

Climate Monitoring and Prediction for the Maldives – December 2017

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January 8, 2018

PACIFIC SEAS STATE December 19, 2017

In mid-December 2017, the tropical Pacific reflected La Niña conditions, with SSTs in the east-central tropical Pacific in the range of weak to moderate La Niña and all atmosphere variables showing patterns suggestive of La Niña conditions. The collection of latest ENSO prediction models indicates weak, but not far from threshold of moderate, La Niña as the most likely scenario for the Northern Hemisphere winter, lasting into spring. The official CPC/IRI outlook favors continuation of La Niña through middle or late spring. (Text Courtesy IRI)

INDIAN OCEAN STATE January 3, 2018

0.5 °C above average SST was observed around Maldives.

MJO INDEX

The MJO was significant in Phase 1 from 28-29 Dec and in Phase 2 from 30-Dec-7 Jan. Usually rainfall in Maldives is augmented in Phase 2.



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Highlights

Monitored: During December, the Northern and Central islands received below average rainfall and Southern islands received above average rainfall. The cumulative rainfall deficit over the last year compared to the average annual cumulative rainfalls since 2003 has been increased to 20% in the Northern and to 7% in the Central Islands. The Northern Islands have a deficit by 150 mm; and the central islands by 100 mm in December. Also, Southern islands have a surplus of 200 mm.

The sea surface temperature around Maldives is 0.5 °C above average.

Predictions: IMD GFS model predicts up to 40 mm of rainfall in the northern islands on the 12th and up to 10 mm in the northern and central islands during 7-9. El Nino prediction models suggest of ENSO-neutral conditions for the coming months. Long Range Weather prediction models simulations anticipate total rainfall up to 50 mm for the whole country next week.

Summary

CLIMATOLOGY

Monthly Climatology: In January, northern islands receive up to 50 mm of rain while central and southern islands receive up to 100 mm and 250 mm of rain respectively. Wind is north easterly. Usually in February, northern islands receive rainfall less than 50 mm while central islands receive up to 50 mm rain and southern islands receive up to 100 mm of rain. Wind is north easterly. In March, northern and central islands receive rainfall up to 50 mm while southern islands receive up to 100 mm of rain. Wind is north easterly.

MONITORING

Weekly Rainfall Monitoring:

Date	Rainfall
20 th December 2017	No Rainfall.
21 st December 2017	Up to 20 mm in northern islands and up to 10 mm in central islands.
22 nd December 2017	No Rainfall.
23 rd December 2017	Up to 50 mm in central islands.
24 th December 2017	Up to 50 mm in central islands and up to 20 mm in southern islands.
25 th December 2017	Up to 50 mm in southern islands.
26 th – 27 th December 2017	Up to 20 mm in southern islands.
28 th – 29 th December 2017	Up to 50 mm in central islands and up to 20 mm in southern islands.
30 th December 2017	Up to 120 mm in southern islands and up to 10 mm in central islands. Up
31 st December 2017	Up to 50 mm in southern islands and up to 30 mm in central islands.

Monthly and Seasonal Rainfall Monitoring: In December, northern islands received up to 150 mm below average rainfall; and central islands up to 100 mm. Southern islands received up to 200 mm above average rainfall. The northern and central islands received up to 200 mm of total rainfall; and southern islands up to 400 mm during this period.

PREDICTIONS

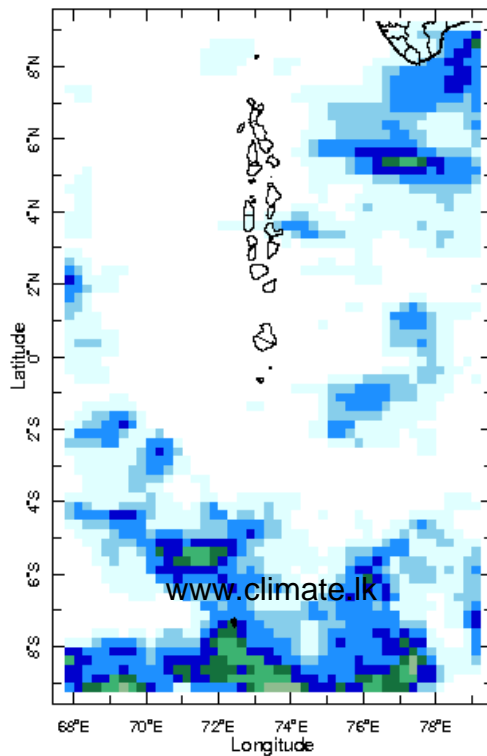
Weekly Rainfall Forecast: According to IMD GFS model up to 10 mm of rain is expected on January 11th and up to 40 mm on the 12th in the northern islands. Up to 10 mm of rainfall is expected in northern and central islands during January 13-15.

Inside this Issue

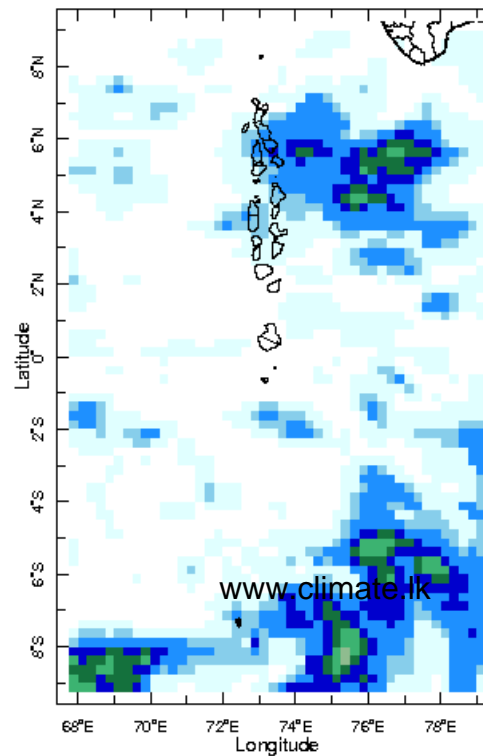
1. Rainfall Monitoring
 - a. Daily Satellite derived Rainfall Estimates
 - b. Monthly Rainfall derived from Satellite Rainfall Estimate
 - c. Monthly and Seasonal Monitoring
2. Ocean Surface Monitoring
3. Rainfall Predictions
 - a. Weekly Predictions from NOAA/NCEP
 - b. Seasonal Predictions from IRI¹

Daily Rainfall Monitoring

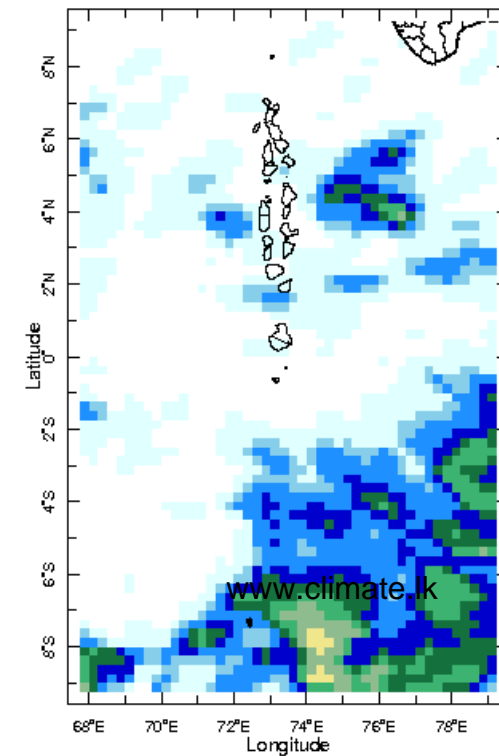
The following figures show the observed rainfall in the last 15 days in Maldives.



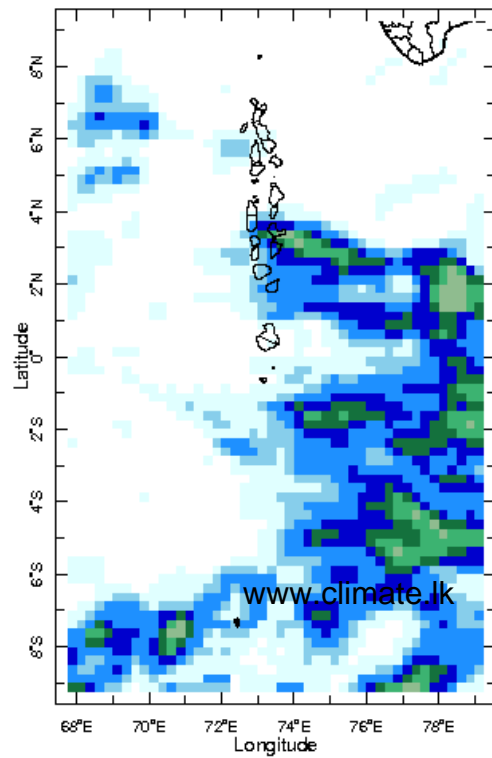
20 Dec 2017



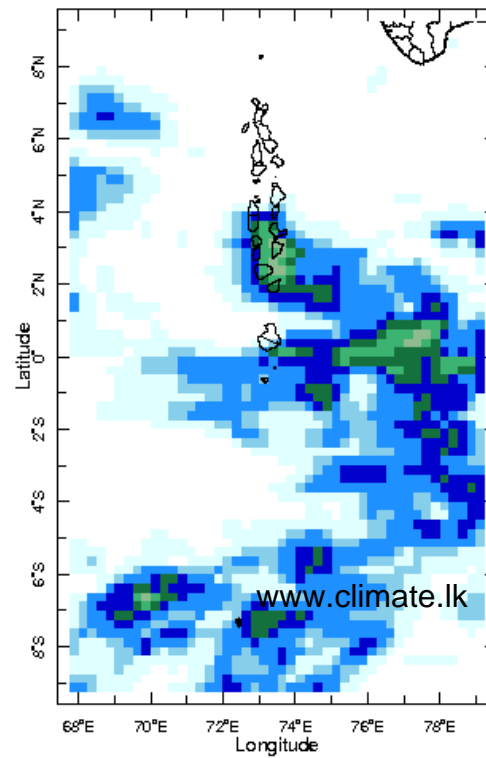
21 Dec 2017



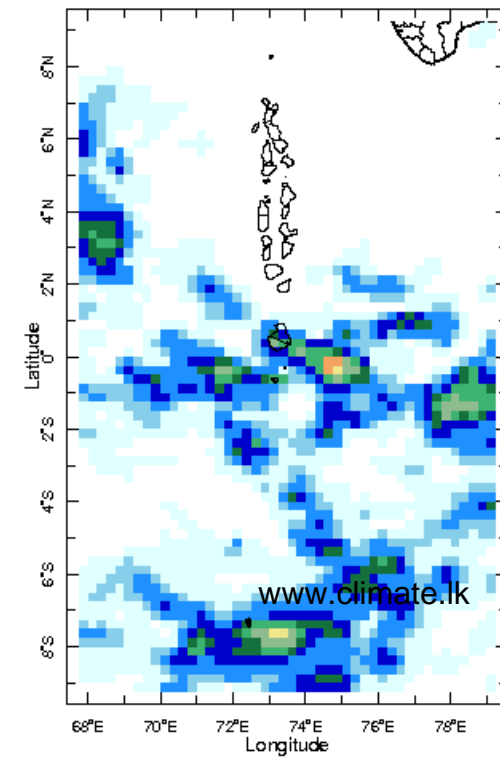
22 Dec 2017



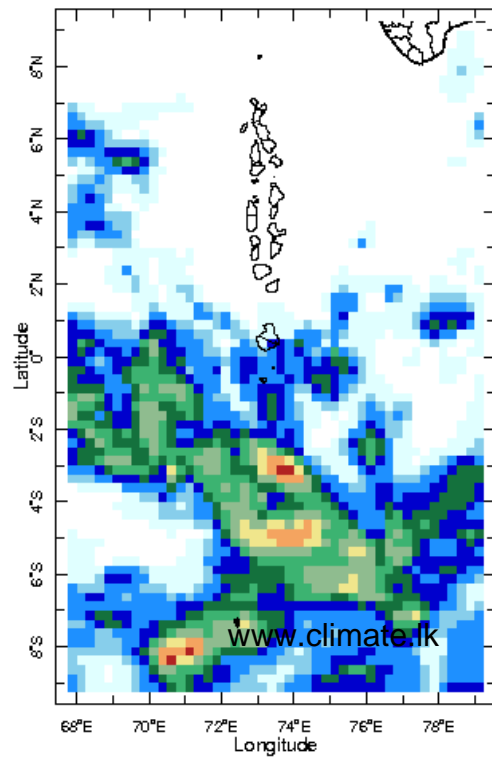
23 Dec 2017



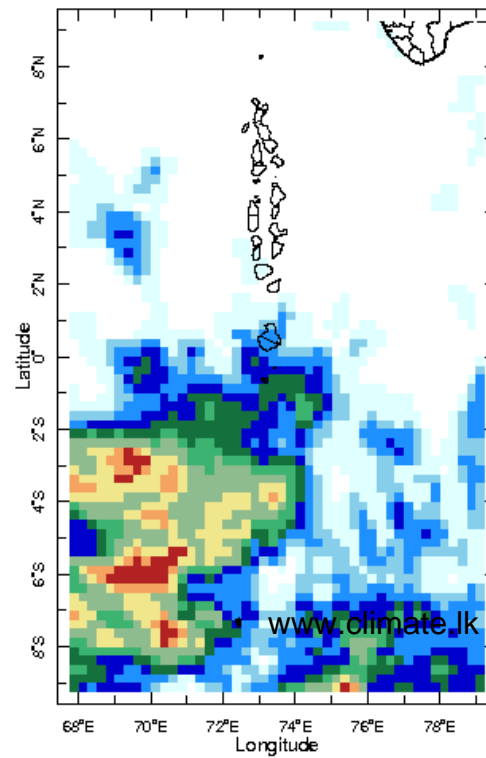
24 Dec 2017



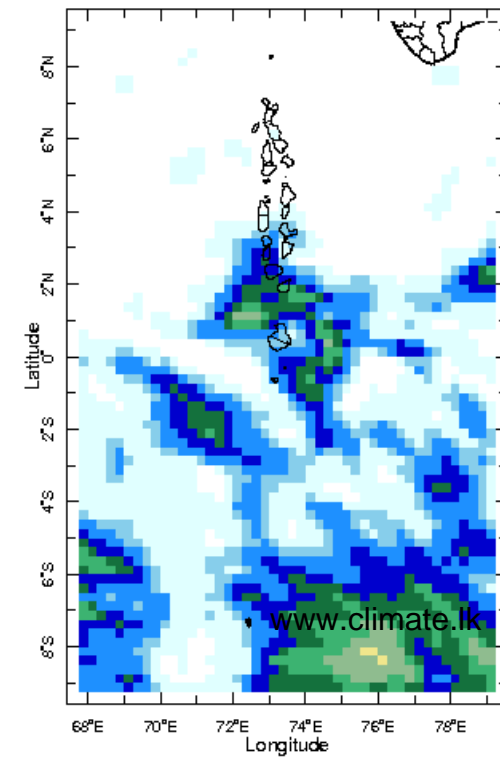
25 Dec 2017



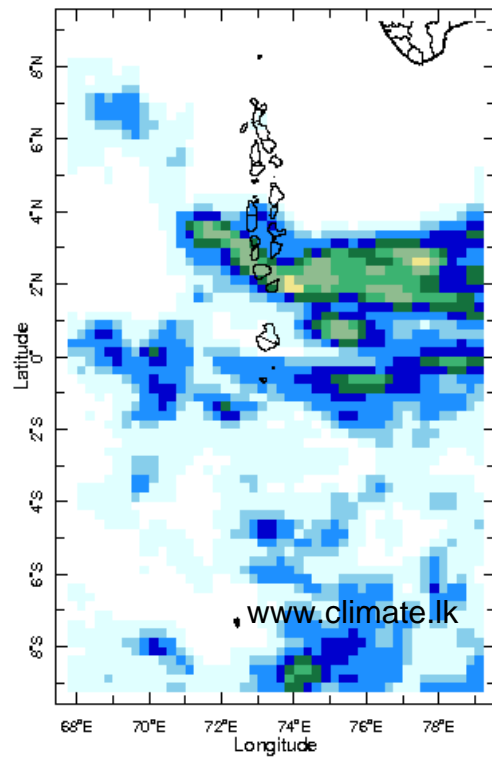
26 Dec 2017



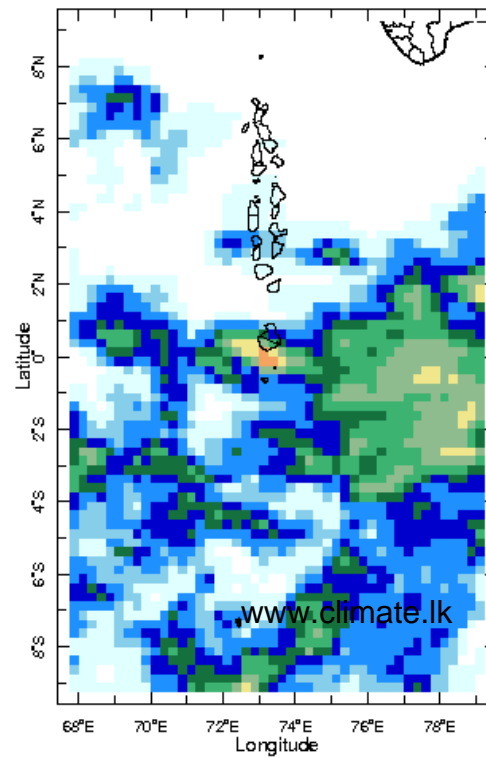
27 Dec 2017



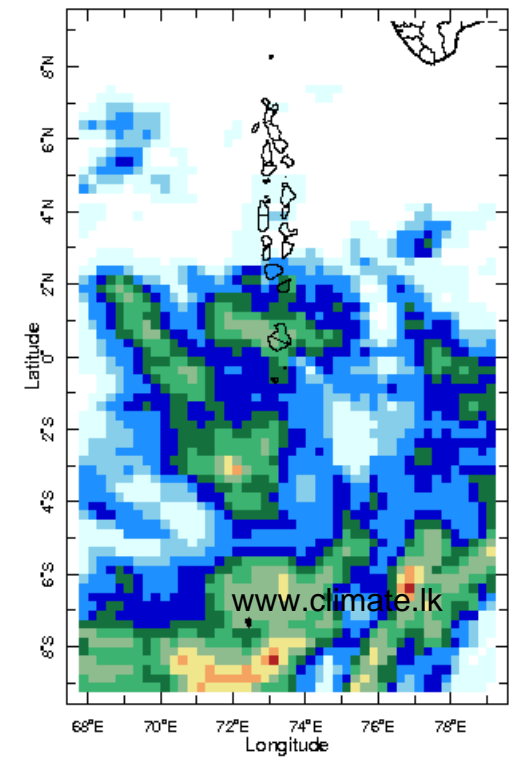
28 Dec 2017



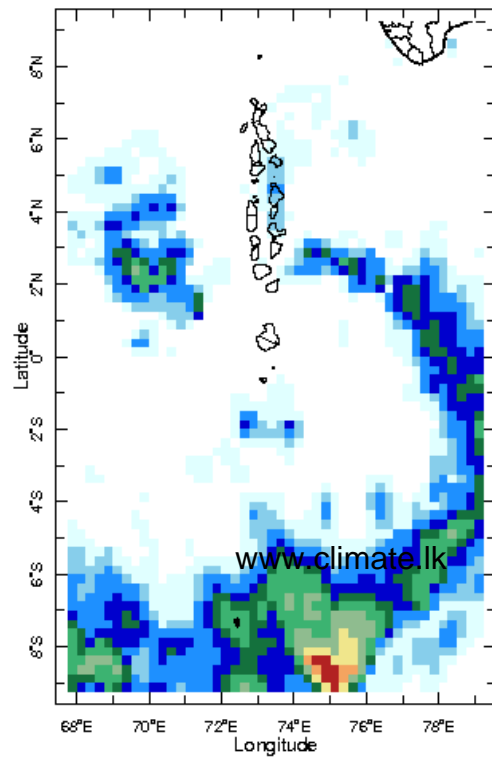
29 Dec 2017



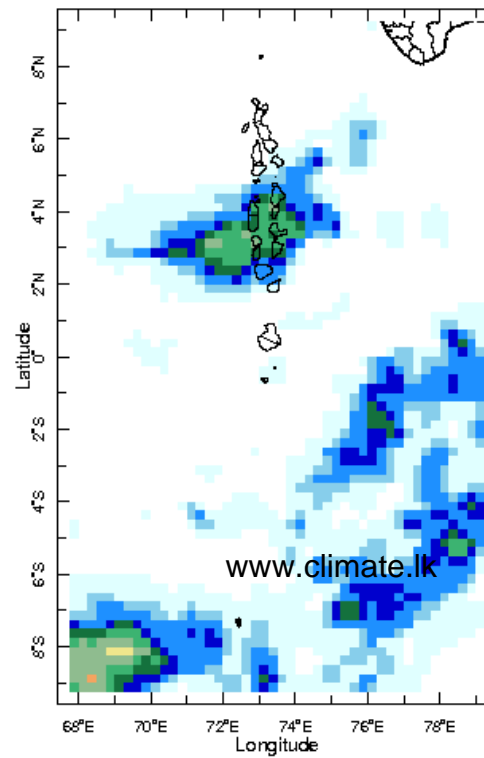
30 Dec 2017



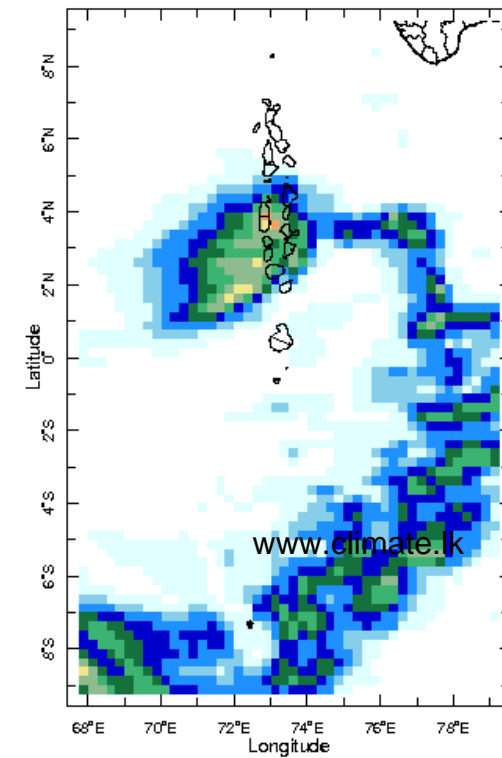
31 Dec 2017



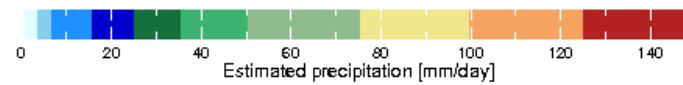
1 Jan 2018



2 Jan 2018

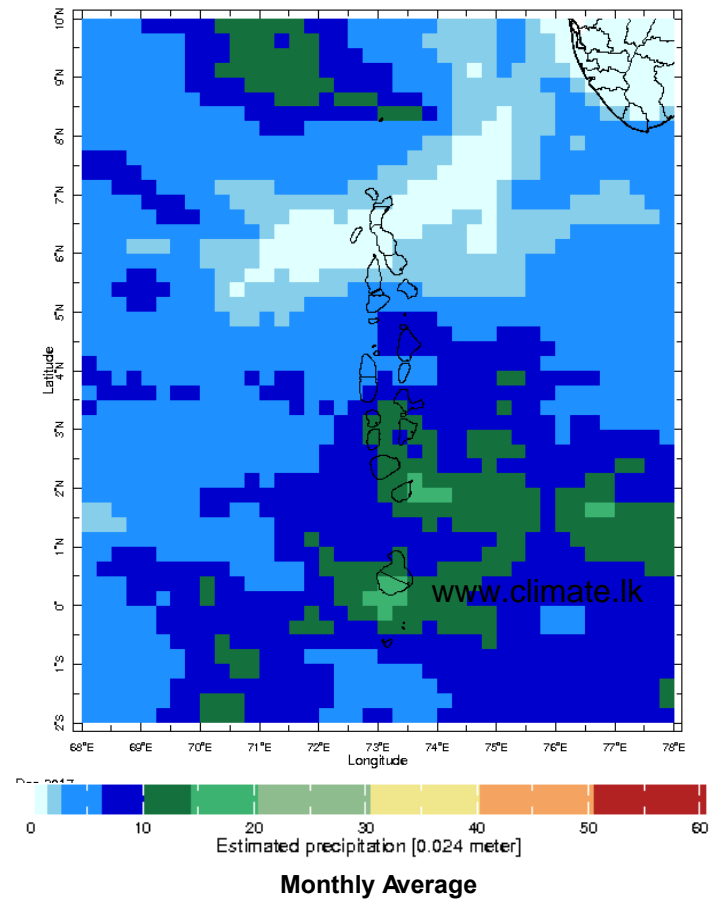


3 Jan 2018



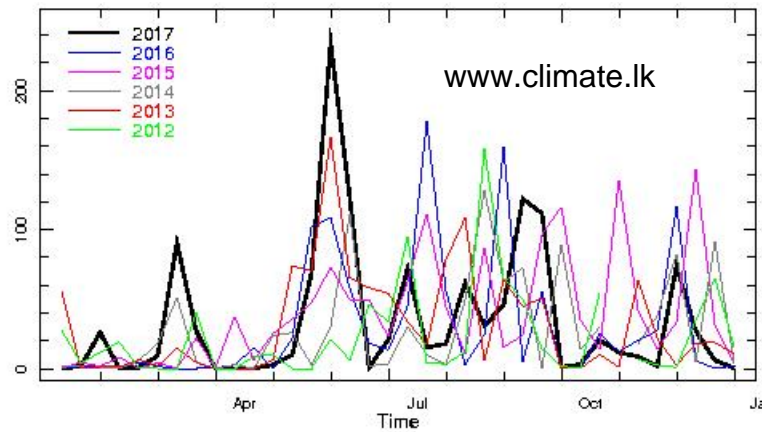
Monthly Rainfall Monitoring

The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places with above average rainfall. Darker shades show higher magnitudes in rainfall



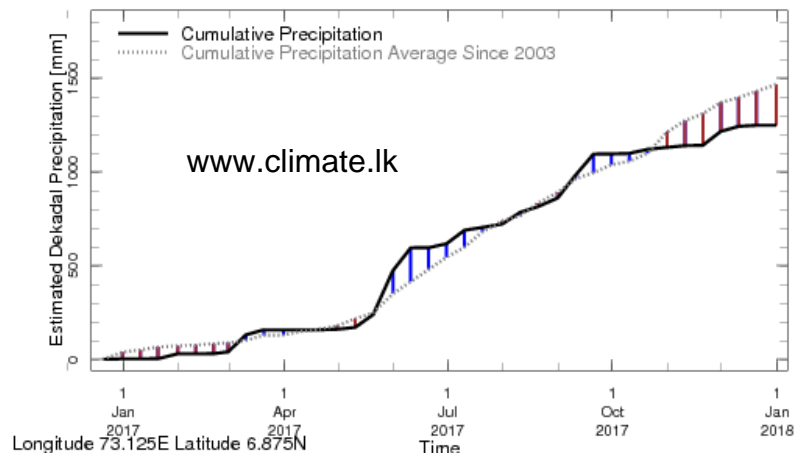
Monthly and Seasonal Monitoring

Northern Maldives:

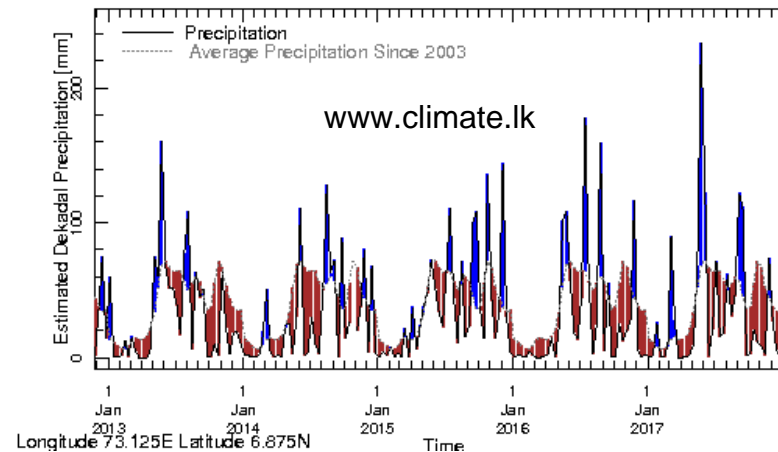


Longitude 73.125E Latitude 6.875N

Rainfall in the current year (black) compared to rainfall in previous 5 years

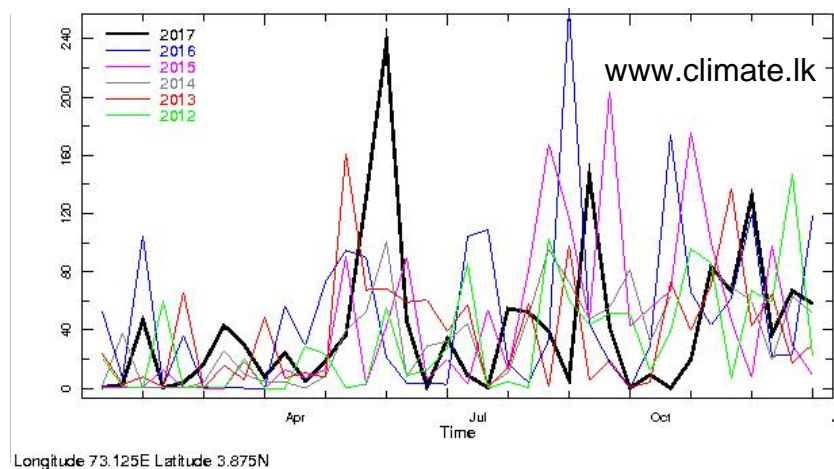


Rainfall of past 365 days (black) compared to average rainfall since 2003.

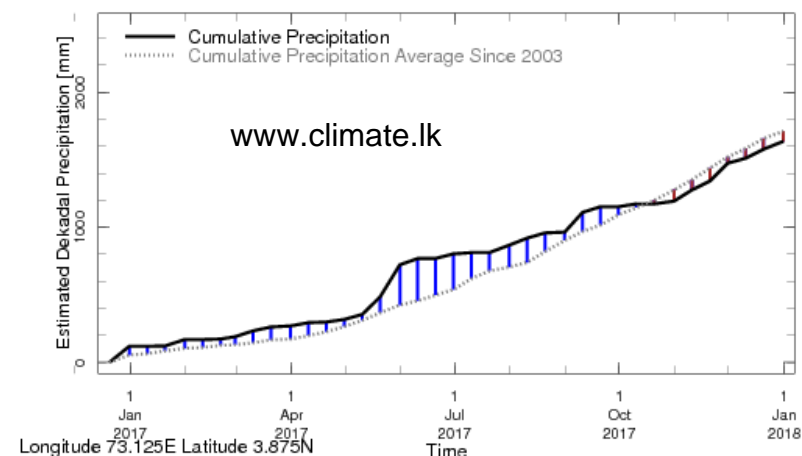


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

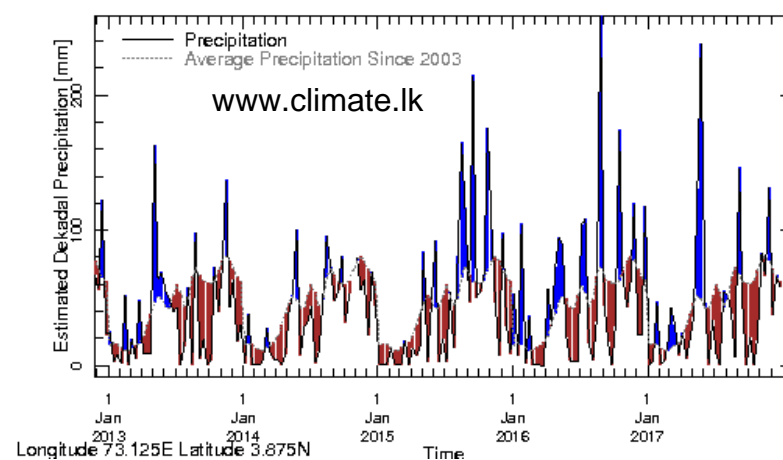
Central Maldives:



Rainfall in the current year (black) compared to rainfall in previous 5 years

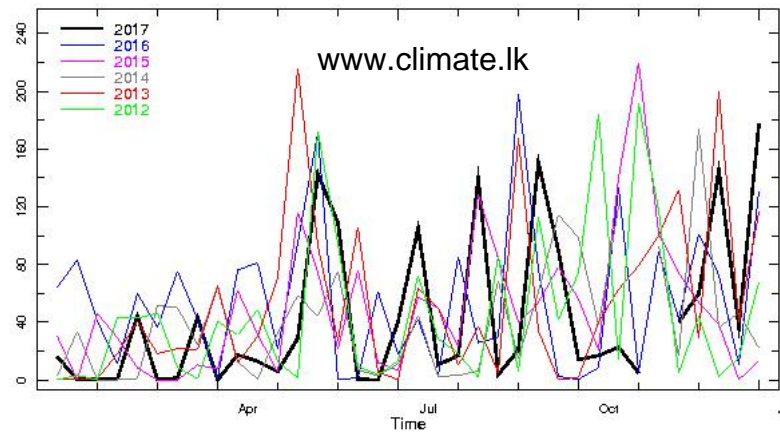


Rainfall of past 365 days (black) compared to average rainfall since 2003.

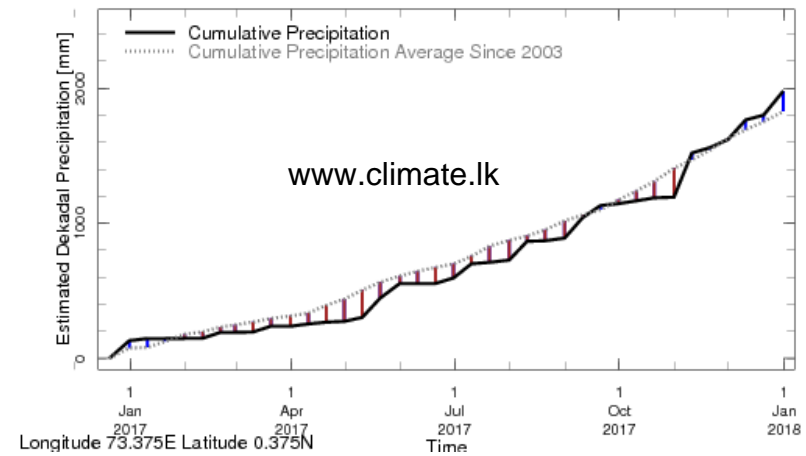


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

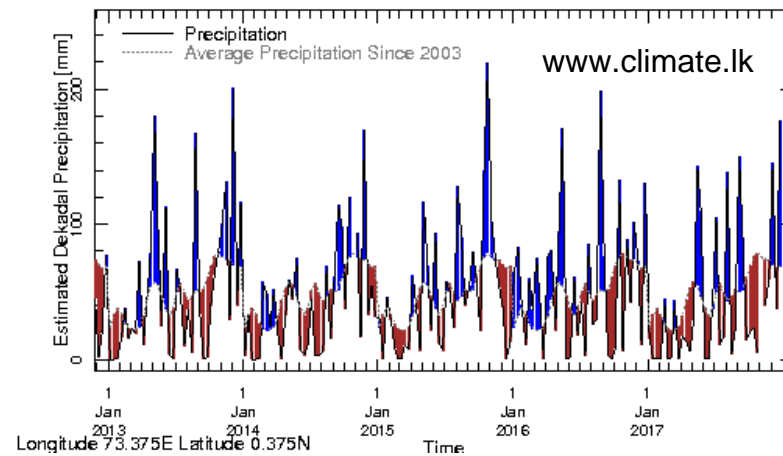
Southern Maldives:



Rainfall in the current year (black) compared to rainfall in previous 5 years

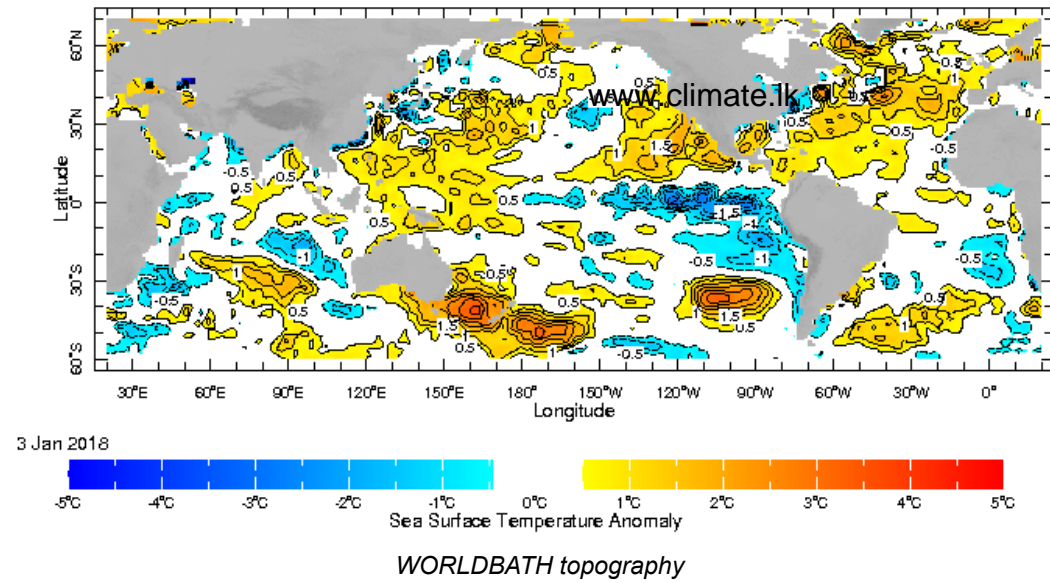


Rainfall of past 365 days (black) compared to average rainfall since 2003.



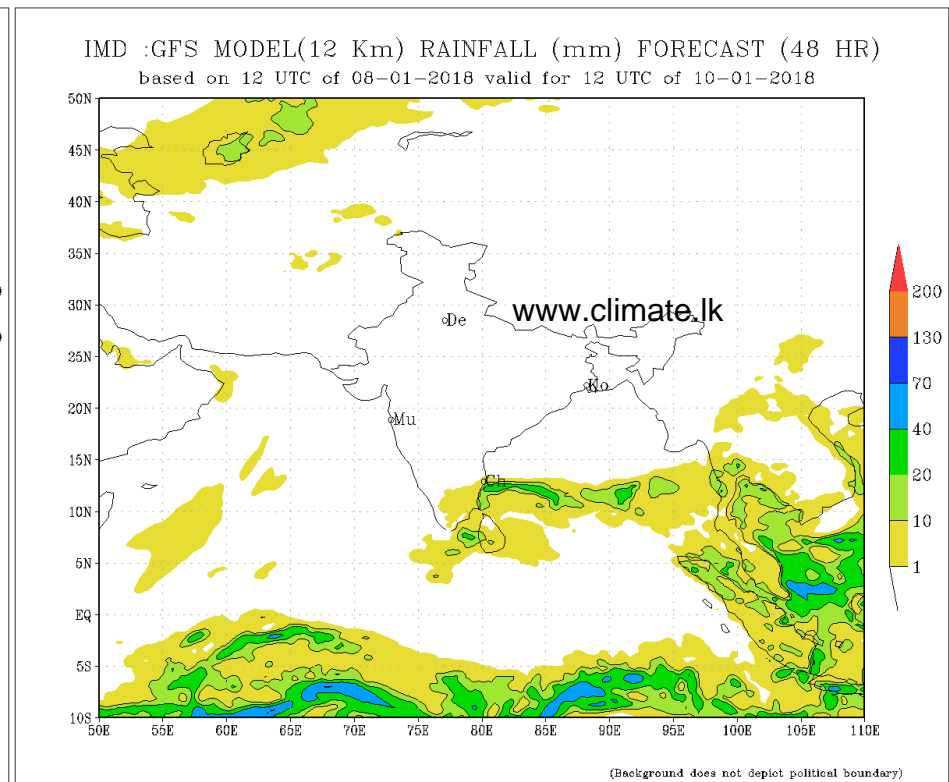
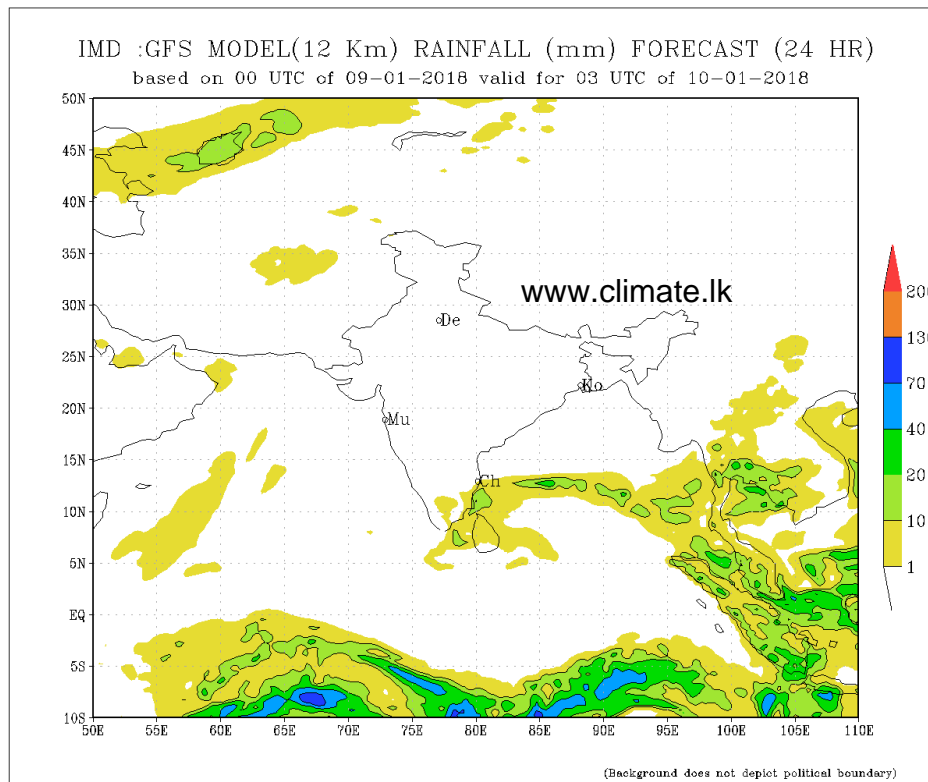
Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

Ocean Surface Monitoring

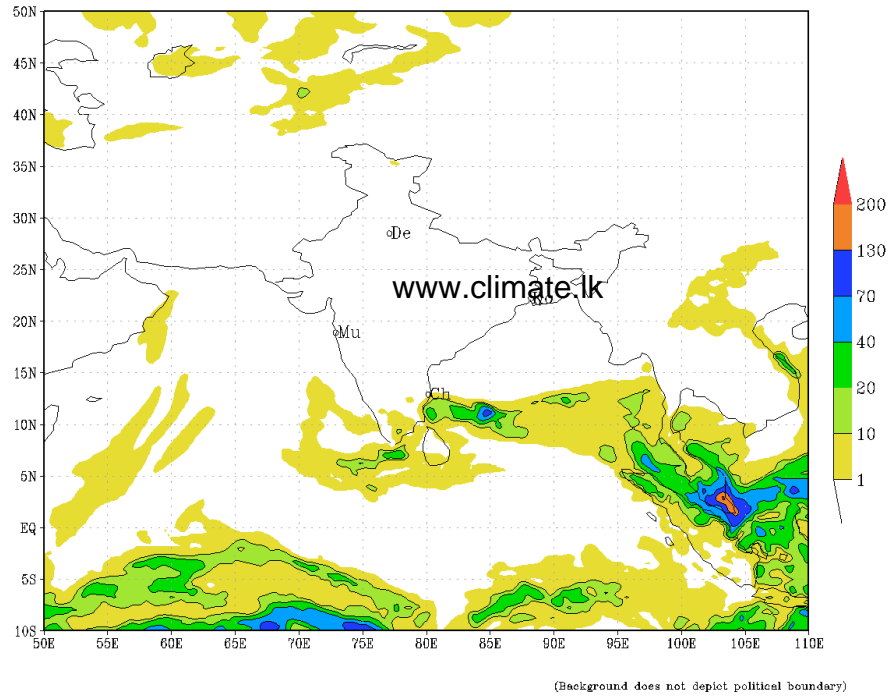


Daily Rainfall Forecast

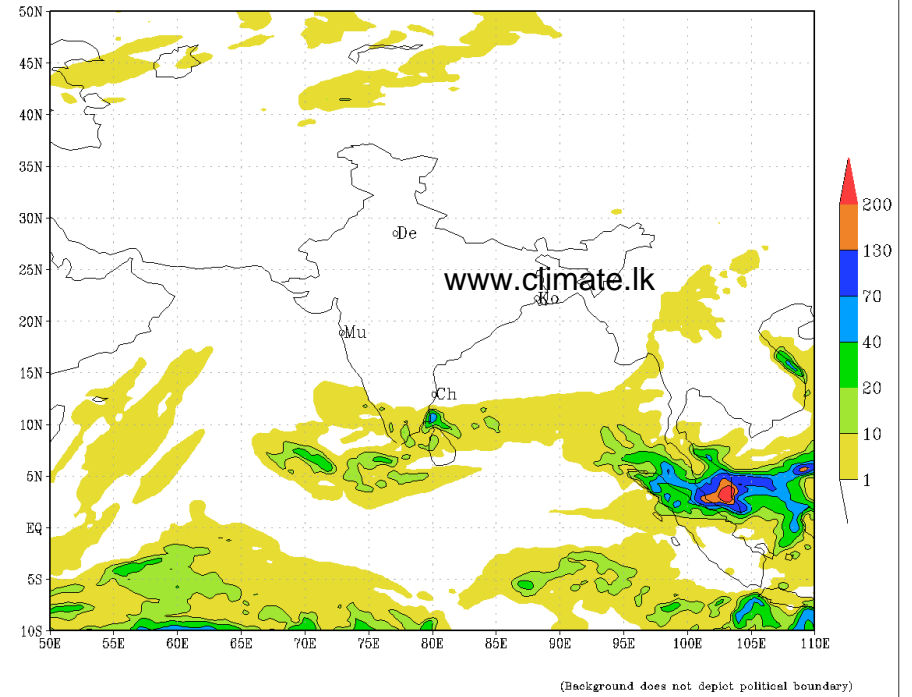
Daily Rainfall forecasts (up to 7 days ahead) from the IMD is provided in figures below. These predictions are from the GFS (T1534) model covering the entire south Asian region.



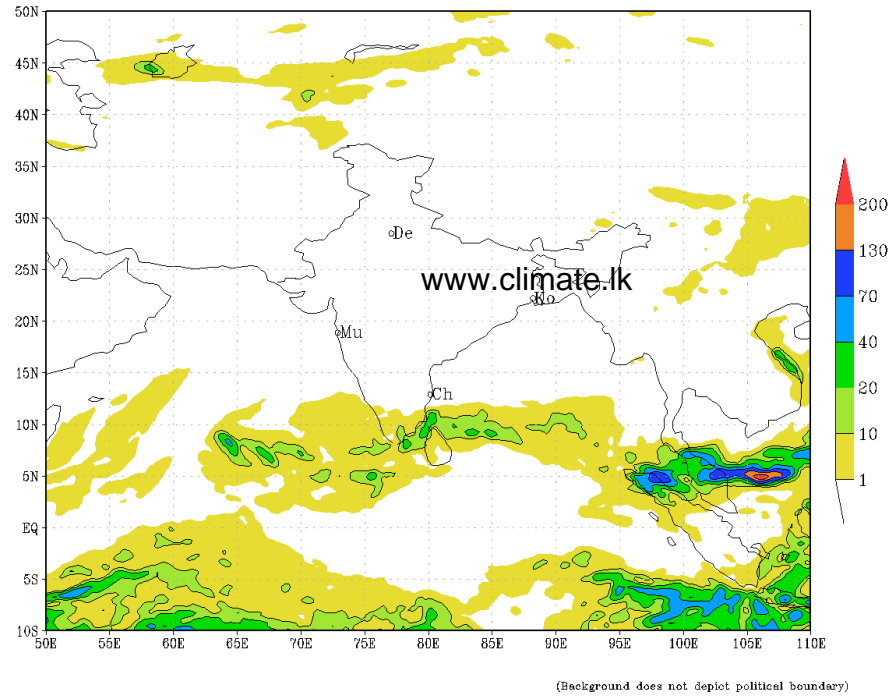
IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (72 HR)
based on 12 UTC of 08-01-2018 valid for 12 UTC of 11-01-2018



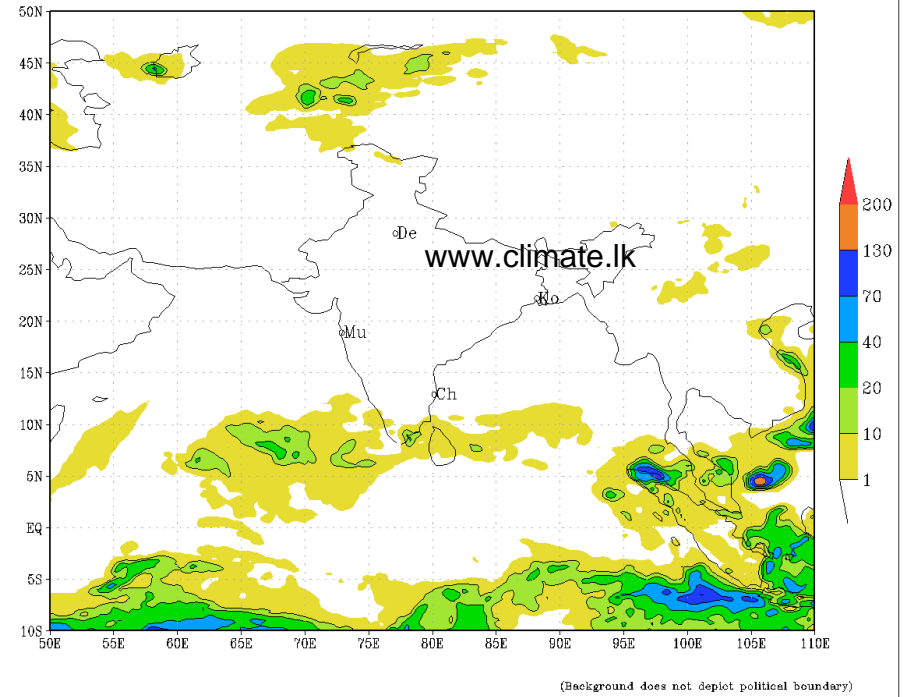
IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (96 HR)
based on 12 UTC of 08-01-2018 valid for 12 UTC of 12-01-2018



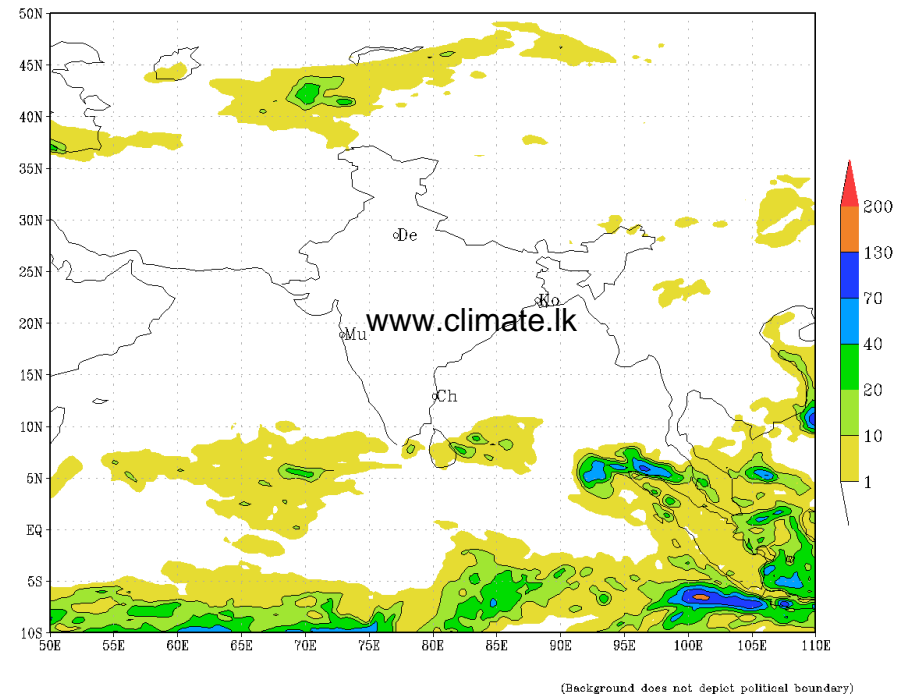
IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (120 HR)
based on 12 UTC of 08-01-2018 valid for 12 UTC of 13-01-2018



IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (144 HR)
based on 12 UTC of 08-01-2018 valid for 12 UTC of 14-01-2018



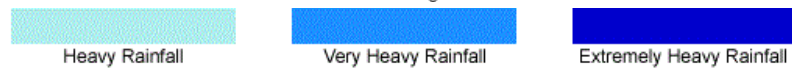
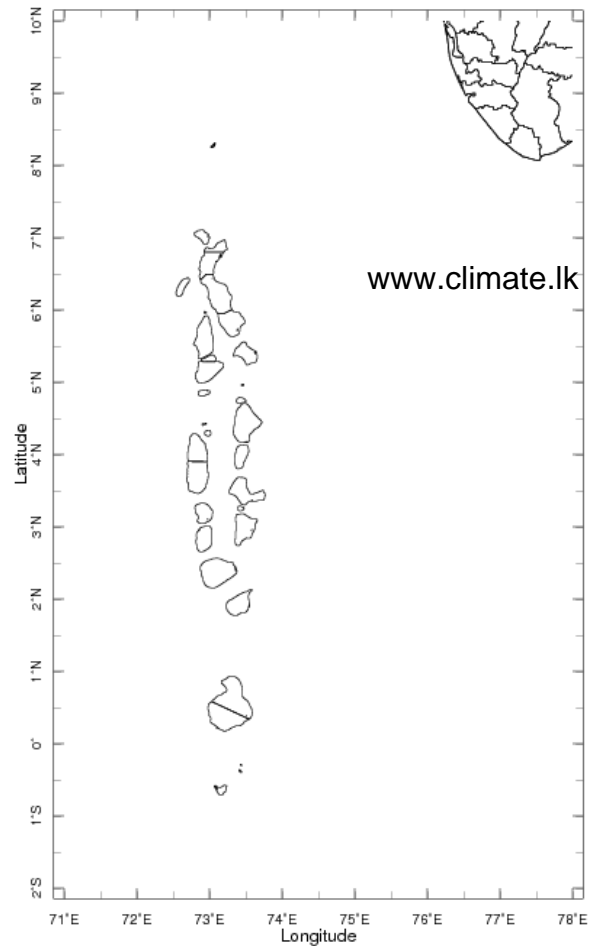
IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (168 HR)
based on 12 UTC of 08-01-2018 valid for 12 UTC of 15-01-2018



Weekly Rainfall Forecast

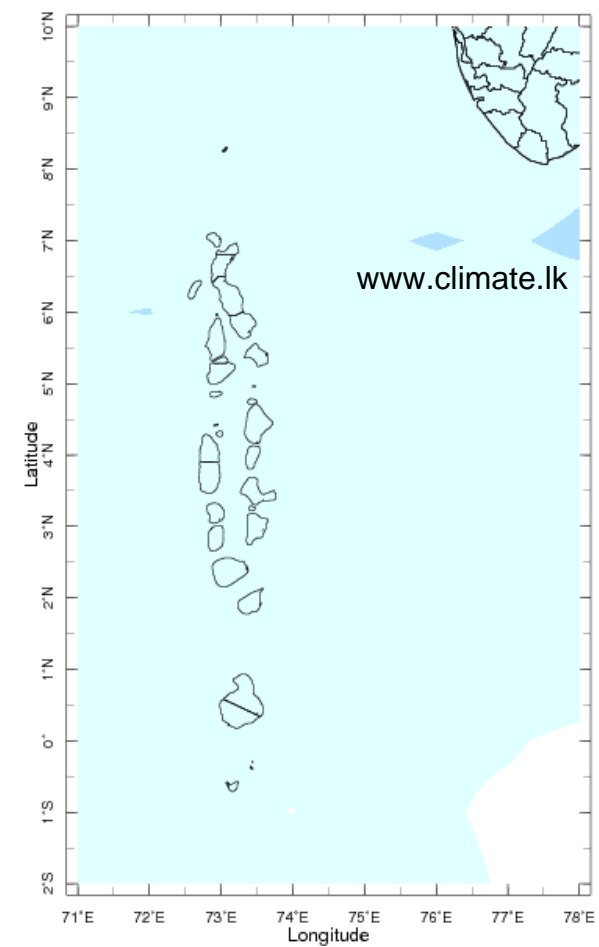
Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.

Forecast for 8-13 Jan 2018 Issued 0000 8 Jan 2018



Extreme Rainfall Forecast

Forecast for 8-13 Jan 2018 Issued 0000 8 Jan 2018



Total Six Day Precipitation Forecast