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Maldives Meteorological Service

Rainfall Outlook over Maldives

For May 2019

Summary

Lower than average rainfall is most likely across Maldives during the month of May. Most of the prevailing regional and global climatic features like Indian Ocean Dipole (IOD), Madden Julian Oscillation (MJO) and El Niño -Southern Oscillation (ENSO) are in favourable condition for suppressed convective activities over Indian Ocean region.

Introduction

This consensus rainfall outlook for Maldives has been developed through an expert assessment of the prevailing regional and global climate conditions and forecasts from different climate models of World Meteorological Organization (WMO) lead centers around the world.

El Niño -Southern Oscillation (ENSO): Weak El Niño is currently present with above average sea surface temperatures (SSTs) throughout equatorial Pacific Ocean. Additionally, above average upper-ocean heat content sustain in the area between longitudes 180° – 100°W, with anomalous convection and wind pattern over relevant areas. (Climate Prediction Center /NCEP, 2019).

Indian Ocean Dipole (IOD): IOD is currently in its neutral phase, it is likely to remain neutral throughout May. (Bureau of Meteorology, Australia 2019).

Observed rainfall over Maldives show that, with positive IOD during May, rainfall is mostly above normal for northern atolls and part of southern atoll, while below normal rainfall over rest of the country.

Madden-Julian Oscillation (MJO): MJO strengthened over Indian Ocean during late April and over the far western maritime continent. GEFS and ECMWF predict MJO active phase on Maritime Continent during week 1 and West Pacific on week-2. And suppressed phase of MJO is predicted over Indian Ocean by Mid-May (Climate Prediction Center /NCEP, 2019), which is not in favourable condition for convective activities over this area.



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Other features that influence variability of weather over Maldives during May include Inter Tropical Convergence Zone (ITCZ), strength and position and strength of the High Pressure system (Mascarene High) in the south of equator, location and orientation of monsoon trough, strength of the East-African Jet, pre-monsoon Tropical cyclones, Meso-scale Convective Complexes (MCC), Squall lines and localised convective clouds. These systems bring severe thunderstorms, floods, strong average and gusty winds from westerly direction and consequent moderate to rough seas. Additionally, swell surge is also a phenomenon that sometimes intrude inland and affect fresh water lens, especially when stormy weather coincides with high tide. Moreover, sea state observes to be moderate when currents and winds are in different direction during the seasonal transition of the current.

During the month of May, rainfall on average accounts for 11%, 12% and 14% of annual rainfall in southern, central and northern atolls respectively.

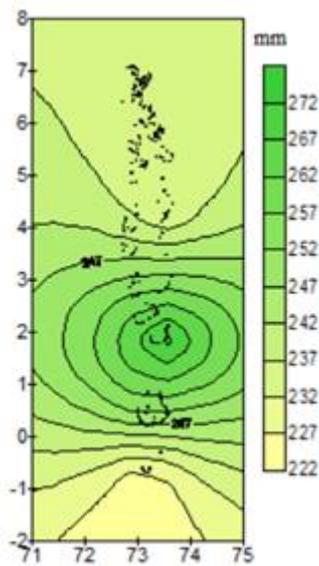


Figure 1: Average rainfall distribution over the country during the month of May

During May, *Laamu* atoll area is observed to receive relatively higher rainfall than rest of the country.

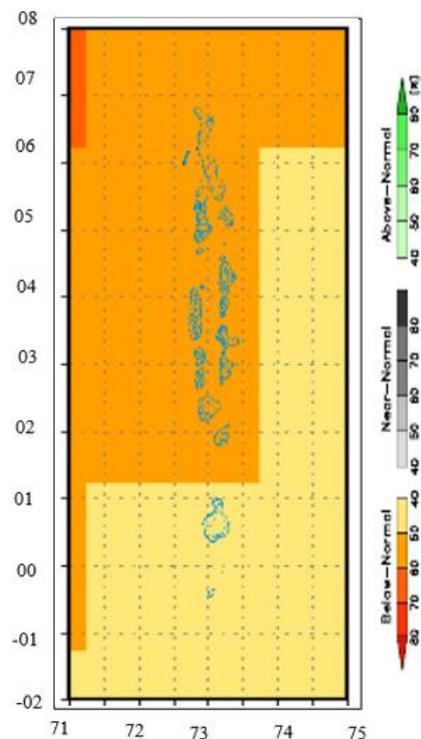


Figure 2: Probability of rainfall departure from mean for the month of May 2019

Most of the global models predict below normal rainfall over Maldives during May, while few of them indicate chances of normal rainfall for both central and southern atolls. Additionally, Probabilistic Multi-Model Ensemble of WMO lead centres for long-range climate prediction predicts below normal rainfall throughout the country during this month of May.



Conclusion

By considering the prevailing weak El Niño status, neutral IOD condition and suppressed phase of MJO over Indian Ocean as well as the dynamical prediction of climate models, below normal rainfall likely to receive throughout the country during May 2019.

References

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