68 days): 11 storms
- Phase 5 (67 days): 8 storms
- Phase 6 (58 days): 18 storms
- Phase 7 (81 days): 11 storms
- Phase 8 (105 days): 16 storms
- Null (36+ days): 67 storms
Connections to U.S. Impacts
AO: Observed & ENSM forecasts

1000mb Z (Obs: 08Sep2015 - 05Jan2016)  AD index
mean=0.7500

cor(w/obs)=0.8446

1000mb Z (7day Forecast)  AD index
mean=0.7506

cor(w/obs)=0.8446

1000mb Z (10day Forecast)  AD index
mean=0.4731

cor(w/obs)=0.6950

1000mb Z (14day Forecast)  AD index
mean=0.2987

cor(w/obs)=0.4443
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Produced: 01/05/2016

Forecaster: Allgood

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