



**Maldives
Meteorological
Service**



CLIMATE REPORT

December 2022

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INTRODUCTION

The monthly climate report produced by Maldives Meteorological Service provides a general overview of the climate of Maldives for that particular month in terms of temperatures, rainfall, wind and sunshine. This report discusses general climatic conditions for the month of December 2022 and compares them with December 2021 data and also checks on the long-term climatic condition of the month of December.

GENERAL CLIMATE DURING THE MONTH OF DECEMBER

Normally Northeast monsoon onset during the month of December. Wind direction varies from North to Northeast over most parts of the country. Temperature is relatively cool and stable. Even though rainfall continues over central and southern atoll, rainfall is in decreasing trend over northern atolls. Cloudiness reduces over northern atolls and visibility is sometimes reduced due to hazy condition. As an indication of onset of Northeast monsoon, there will be more hours of sunshine and number of fine weather days increases over northern atolls.

Winds blows predominantly from Northeast to Easterly direction over most parts of the country. However, wind continues to prevail from West over southern most atolls. Wind speed on average is 11 miles per hour over central and some parts of northern atolls and relatively less speed over southern and northern most atolls with as average speed of 6-8 miles per hour. Winds continue to be predominantly from west over southern most atolls.

Average daily maximum temperature varies between 30 - 31°C over the country, while average daily minimum temperature varies between 24 - 25.5°C over the country.

Monsoon transitional bring relatively good amount of rainfall especially over central and southern atolls. On average 212- 260 millimeters of rainfall is received over central and southern atolls while northern atolls show a gradually decreasing trend of rainfall with an average of 110 millimeters.





Cloudy condition prevails over central and southern atolls, however, there are relatively good periods of sunshine as well. On average more than 7 hours of daily sunshine is received over the country.

OVERVIEW - DECEMBER 2022

OVERVIEW FOR THE WHOLE COUNTRY

- ❖ The total rainfall received over the country is lower (by 20%) as compared to last December of 2021.
- ❖ Only the northern regions received more rainfall compared to December 2021, where the rainfall received decreased by 50% in the southern regions.
- ❖ The highest maximum temperature is recorded in northern regions and the lowest minimum temperature is recorded in the southern regions.
- ❖ The total sunshine recorded for the country decreased by 14%. Only the southern regions recorded more sunshine compared to December 2021.
- ❖ Prevailed mean wind was relatively stronger over central and southern regions compared with the northern regions.

HISTORICAL RECORDS OF MALDIVES

	NORTH	CENTRAL	SOUTH
 HIGHEST MAX TEMPERATURE	35.0°C 30 th April 2016	34.9°C 3 th June 2020	33.6°C 17 th April 1998
 LOWEST MIN TEMPERATURE	18.2°C 23 th Dec 2002	19.0°C 23 th Nov 1984	19.7°C 24 th March 2015
 STRONGEST WIND	NW-89.7mph 28 th Aug 1991	W-71.3mph 3 rd Nov 1978	SW-103.5mph 29 th May 1991
 HIGHEST 24HRS RAINFALL	189.0mm 31 st May 2017	175.9mm 23 rd Dec 1977 Hulhule'	228.4mm 24 th Nov 2015
		200.0mm 11 th Dec 1998 Male'	

NORTHERN REGION

- ❖ The total rainfall received in Hanimaadhoo meteorological station is 107mm, while it was 98mm during December 2021. (8% increase in 2022)
- ❖ Heaviest rainfall in 24 hours was 34.6mm received on 6th December.
- ❖ There were 10 rain days in this December as compared to 9 days in December 2021.

CENTRAL REGION

- ❖ The total rainfall received in Hulhule' meteorological station is 225mm, while it was 237mm during December 2021. (5% decrease in 2022)
- ❖ Heaviest rainfall in 24 hours was 37.1mm received on 14th December.
- ❖ There were 15 rain days in this December as compared to 9 days in October 2021. However, total amount of rainfall received during this December is slightly less than that of December 2021.

SOUTHERN REGION

- ❖ The total rainfall received in Gan meteorological station is 104mm, while it was 209mm during December 2021. (50% decrease in 2022)
- ❖ Heaviest rainfall in 24 hours was 49.4mm received on 7th December.
- ❖ There were only 7 rain days in this December as compared to 19 days in December 2021. This fewer number of rainy days is being reflected by highly deficit rainfall over this area during this December.

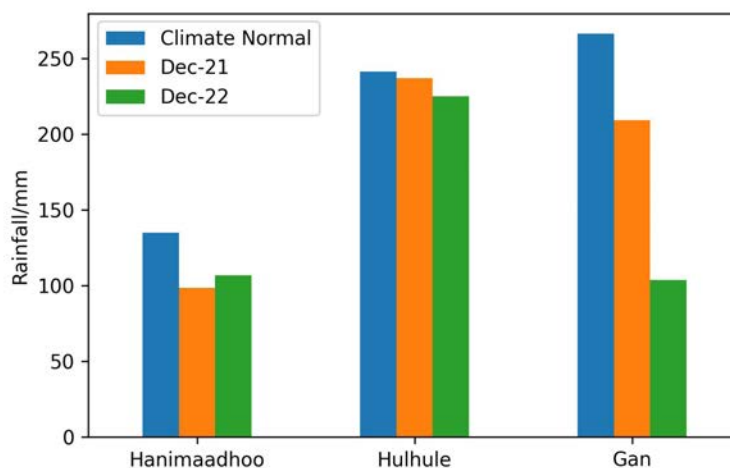


Figure1: The graph shows the monthly variation between the climate average of December vs the monthly rainfall of December 2021 and 2022.

TEMPERATURE

NORTHERN REGION

- ❖ The highest temperature recorded in December 2022 was 32.4°C on the 9th of the month. The maximum temperature varied between 32.4 and 28.4°C during this period. The maximum temperature recorded in December 2021 was 32.0 °C, on the 6th.
- ❖ The lowest minimum temperature recorded was 22.8°C of the 3rd of December. The minimum temperature varied between 22.8 and 27.4°C in this period. The minimum temperature recorded on December 2021 is 21.2 °C on the 24th.
- ❖ The mean temperature of December 2022 is 27.8°C.

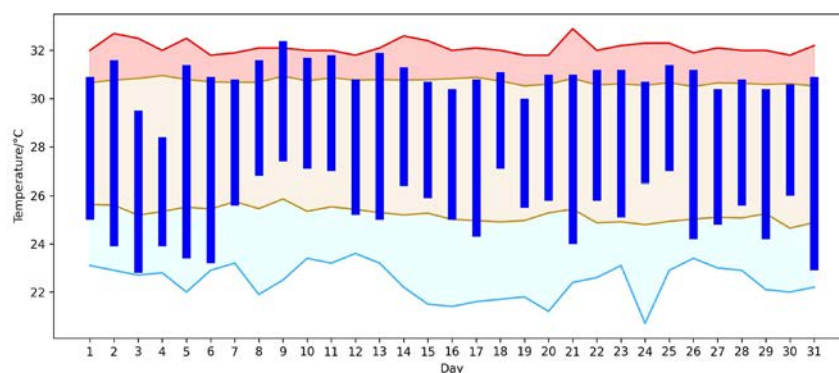


Figure 2: Daily Temperature of Hanimaadhoo met station during the month of December.

(The blue bars show December 2022 daily temperature range. The red top line shows the highest recorded value of that particular day of the month and the lower blue line represents the lowest value of that particular day of the month. The yellow line represents the climate average range of daily temperatures during the month of December.)

CENTRAL REGION

- ❖ The highest temperature recorded in December 2022 was 31.6°C on the 6th of the month. The maximum temperature varied between 31.6 and 28.9°C during this period. The maximum temperature recorded in December 2021 was 32.5 °C, on the 9th, 10th, and the 21st of December.
- ❖ The lowest minimum temperature recorded was 23.4°C of the 20th of December. The minimum temperature varied between 23.4 and 27.2°C in this period. The minimum temperature recorded on 2021 December is also 23.4°C on the 11th.
- ❖ The mean temperature of December 2022 is 28.0 °C.

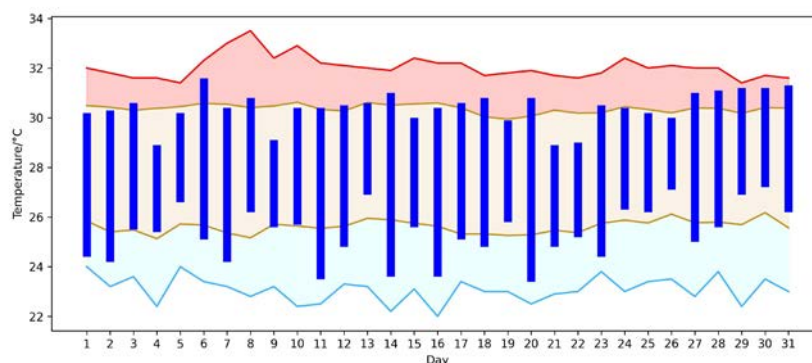


Figure 3: Daily Temperature of Hulhule' met station during the month of December.

(The blue bars show December 2022 daily temperature range. The red top line shows the highest recorded value of that particular day of the month and the lower blue line represents the lowest value of that particular day of the month. The yellow line represents the climate average range of daily temperatures during the month of December.)

SOUTHERN REGION

- ❖ The highest temperature recorded in December 2022 was 31.6°C on the 3rd of the month. The maximum temperature varied between 31.6 and 29.4°C during this period. The maximum temperature recorded in December 2021 was 32.2°C, on the 25th.
- ❖ The lowest minimum temperature recorded was 22.4 °C of the 30th of December. The minimum temperature varied between 22.4 and 27.0°C in this period. The minimum temperature recorded on December 2021 is also 23.0 °C on the 12th.
- ❖ The mean temperature of December 2022 is 28.1 °C.

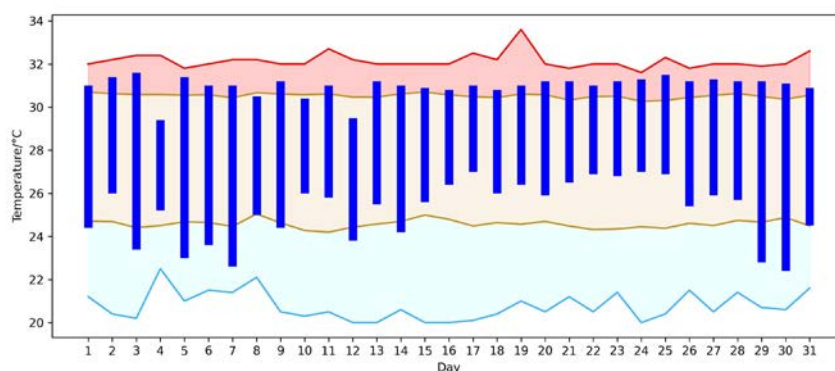


Figure 4: Daily temperature variation of Gan met station during the month of December.

(The blue bars show December 2022 daily temperature range. The red top line shows the highest recorded value of that particular day of the month and the lower blue line represents the lowest value of that particular day of the month. The yellow line represents the climate average range of daily temperatures during the month of December.)

SUNSHINE

NORTHERN REGION

- ❖ The climate average sunshine for December is 230.3 hours for Hanimaadhoo station.
- ❖ December 2022 recorded a total of 210.8 hours of sunshine which is below the climate average.
- ❖ This is significantly lower compared to the October 2021's total sunshine, which adds to 266.2 hours from 30 days.
- ❖ Out of the 31 days, only 1 day did not receive any direct sunshine due to cloudy sky.

CENTRAL REGION

- ❖ The climate average sunshine for December is 215.1 hours for Hulhule' station.
- ❖ December 2022 recorded a total of 203.9 hours of sunshine which is lower than the climate average.
- ❖ This is significantly lower compared to the December 2021's total sunshine, which adds to 265.9 hours from 31 days. (Decreased by 25%)
- ❖ Out of the 31 days, only 1 day did not receive any direct sunshine due to cloudy sky.

SOUTHERN REGION

- ❖ The climate average sunshine for December is 229.2 for Gan station.
- ❖ December 2022 recorded a total of 238.4 hours of sunshine which is above the climate average.
- ❖ This is also higher compared to the 2021's total sunshine, which adds to 224.8 hours from 31 days.
- ❖ Out of the 31 days, 2 days did not receive any direct sunshine due to cloudy sky.

NORTHERN REGION

- ❖ The maximum gust wind was recorded on the 29th of December 2022 at 11:51 hrs in the morning. The speed of the wind was 31knots (36mph) and the direction in which it was recorded is from the East north east.
- ❖ The maximum wind recorded on December 2021 was 23knots (26mph) from East north east.

CENTRAL REGION

- ❖ The maximum gust wind was recorded on 10th and 11th of December 2022 at 16:18 hrs and 1842hrs respectively. The speed of the wind was 39knots (45mph) and the direction in which it was recorded is from the West and the West north west.
- ❖ The maximum wind recorded on December 2021 is 31knots (36mph) from East.

SOUTHERN REGION

- ❖ The maximum gust wind was recorded on the 8th of December 2022 at 01:56 hrs in the early morning. The speed of the wind was 30knots (35mph) and the direction in which it was recorded is from the West.
- ❖ The maximum wind recorded on December 2021 is 26knots (30mph) on two occasions.

Table 1 below shows the frequency of maximum winds for the three regions. The unit used for wind speed is miles per hour (mph).

WIND SPEED	NORTH	CENTRAL	SOUTH
30-40 mph	2	3	8
40-50 mph	0	3	0
> 50 mph	0	0	0

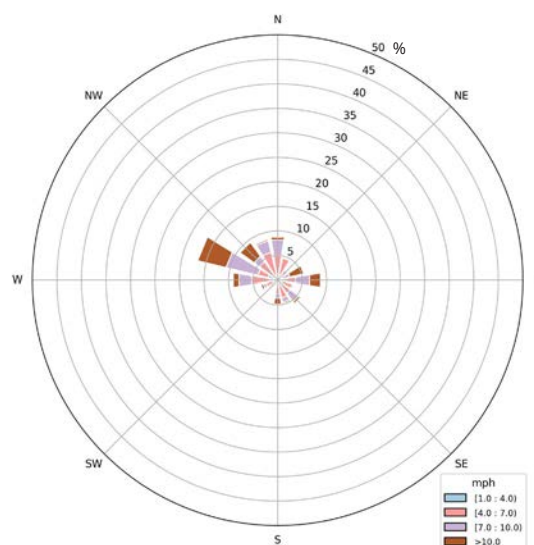
Table 1: Maximum wind speed frequency (greater than 30mph)

MEAN WIND & WINDROSE

NORTHERN REGION

- ❖ The mean wind speed and direction of Hanimaadhoo station is 6 knots (7 mph) from West north west, which is similar to the December 2021 (5knots or 6mph).

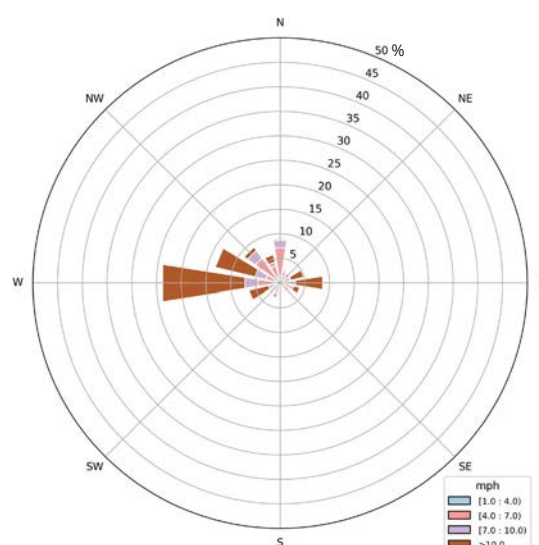
Figure 5: Wind rose diagram for the month of December 2022, Hanimaadhoo met station.



CENTRAL REGION

- ❖ The mean wind speed and direction of Hulhule' station is 9 knots (10 mph) from West, which is slightly less than the December 2021 average of 10 knots (12 mph).

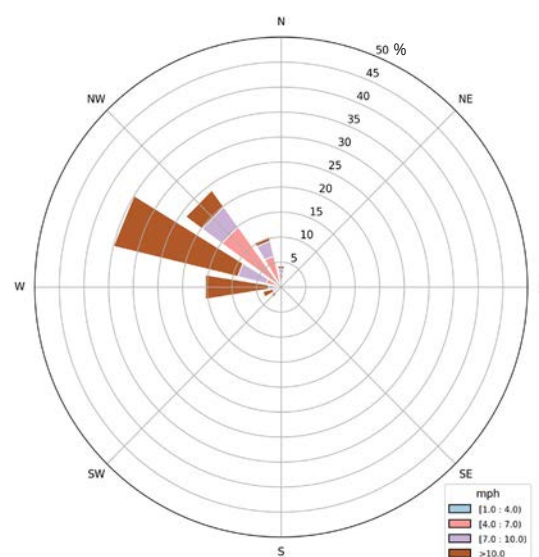
Figure 6: Wind rose diagram for the month of December 2022, Hulhule' met station.



SOUTHERN REGION

- ❖ The mean wind speed and direction of Gan station is 9 knots (10 mph) from West north west, which is slightly higher than the December 2021 average of 6 knots (7 mph).

Figure 7: Wind rose diagram for the month of December 2022, Gan met station.



DESCRIPTION & TERMINOLOGIES

In this report, the climate information of Maldives is divided into three regions, North, Central and South. The information presented as North is obtained from the data collected from HDh Hanimaadhoo meteorological station (6.748326, 73.169380). Information presented as Central is the data collected in Hulhule' meteorological station (4.192767, 73.5269378) and the south represents the data collected from S Gan meteorological station (-0.6903831, 73.149961).

UNITS OF MEASUREMENTS

Except where noted, temperature is given in Degrees Celsius, Rainfall is given in millimeters (mm), Wind is given in miles per hour (mph) and Sunshine is given in hours.

OBSERVATION TIMES

- ❖ Maximum temperatures are for the 24 hours from 17:00 local time to 17:00 on the date mentioned.
- ❖ Minimum temperatures are for the 24 hours from 08:00 local time to 08:00 on the date mentioned.
- ❖ Daily Rainfall are for the 24 hours from 08:00 local time to 08:00 on the date mentioned.
- ❖ Maximum wind is in the 24 hours from 05:00 local time to 05:00 on the date mentioned.

CLIMATOLOGICAL VALUES

The climatological averages used in the visuals and tables are observations from 1991-2020.

HISTORICAL RECORDS

The historical records of each station given is from all the data collected from that station. The initial date of data collection is different from individual stations.

Front cover: Radiation fog formed near the runway of Hanimaadhoo Int. airport. (Photo: Hanimaadhoo Met Office | MMS)



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