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Maldives Meteorological Service



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Rainfall and Temperature Outlook over Maldives

For December 2021

Summary

Rainfall is likely to be normal in some parts of northern-most atolls and below normal over rest of the country. Temperature is expected to be normal in northern atolls and slightly above normal in central and southern during the month.

Introduction

This consensus outlook on rainfall and temperature for Maldives has been prepared through assessments including prevailing regional and global climate condition and prediction of various climate models, seasonal forecast of WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble (LC-LRFMME), North American Multi-Model Ensemble (NMME) Forecasts of Monthly Climate Anomalies, and monthly forecasts of European Centre for Medium-Range Weather Forecasts (ECMWF).

Current status of major climate drivers.

El Niño Southern Oscillation (ENSO): La Niña conditions presents with below average equatorial Sea Surface Temperatures across central and east-central Pacific Ocean.

Indian Ocean Dipole (IOD): Global models indicate IOD value in neutral range, and same condition to be continued during December 2021.

Madden-Julian Oscillation (MJO): MJO is expected to be over Maritime Continent (Phase 5) at the beginning of this month. It is expected to become enhanced and propagate rapidly to Western Pacific (Phase 7) during the 2nd week and move westwards into phase 6. An eastward propagation is likely during the 3rd week with re-emergence into phase 7 and remain over the same area till end of the month.



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Calibration of climate models

Climate Predictability Tool (CPT) was used to downscale global model outputs to local scale. These results indicate slightly above normal rainfall over northern atolls and below normal rainfall over central and southern atolls.

Global Producing Centres and WMO Lead Centre Forecasts

Probabilistic Multi-Model Ensemble of WMO LC-LRFMME indicates below normal rainfall across the country during December 2021.

Probabilistic Multi-Model Ensemble of WMO LC-LRFMME indicates normal Temperature over northern-most atolls and above-normal Temperature over rest of the country for December 2021.

Climatic condition during the month of December

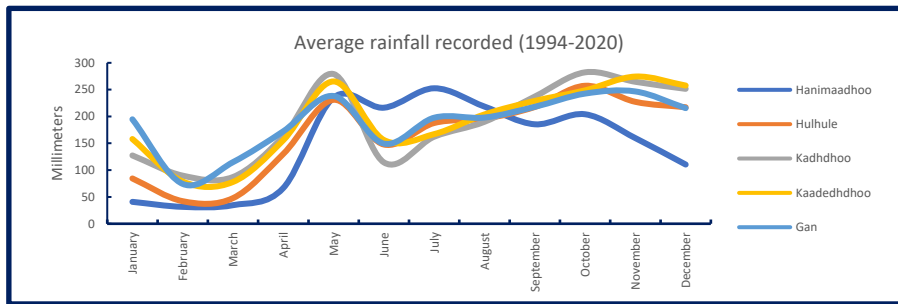


Figure 1- Seasonal distribution of average rainfall showing bimodal characteristics of rainfall in central and southern atolls and unimodal characteristics in northern atolls.

Figure 2: Long Term Average spatial distribution shows more rain over southern atolls than rest of the country during December.

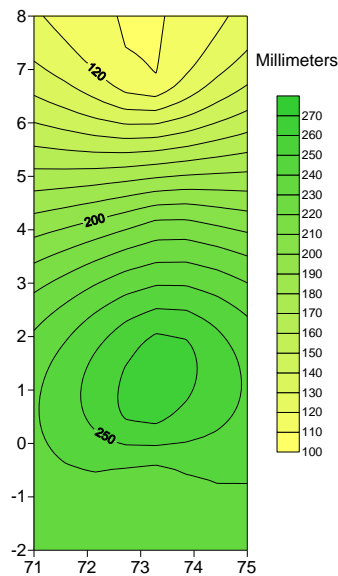


Figure 2: Spatial distribution of rainfall during December (1991-2019)

Figure 3: Percentage deviation of rainfall of December 2020 shows drier than normal over most parts of the country.

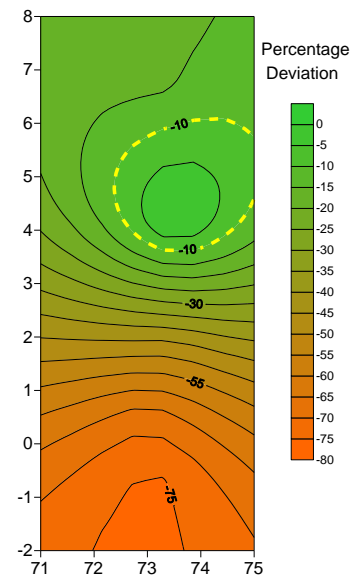


Figure 3: % Deviation of Rainfall from Long Term Average (December)



Conclusion

By considering the La Niña condition, neutral IOD, MJO signal over suppressed convective phase for Maldives area, Multi-Model Ensemble of WMO Lead Centres, NMME Forecasts and climate data of Maldives, rainfall is likely to be normal in some parts of northern-most atolls and below normal over rest of the country.

Temperature is expected to be normal in northern atolls and slightly above normal in central and southern atolls during the month.

Note:

Normal: Amount of rainfall between 90% - 110% of the average for the period.

Above normal: Amount of rainfall more than 110% of the average for the period.

Below Normal: Amount of rainfall less than 90% of the average for the period.