

Climate Monitoring and Prediction for the Maldives – January 2017

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February 9, 2017,

PACIFIC SEAS STATE Jan 19, 2017

During mid-January 2016 the tropical Pacific SST anomaly was near -0.5°C , the threshold for weak La Niña. Many of the atmospheric variables across the tropical Pacific also remain consistent with weak La Niña conditions, although some have become only weakly so. The upper and lower atmospheric winds have continued to be weakly suggestive of a strengthened Walker circulation, and the cloudiness and rainfall remain suggestive of La Niña conditions. The collection of ENSO prediction models indicates SSTs, now near the threshold of La Niña, is in the process of dissipating to neutral levels by February.

(Text Courtesy IRI)

INDIAN OCEAN STATE Jan 25, 2017

$\sim 0.5^{\circ}\text{C}$ below average SST was observed around southern Maldives.



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Highlights

Monitored: During January, southern islands received up to 150 mm below average rainfall while some of central islands received up to 120 mm below average rainfall. When the cumulative rainfall over the last 365 days is considered, the Northern Islands have a deficit by 400 mm compared to the average annual cumulative rainfall since 2003 of 1500 mm. During the last week of January, the rainfall in northern and central islands increased. The sea surface temperature around southern Maldives is nearly neutral to up to 0.5°C below the seasonal average.

Predictions: IRI seasonal prediction predicts above average rainfall for southern islands rainfall until April. El Nino prediction models suggest of weak La Niña conditions as the Pacific SST anomaly is close to -0.5°C . Long Range Weather prediction models simulations do not anticipate heavy rainfall in the next week.

Summary

CLIMATOLOGY

Monthly Climatology: 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. Usually 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. In April, Southern islands usually receive about 150 mm of rainfall. The wind direction in southern and central islands is westerly and in northern islands it's north-westerly.

MONITORING

Weekly Rainfall Monitoring:

Date	Rainfall
19 th -20 th Jan 2017	No rainfall.
21 st Jan 2017	Up to 15 mm in northern islands.
22 nd Jan 2017	Up to 60 mm in northern islands.
23 rd Jan 2017	Up to 5 mm in central islands.
24 th -25 th Jan 2017	No rainfall.
26 th Jan 2017	Up to 30 mm in central islands.
27 th Jan 2017	Up to 20 mm in central islands.
28 th Jan 2017	Up to 30 mm in central islands and up to 40 mm in central islands.
29 th -30 th Jan 2017	UP to 15 mm in central islands.
31 st Jan 2017	Up to 5 mm in southern islands.

Monthly and Seasonal Rainfall Monitoring: In January, central islands received around () 120 mm of rainfall below the climatological average and southern islands received ~ 150 mm rainfall below the climatological average. Central islands received up to ~ 150 mm of rainfall; and northern islands including southern Addu and Fuvahmulah atolls up to 90 mm during January.

PREDICTIONS

Weekly Rainfall Forecast: According to IMD GFS model up to 40 mm of rain is expected in southern islands on 12th of February. Up to 10 mm of rainfall is expected in central and southern islands on the 13th and 14th. On 15th, up to 20 mm of rain is expected in southern islands and up to 10 mm in northern and central islands.

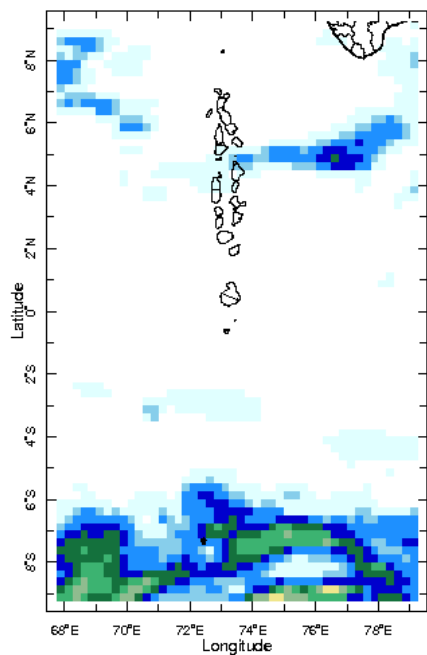
Seasonal Rainfall and Temperature Prediction: As per IRI Multi Model Probability Forecast for February to April, there is a 40% chance that the rainfall shall be above average in the central islands. The 3-month average temperature has a 50% likelihood to be in the above-normal tercile in northern and central islands and 80% likelihood for southern islands during these 3 months.

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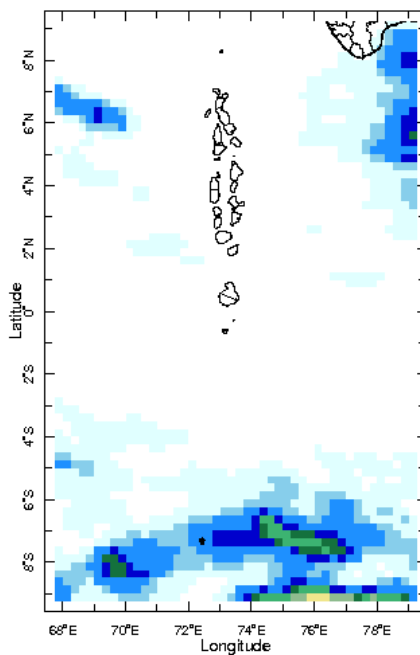
- Rainfall Monitoring
 - Daily Satellite derived Rainfall Estimates
 - Monthly Rainfall derived from Satellite Rainfall Estimate
 - Monthly and Seasonal Monitoring
- Ocean Surface Monitoring
- Rainfall Predictions
 - Weekly Predictions from NOAA/NCEP
 - Seasonal Predictions from IRI¹

Daily Rainfall Monitoring

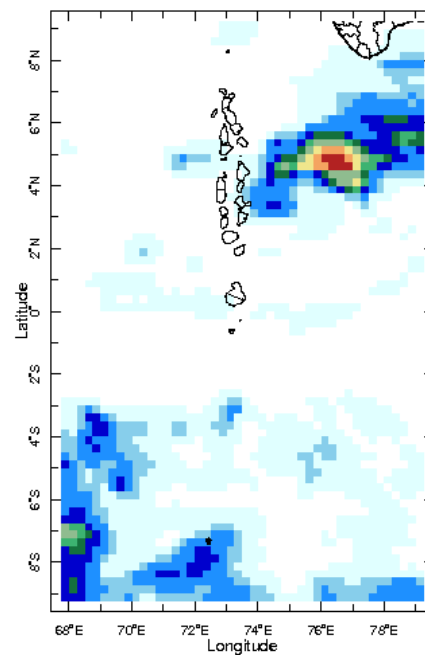
The following figures show the observed rainfall in the last 15 days in Maldives.



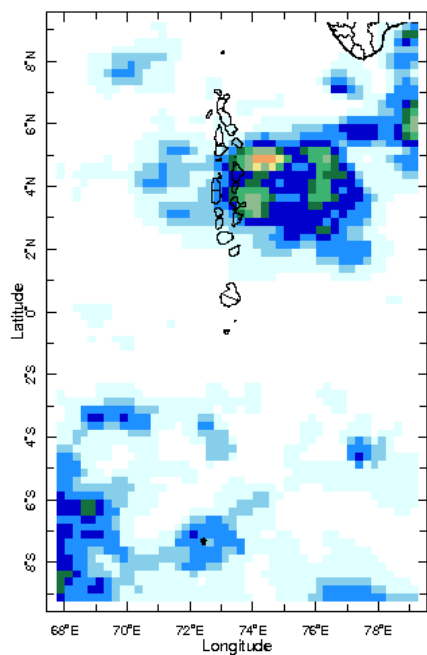
23 Jan 2017



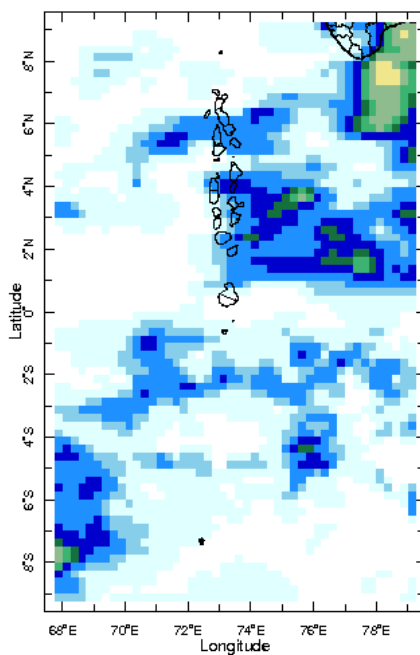
24 Jan 2017



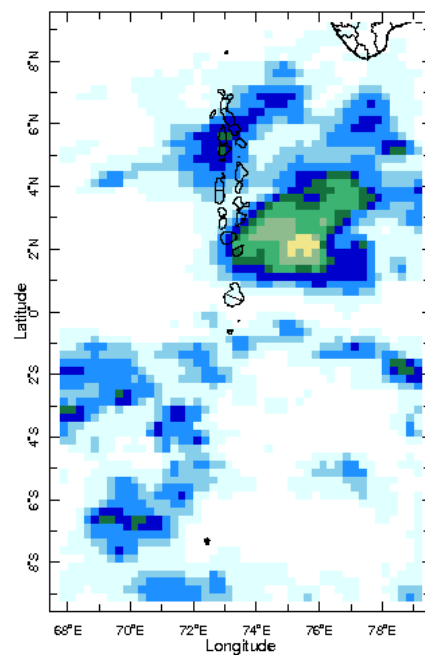
25 Jan 2017



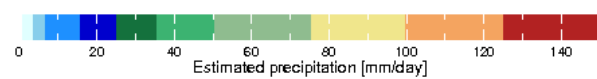
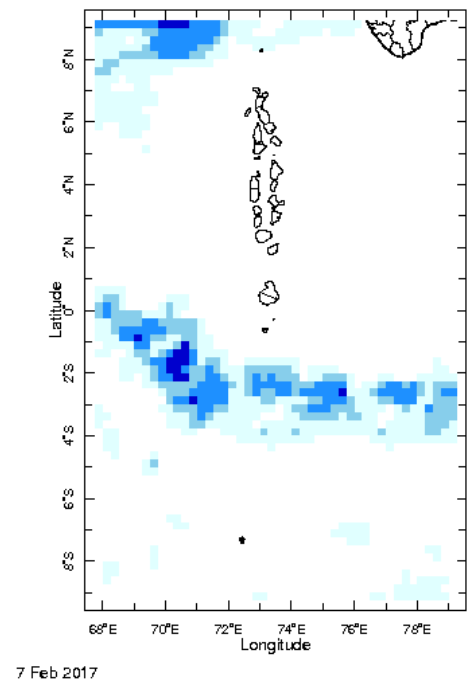
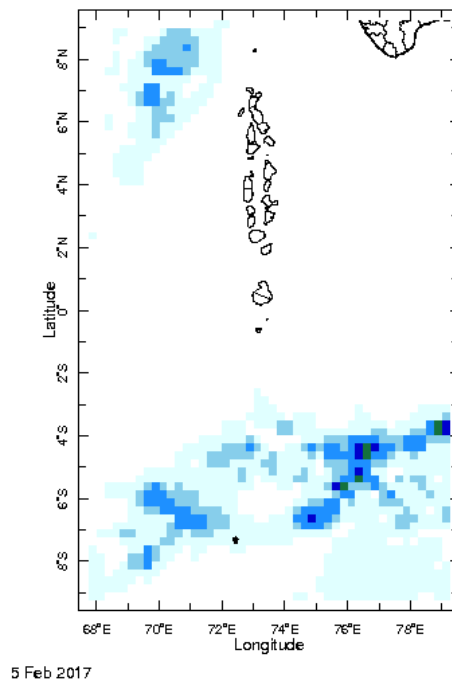
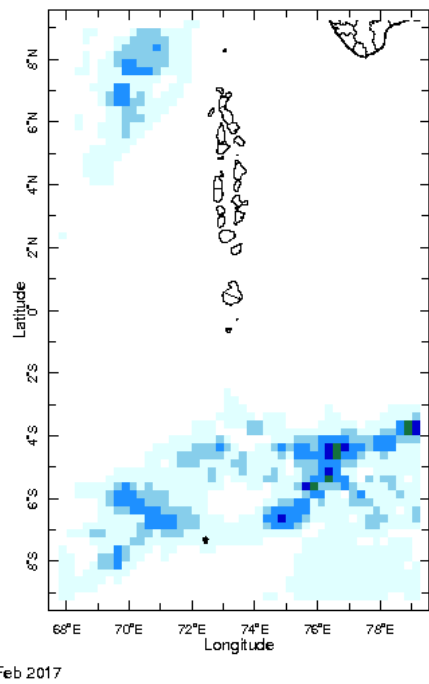
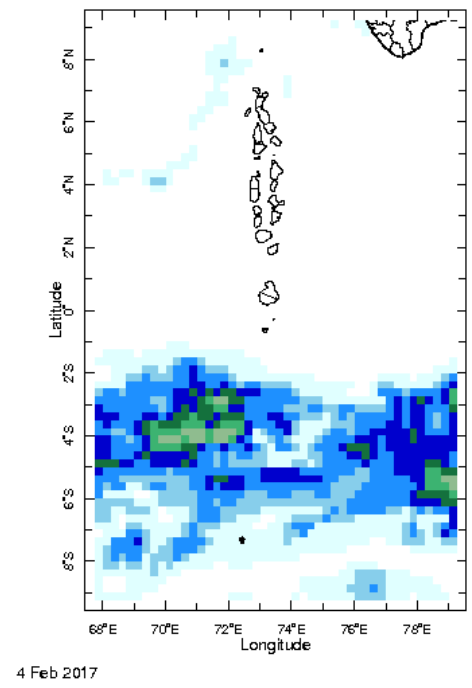
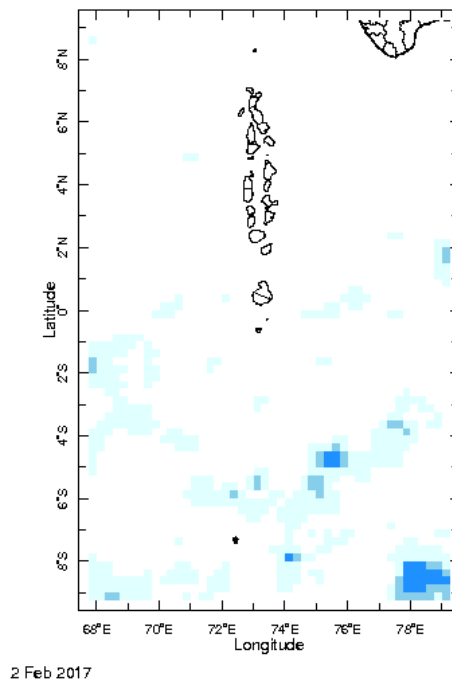
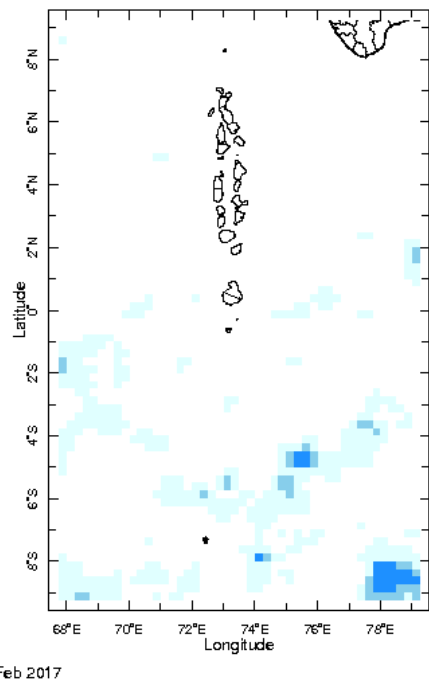
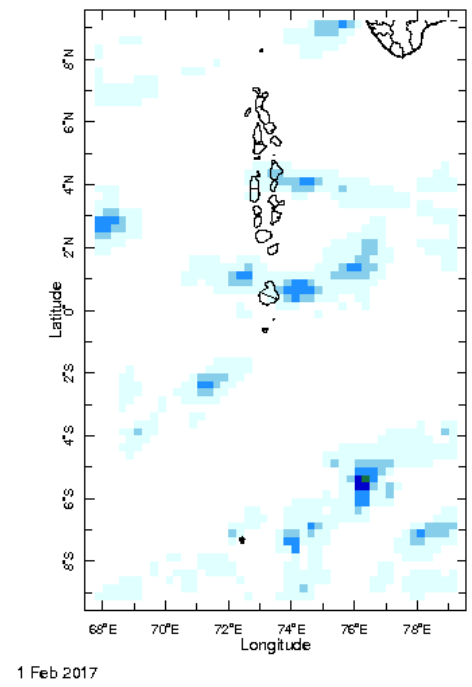
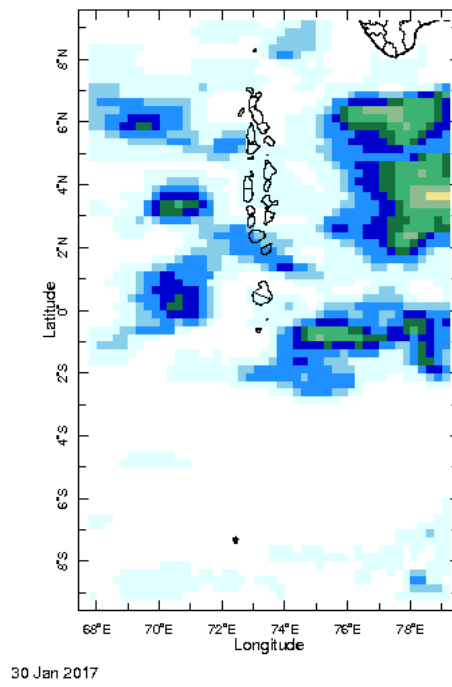
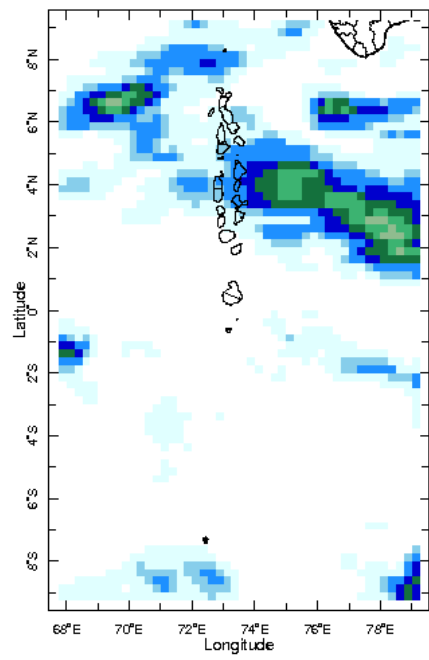
26 Jan 2017



27 Jan 2017

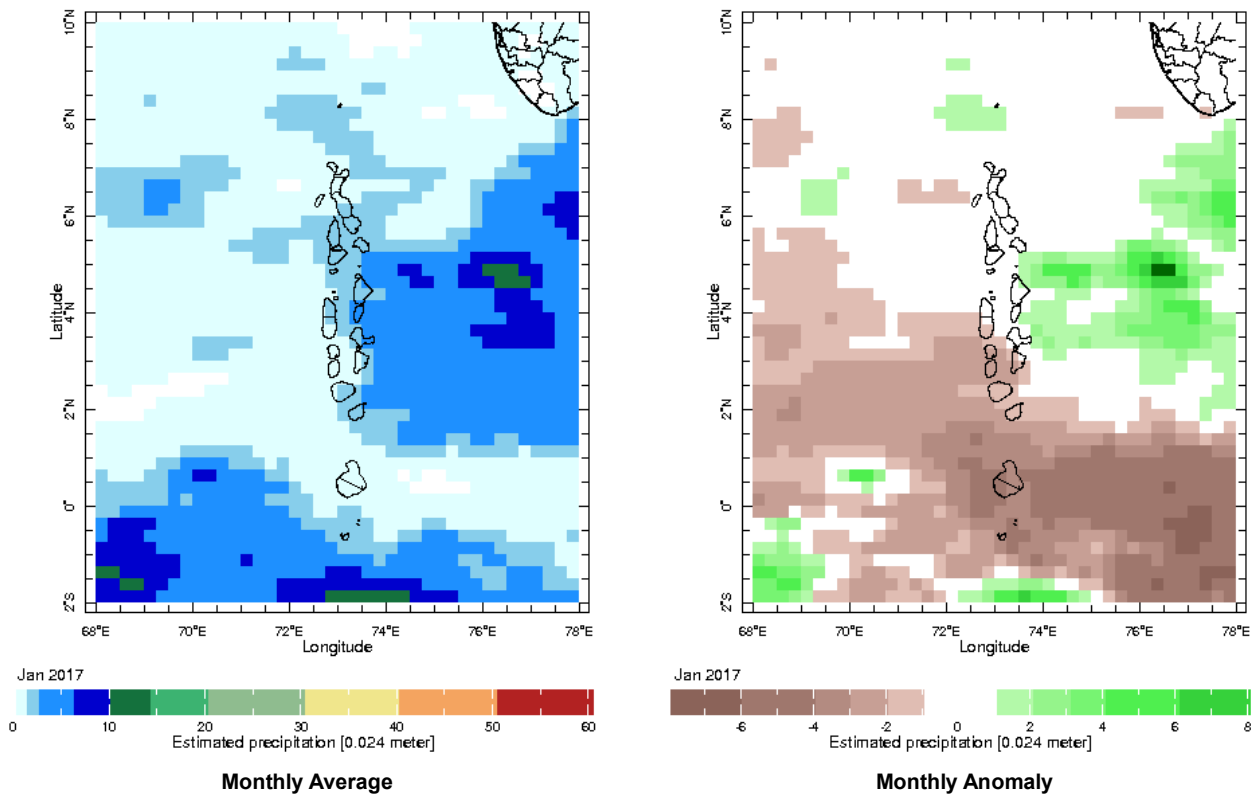


28 Jan 2017



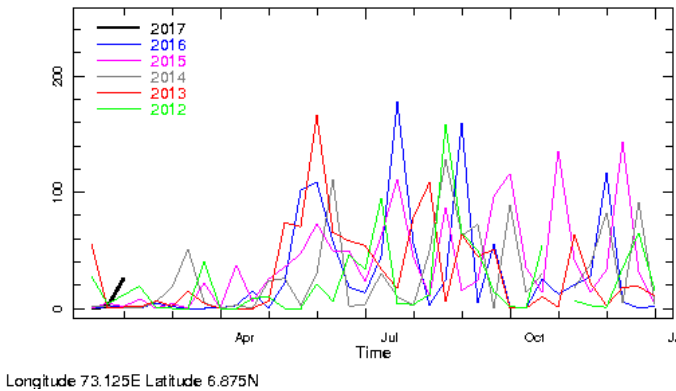
Monthly Rainfall Monitoring

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

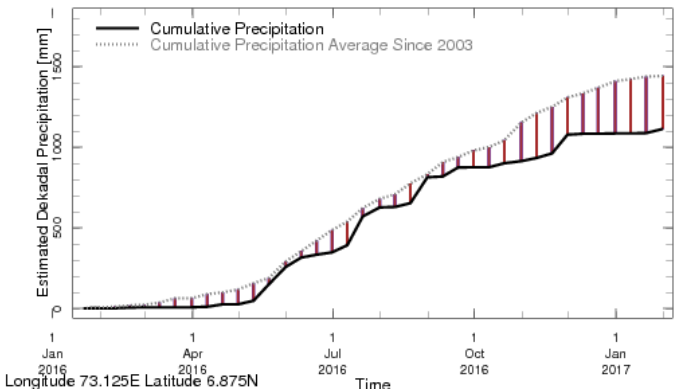


Monthly and Seasonal Monitoring

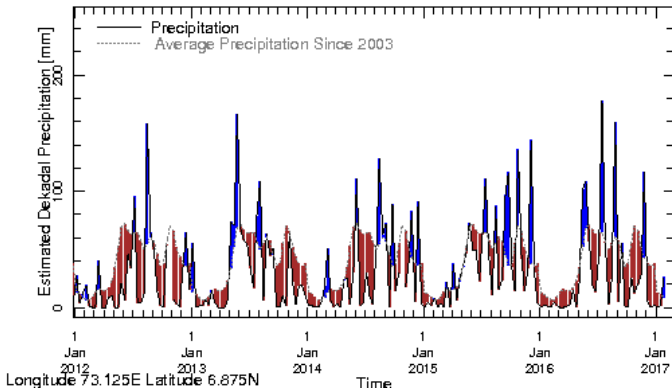
Northern Maldives:



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

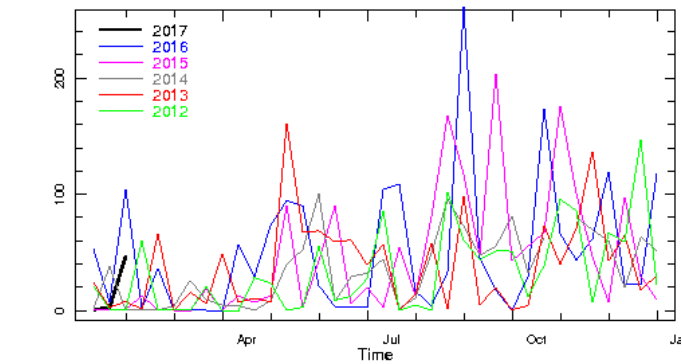


Rainfall of past 365 days (black) compared to average rainfall since 2003.

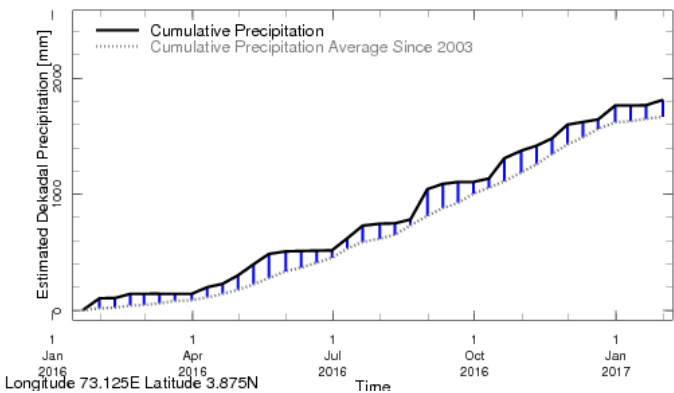


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

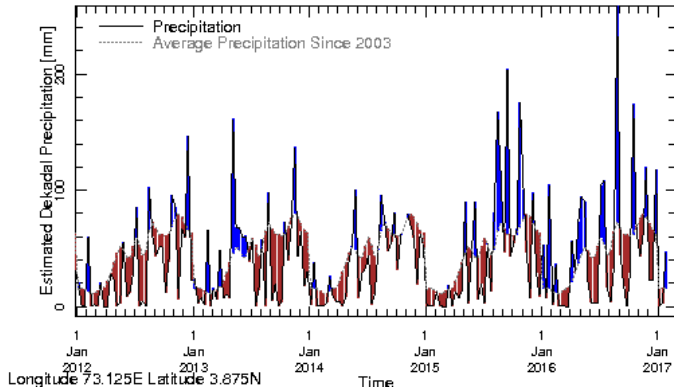
Central Maldives:



Longitude 73.125E Latitude 3.875N
Rainfall in the current year (black) compared to rainfall in previous 5 years

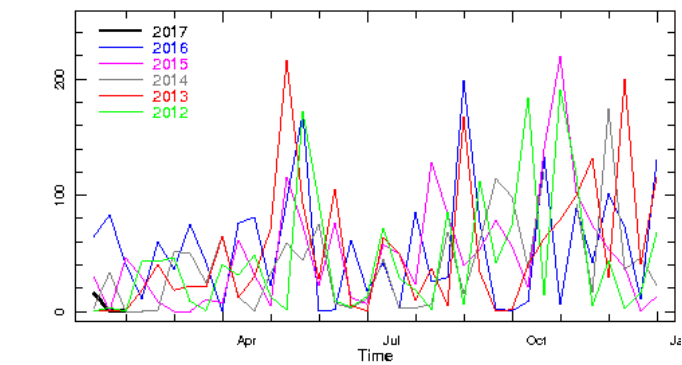


Rainfall of past 365 days (black) compared to average rainfall since 2003.

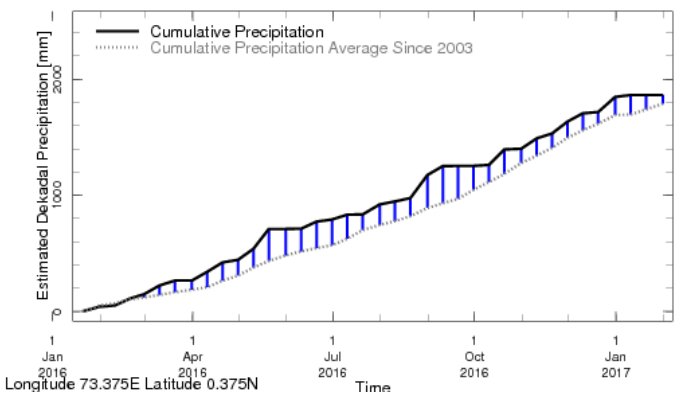


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

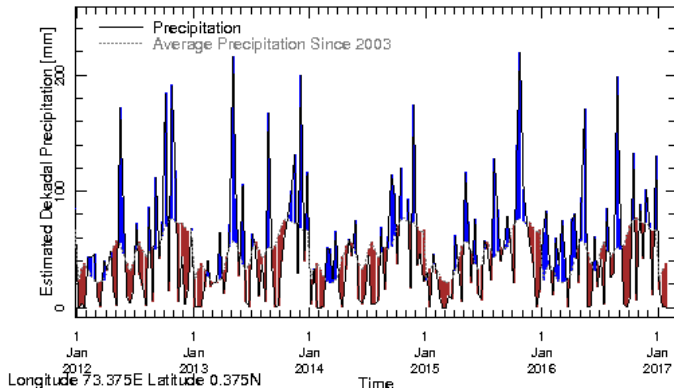
Southern Maldives:



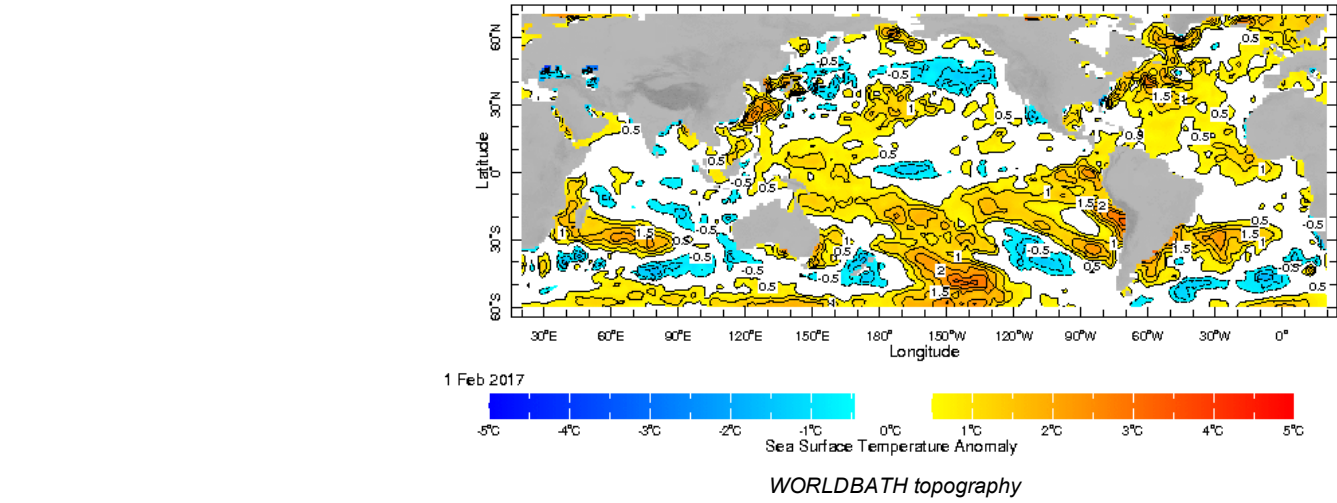
Longitude 73.375E Latitude 0.375N
Rainfall in the current year (black) compared to rainfall in previous 5 years



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

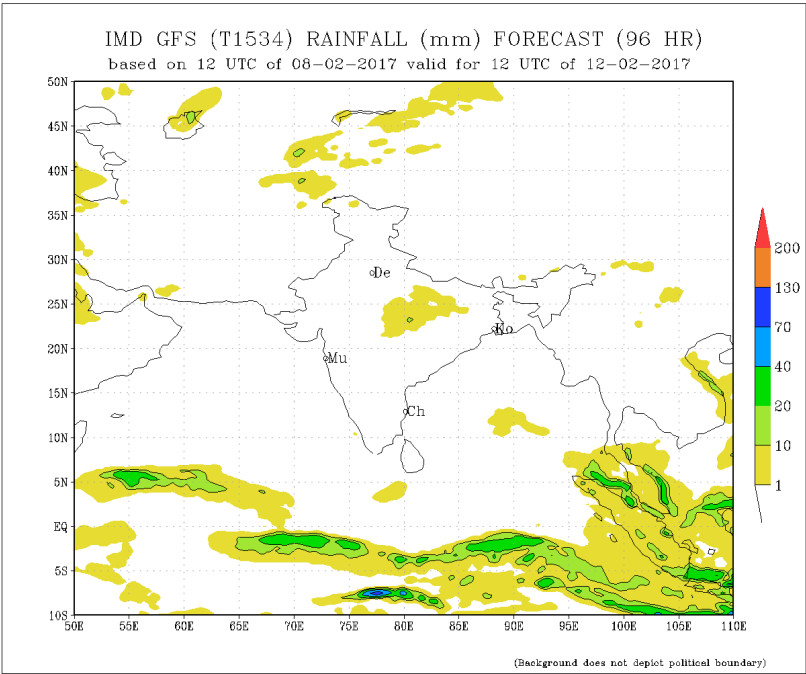
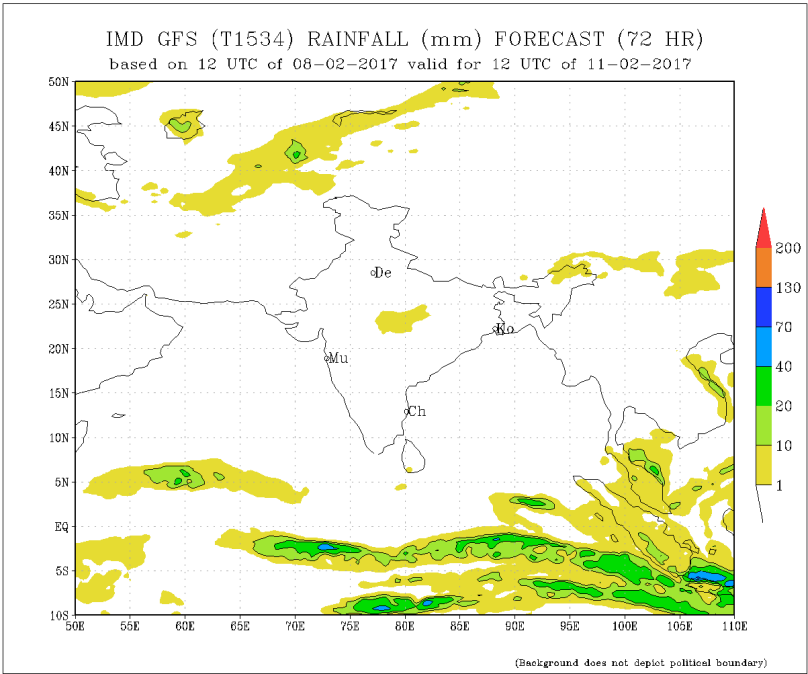
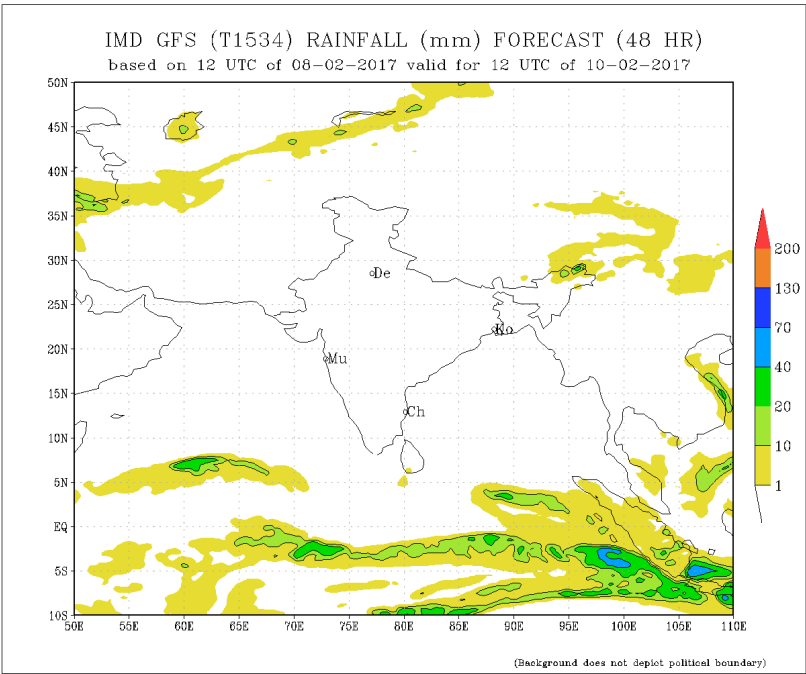
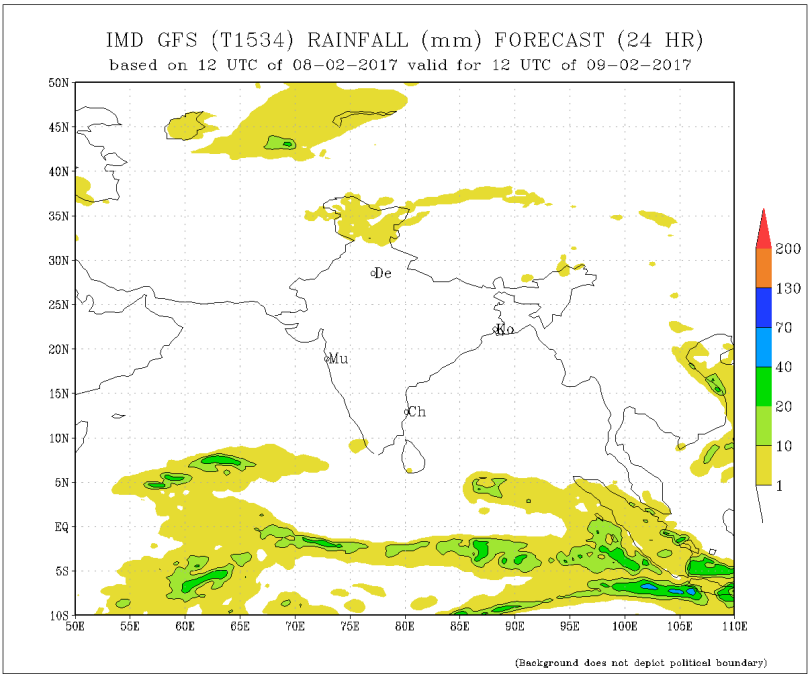


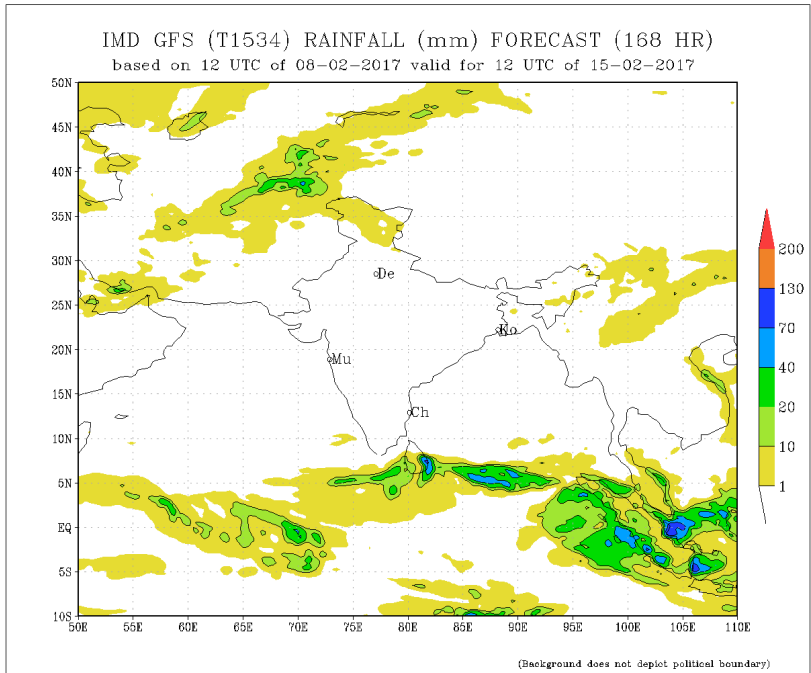
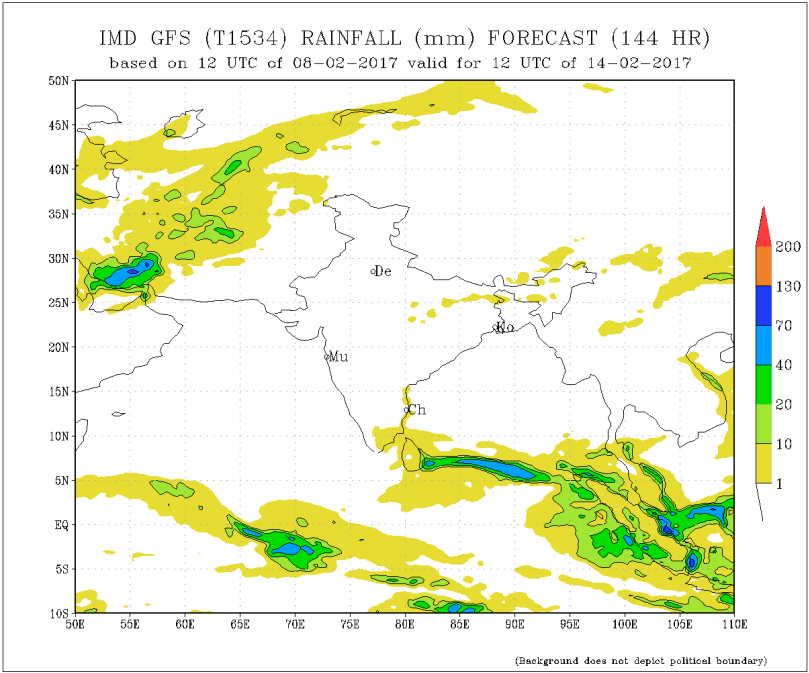
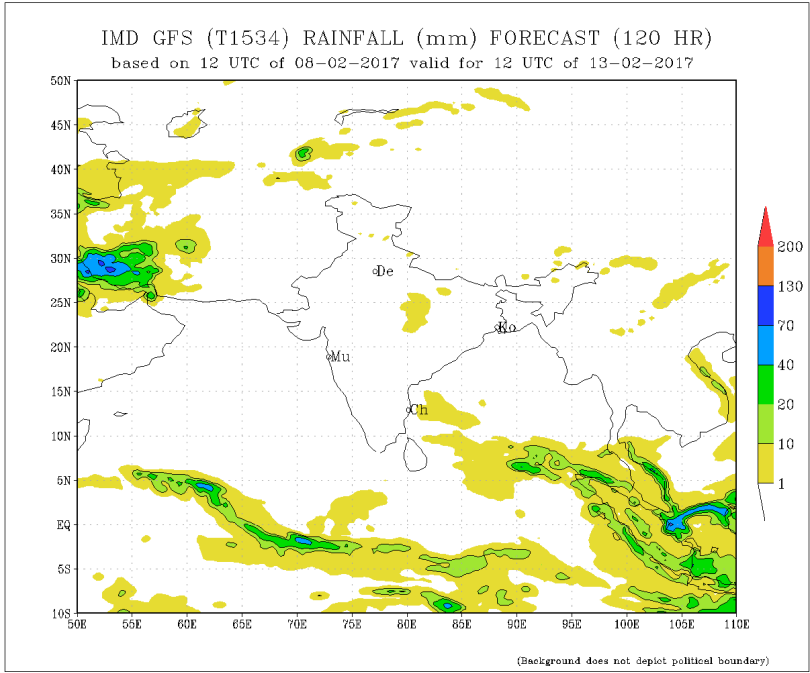
Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown



Daily Rainfall Forecast

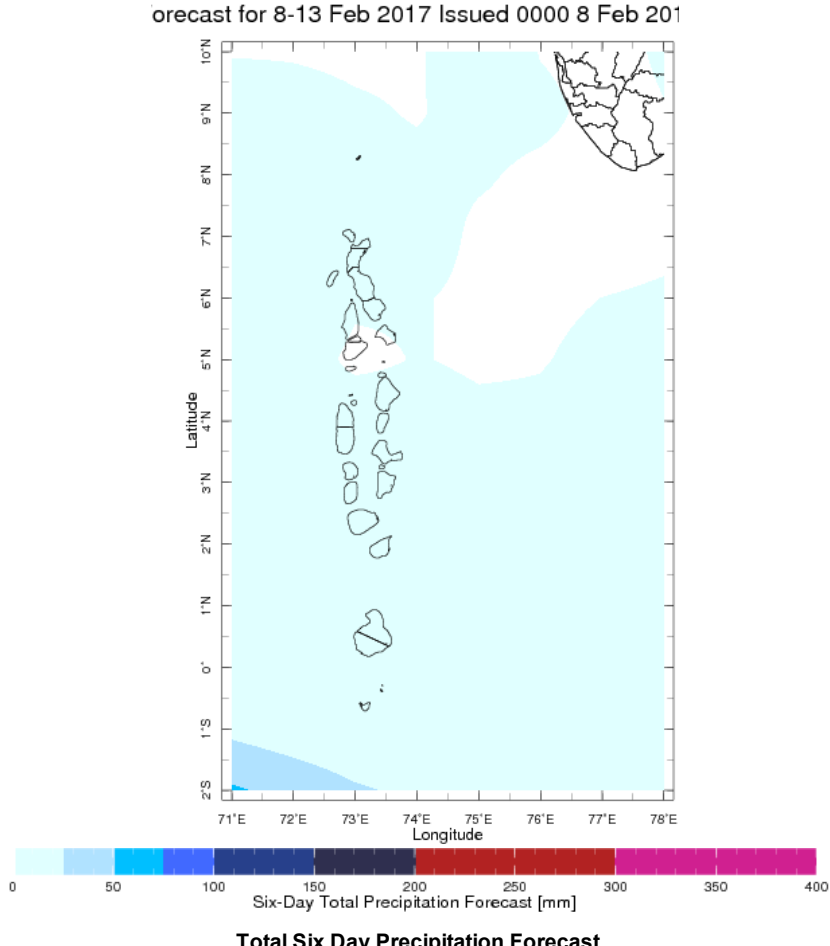
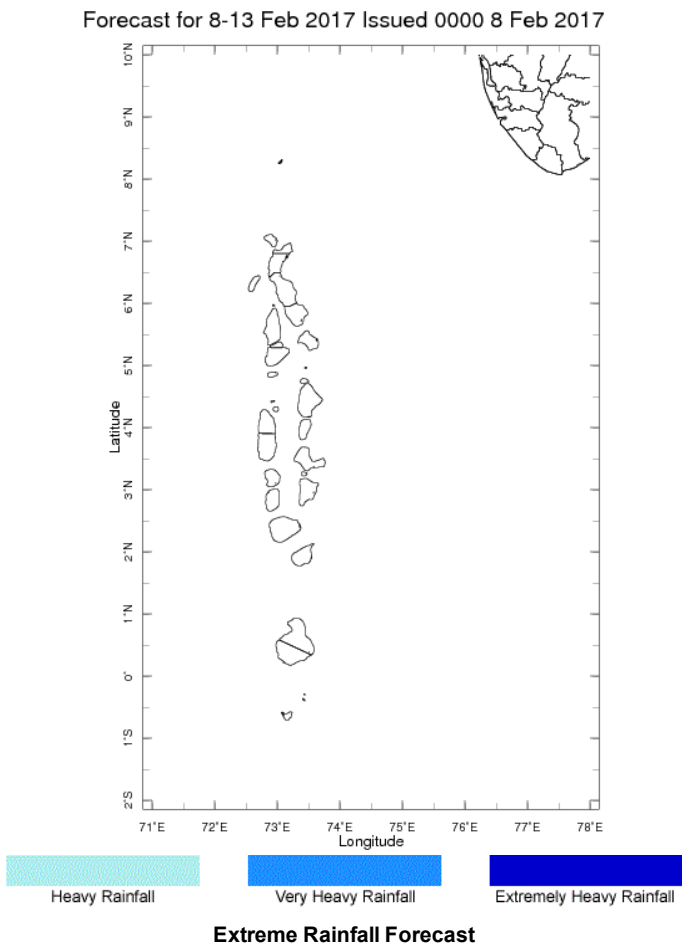
Daily Rainfall forecasts (up to 7 days ahead) from the IMD is provided in figures below. These predictions are from the GFS (T1534) model covering the entire south Asian region.





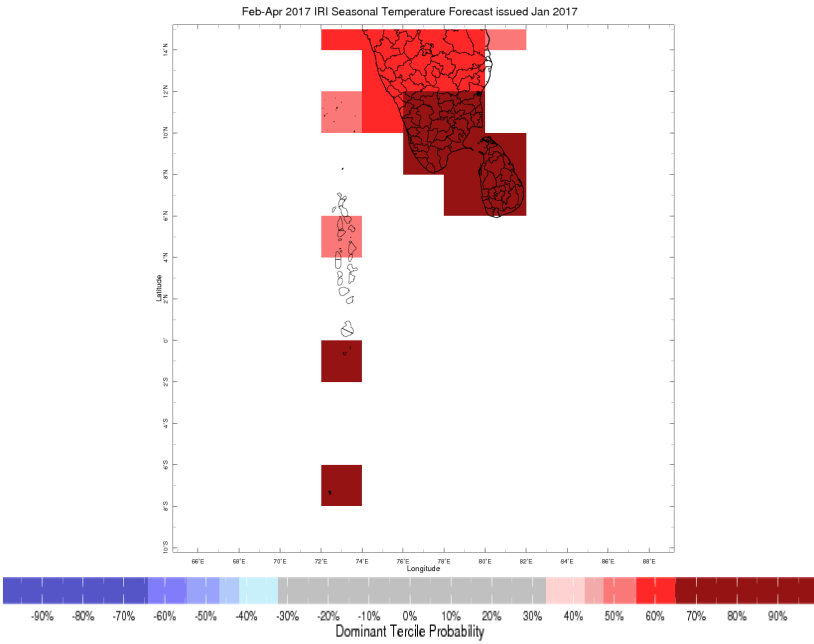
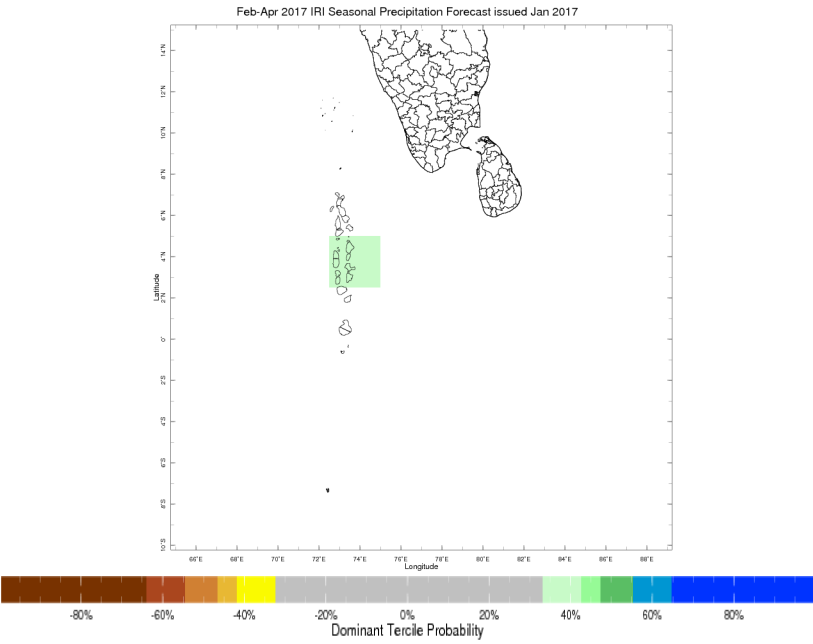
Weekly Rainfall Forecast

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.



Seasonal Rainfall and Temperature Forecast

Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant tercile probability levels. The upper side of the color bar shows the colors used for increasingly strong probabilities when the dominant tercile is the above-normal tercile, while the lower side shows likewise for the below-normal tercile. The gray color indicates an enhanced probability for the near-normal tercile (nearly always limited to 40%).



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