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Climate Monitoring and Prediction for the Maldives – November 2016

Prepared by Staff from Foundation for Environment, Climate and Technology, Sri Lanka and USA, Maldives Meteorological Service, and Columbia University
(Ruchira Lokuhetti, Prabodha Agalawatte, Zeenas Yahiya, Janan Visvanathan, Lareef Zubair, Zahid and Michael Bell)

December 5, 2016,

PACIFIC SEAS STATE
Nov 17, 2016

During mid-November 2016 the tropical Pacific SST anomaly was slightly cooler than -0.5C, the threshold for weak La Niña. Also, most of the atmospheric variables across the tropical Pacific have been consistent with weak La Niña conditions. The upper and lower atmospheric winds have been suggestive of a strengthened Walker circulation, and the cloudiness and rainfall have also been consistent with weak La Niña conditions. The collection of ENSO prediction models indicates SSTs near or slightly cooler than the threshold of La Niña during the remainder of fall, persisting through mid-winter, then weakening to cool-neutral by later winter. **(Text Courtesy IRI)**

INDIAN OCEAN STATE
Nov 23, 2016

~0.5^{0}C above average SST was observed around the central and southern islands of Maldives

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Highlights

Monitored: *In November, southern islands received up to 120 mm above average rainfall while some of northern and central islands received up to 90 mm below average rainfall. During the last week of November, an increase in rainfall throughout the country was visible. The sea surface temperature around southern and central Maldives is up to 0.5^{0}C above the seasonal average. In the northern islands, 15% decrease in cumulative rainfall for this year thus far is observed compared to the average cumulative rainfall since 2003.*

Predictions: *IRI seasonal prediction predicts climatological rainfall until the end of 2016. Weak La Niña conditions have set in - the Pacific SST anomaly is close to -0.5^{0}C. iIn the next week, Long Range Weather prediction models simulations do not anticipate extreme rainfall but heavy rainfall is expected in some places.*

Summary

CLIMATOLOGY

Monthly Climatology: In December, northern islands receive up to 150 mm while central and southern islands receive up to 200 mm and 250 mm rain respectively. Northern islands get north easterly wind while southern islands get northerly wind. Usually in January northern islands receive up to 50 mm rain while central and southern islands receive up to 100mm and 250 mm rain respectively. Wind is north easterly. In February, northern islands receive rainfall less than 50 mm while central islands receive up 50 mm rain and southern islands receive up to 100 mm rain. Wind is north easterly.

MONITORING

Weekly Rainfall Monitoring:

Date	Rainfall
19th Nov 2016	Up to 60 mm in southern and central islands. Up to 20 mm in northern atolls.
20th Nov 2016	Up to 60 mm in central islands. Up to 20 mm in northern atolls.
21st Nov 2016	Up to 60 mm in the entire country.
22nd Nov 2016	Up to 60 mm in northern and southern islands. Up to 20 mm in central islands.
23rd Nov 2016	Up to 60 mm in northern and central islands. Up to 35 mm in central islands.
24th Nov 2016	Up to 60 mm in central islands. Up to 20 mm in northern islands.
25th Nov 2016	Up to 60 mm in the entire country.
26th Nov 2016	Up to 60 mm in northern islands. Up to 20 mm in southern islands
27th Nov 2016	Up to 20 mm in central islands.
28th-30th Nov 2016	No rainfall.

Monthly and Seasonal Rainfall Monitoring: In November 2016, Maalhosmadulu, Faadhippolhu, Male and Felidhoo islands received ~90 mm rainfall below the climatological average and rest of the islands received ~120 mm rainfall above the climatological average. Entire country received up to ~100 mm of rainfall towards the end of November. This is the second highest rainfall recorded in northern islands during the past 6 years for the month of November. Central islands including Kolhumadulu atoll received up to ~600 mm rain in November while rest of the southern and the northern islands received up to ~300 mm rain.

PREDICTIONS

Weekly Rainfall Forecast: According to IMD GFS model up to 10 mm rain on the 6th in southern islands. There shall be up to 10 mm rainfall in northern and southern islands during 7th and 8th. Up to 10 mm and 20 mm rainfall is expected in the northern and southern islands respectively on the 9th. Up to 20 mm and 40 mm rainfall on the 9th and up to 40 mm and 70 mm during 10th-11th is expected in central and southern islands respectively.

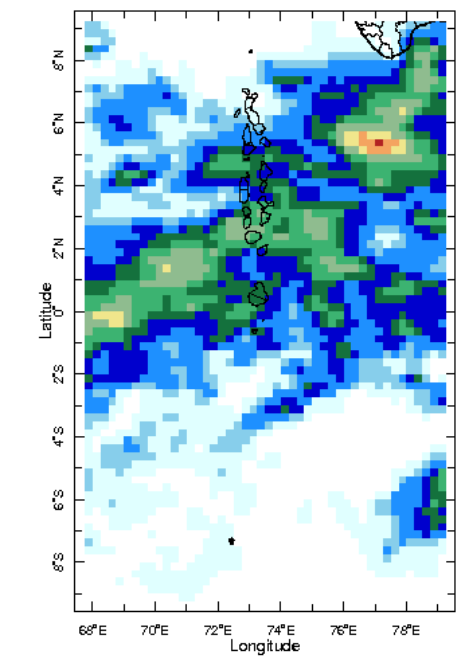
Seasonal Rainfall and Temperature Prediction: As per IRI Multi Model Probability Forecast for December to February 2017, rainfall shall be climatological in the entire country. The 3-month average temperature has a 40% likelihood to be in the above-normal tercile in southern islands during these 3 months. Temperature in northern islands shall be climatological.

Inside this Issue

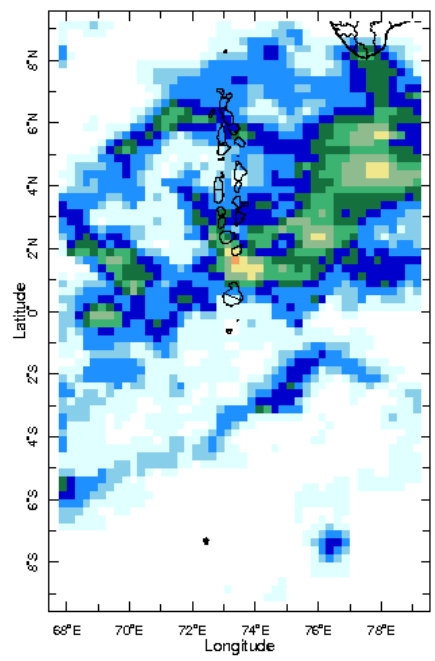
www.climate.lk

Daily Rainfall Monitoring

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



19 Nov 2016



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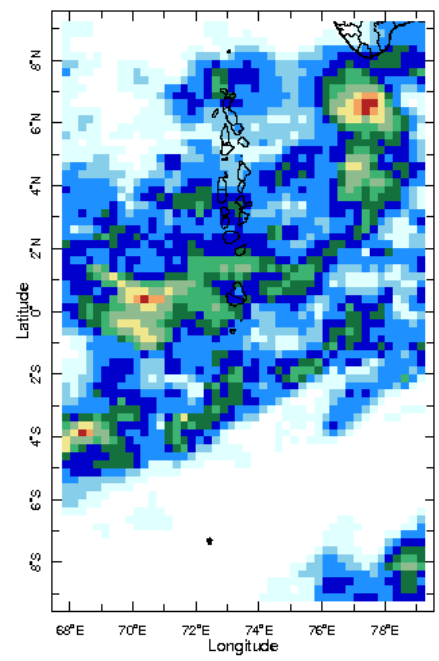

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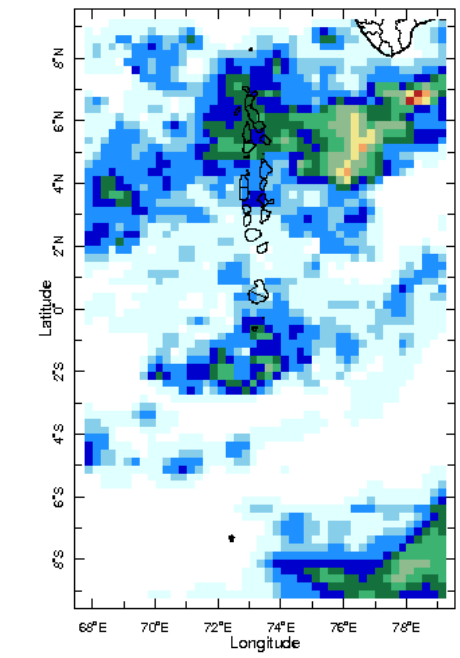

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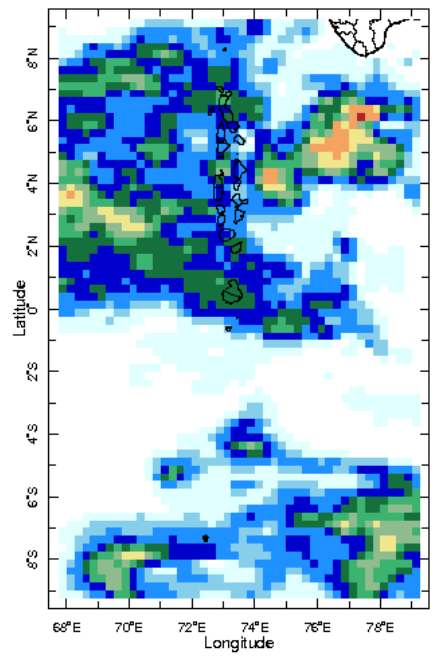

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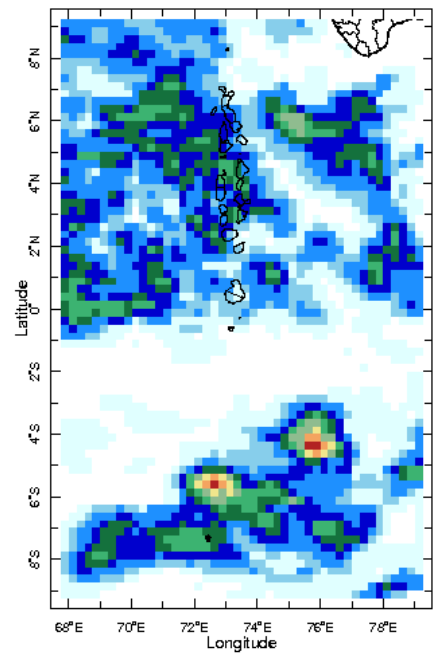

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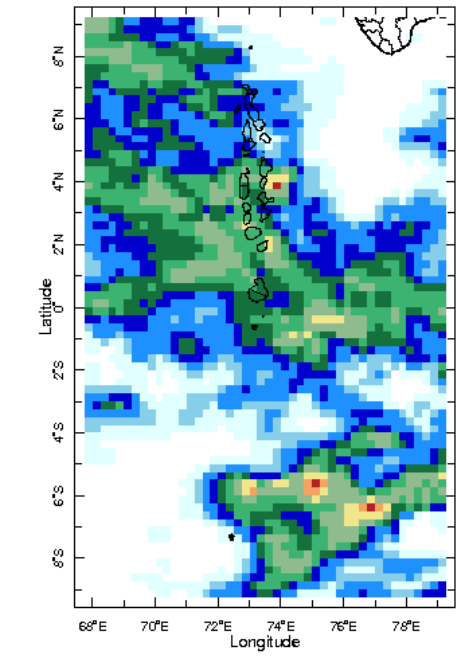

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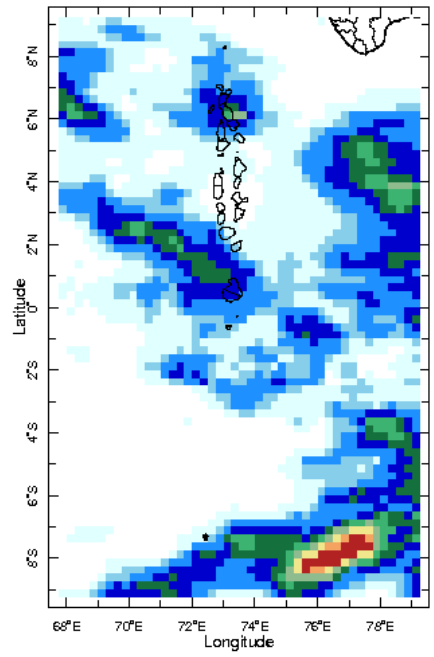
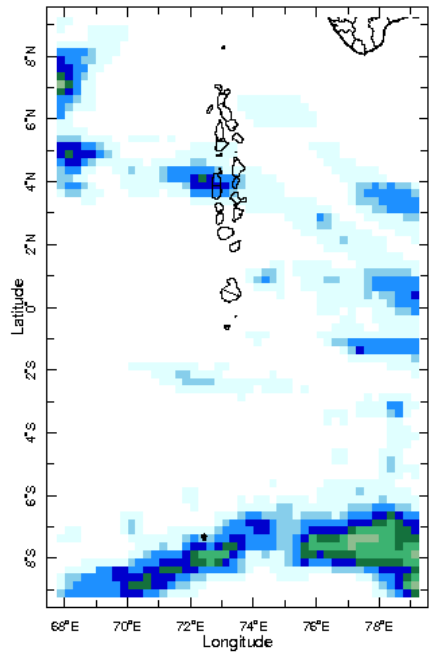


26 Nov 2016



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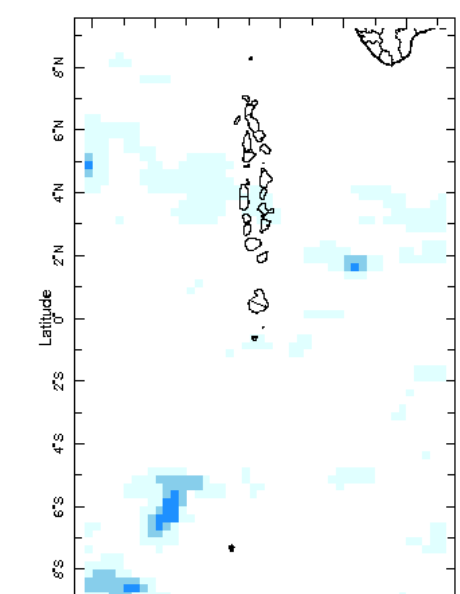
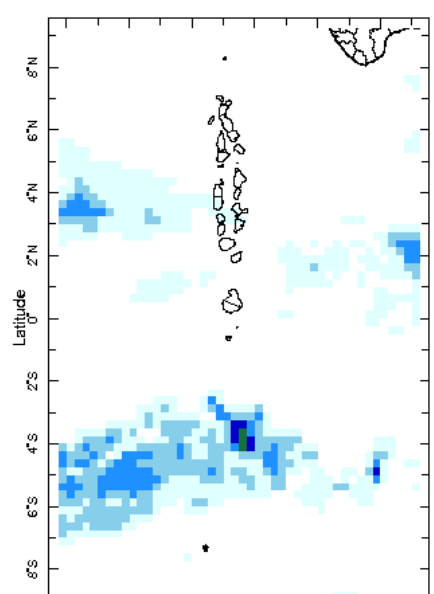


28 Nov 2016



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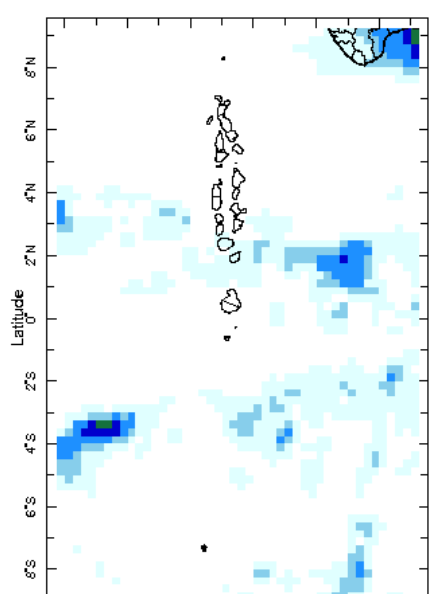
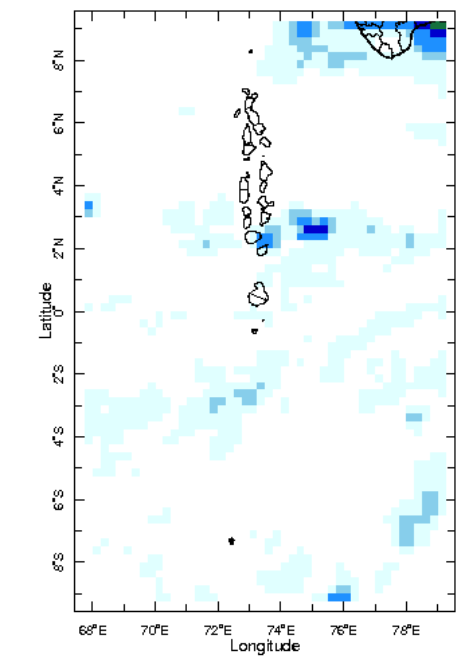


30 Nov 2016



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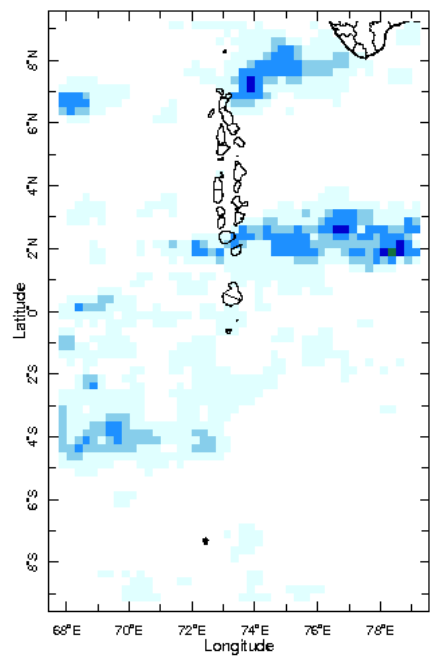

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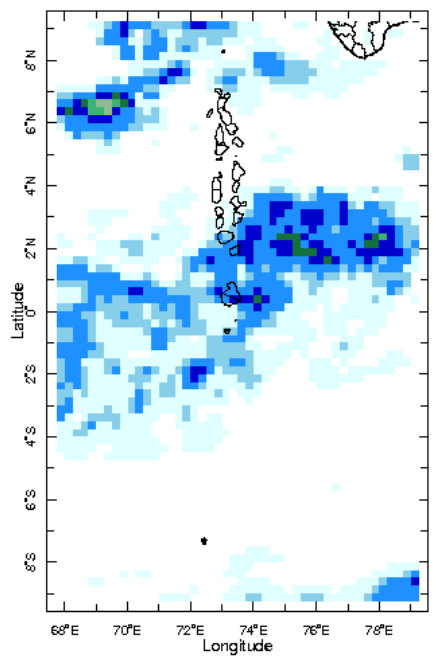

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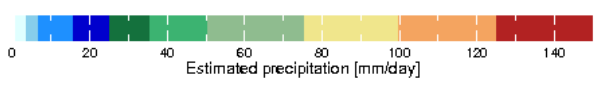
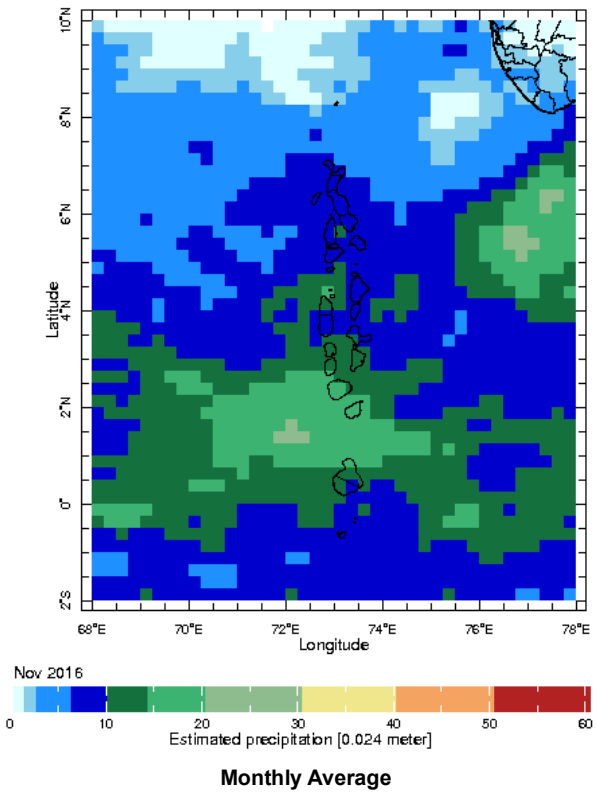
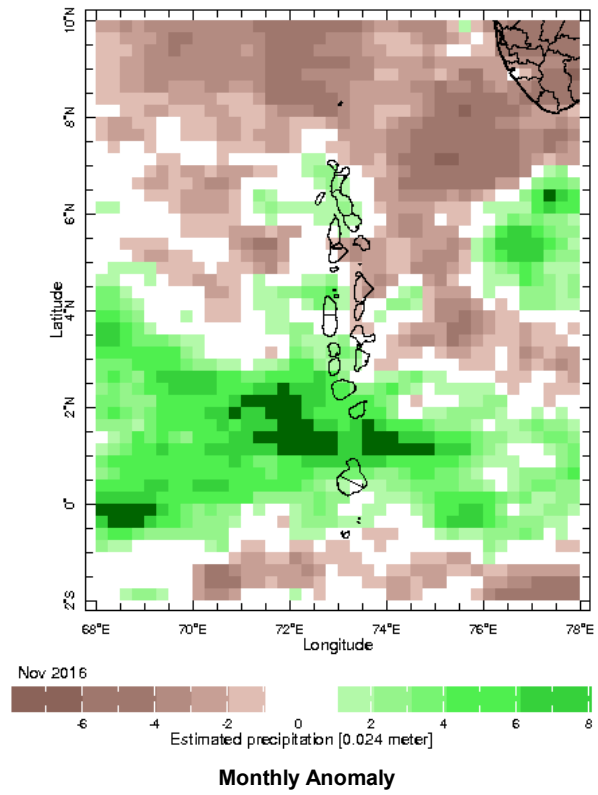


Monthly Rainfall Monitoring

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

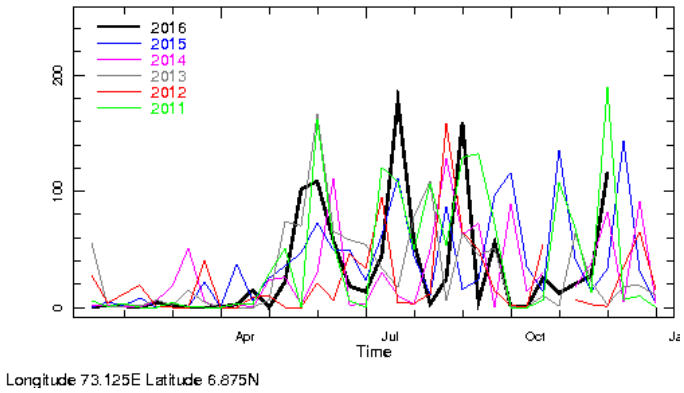


Monthly Average

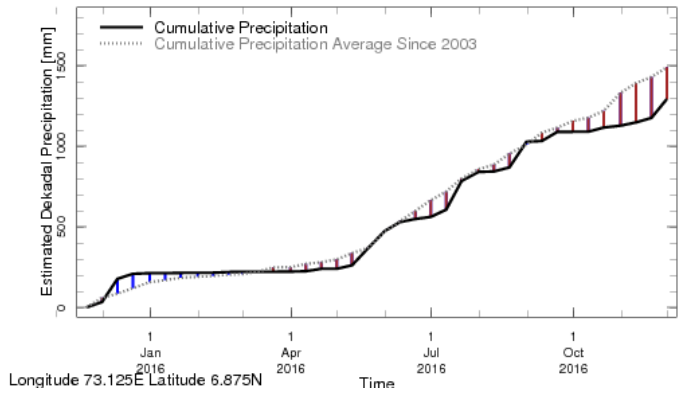


Monthly Anomaly

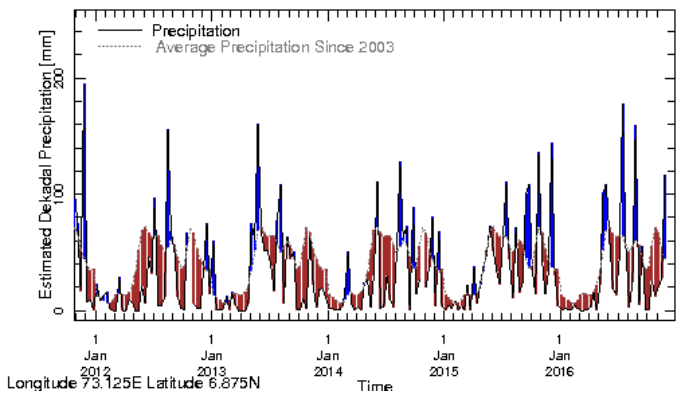
Northern Maldives:



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

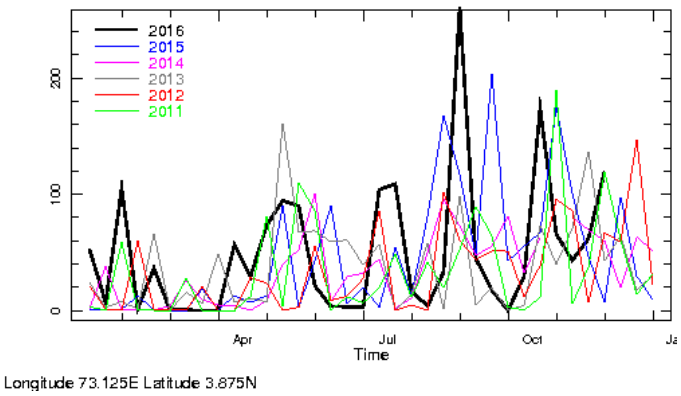


Rainfall of past 365 days (black) compared to average rainfall since 2003.

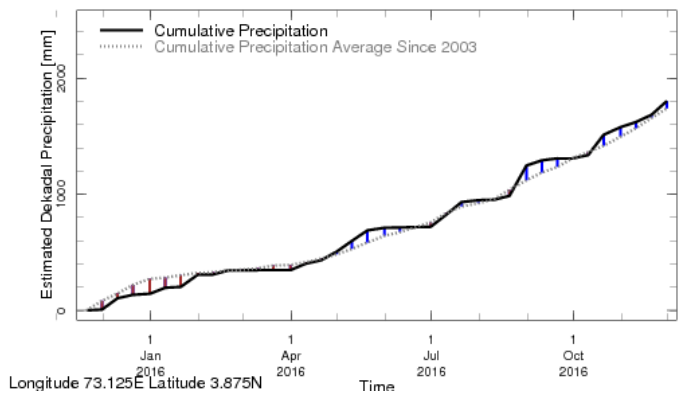


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

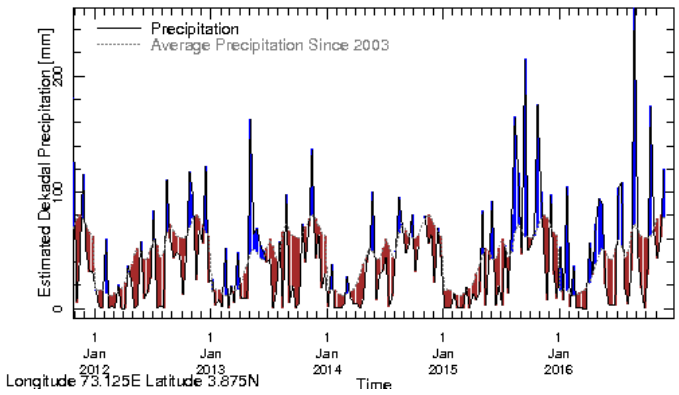
Central Maldives:



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

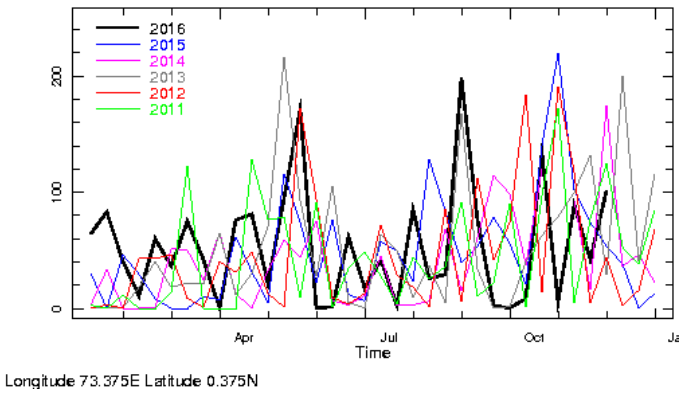


Rainfall of past 365 days (black) compared to average rainfall since 2003.

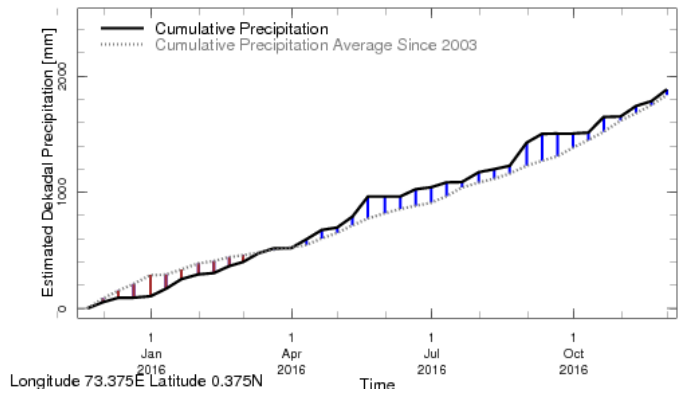


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

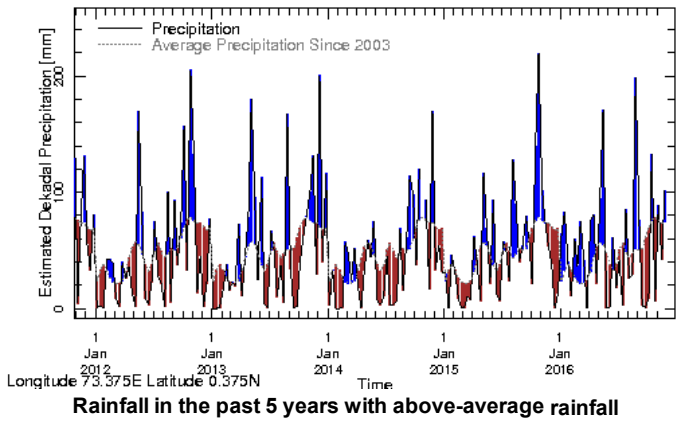
Southern Maldives:



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

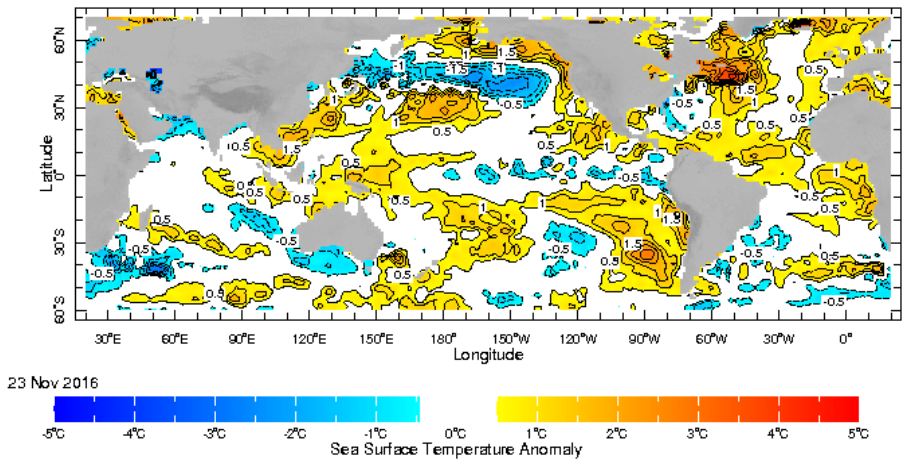


Rainfall of past 365 days (black) compared to average rainfall since 2003.



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

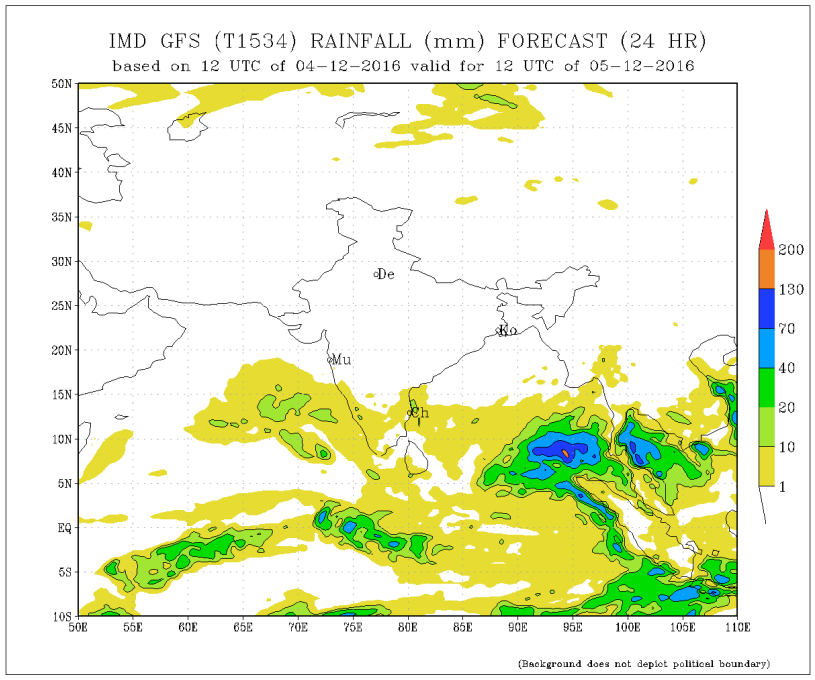
Ocean Surface Monitoring

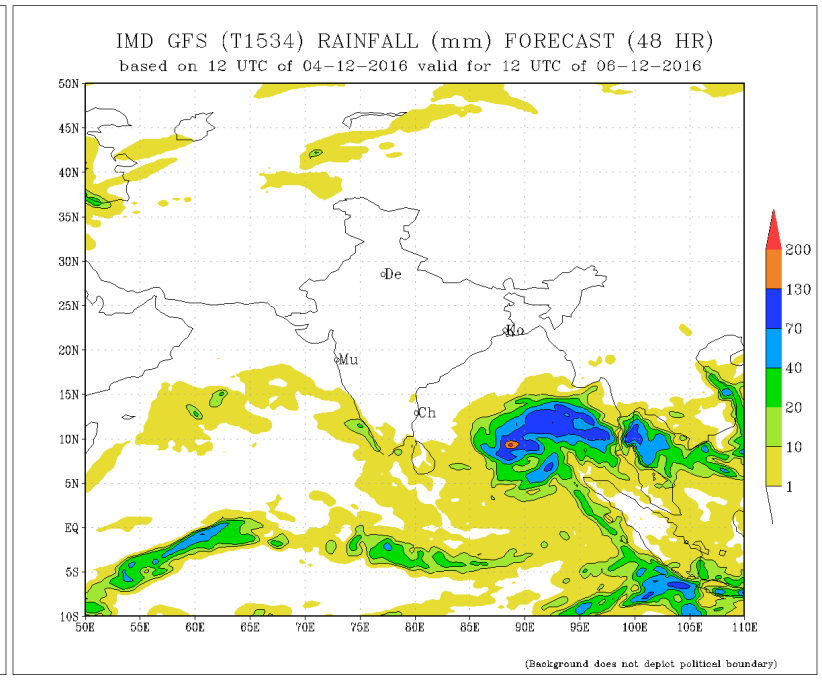


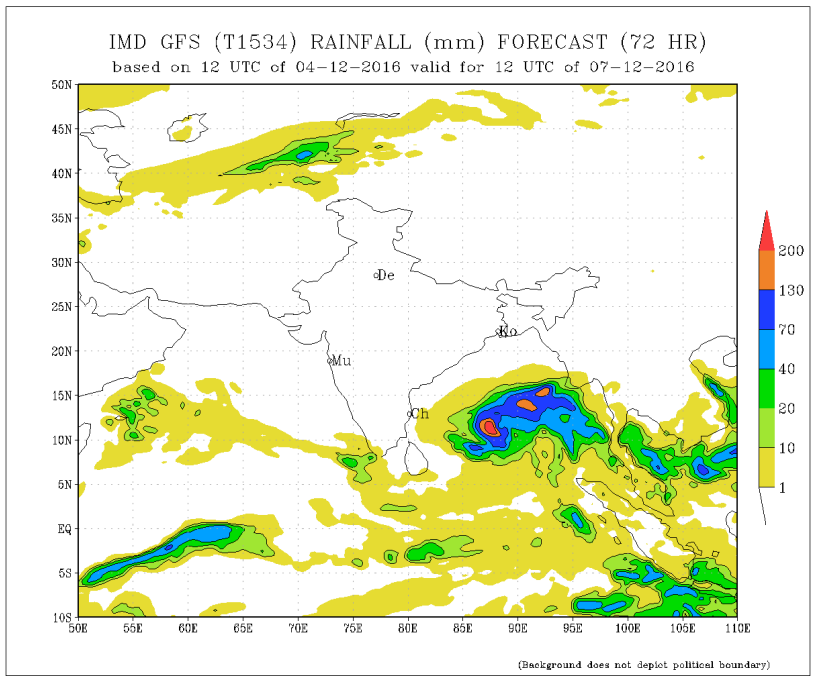
WORLDBATH topography

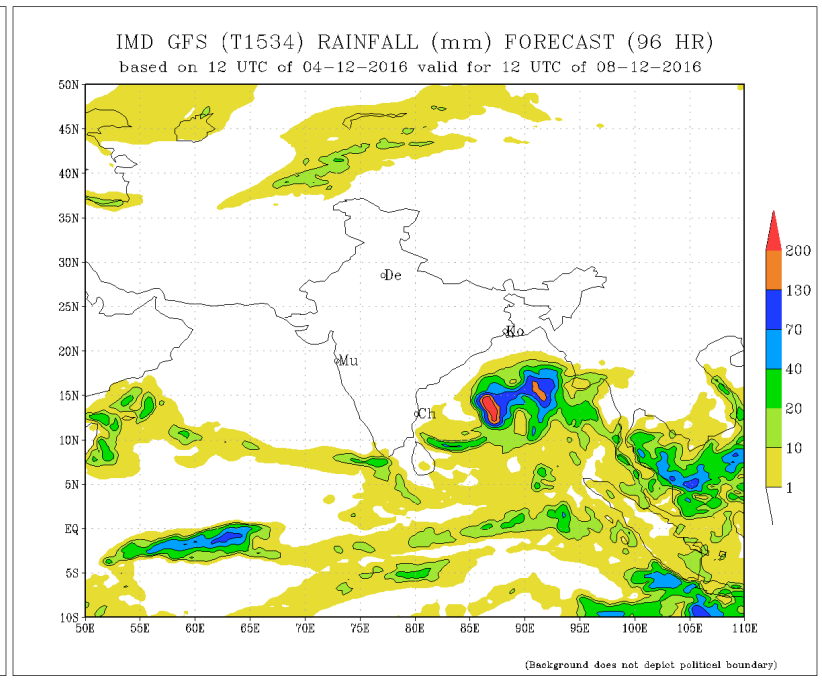
Daily Rainfall Forecast

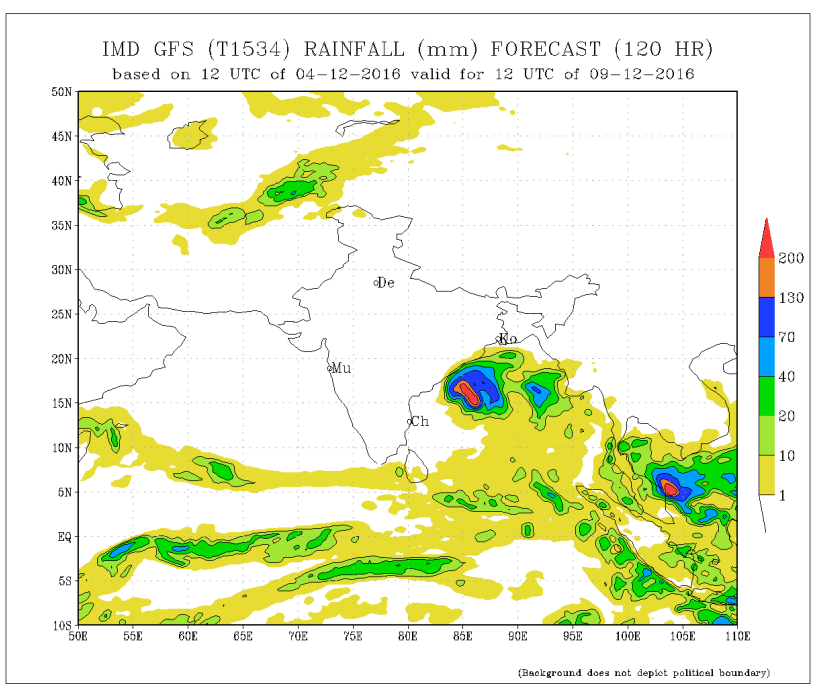
Daily Rainfall forecasts (up to 7 days ahead) from the IMD New Delhi is provided in figures below. These predictions are from the GFS (T574) model covering the entire south Asian region.

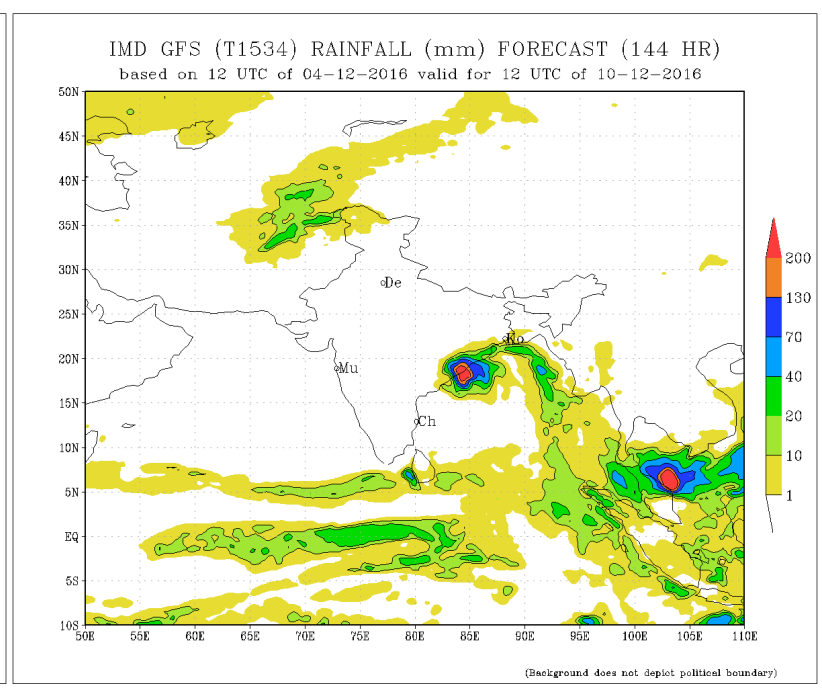


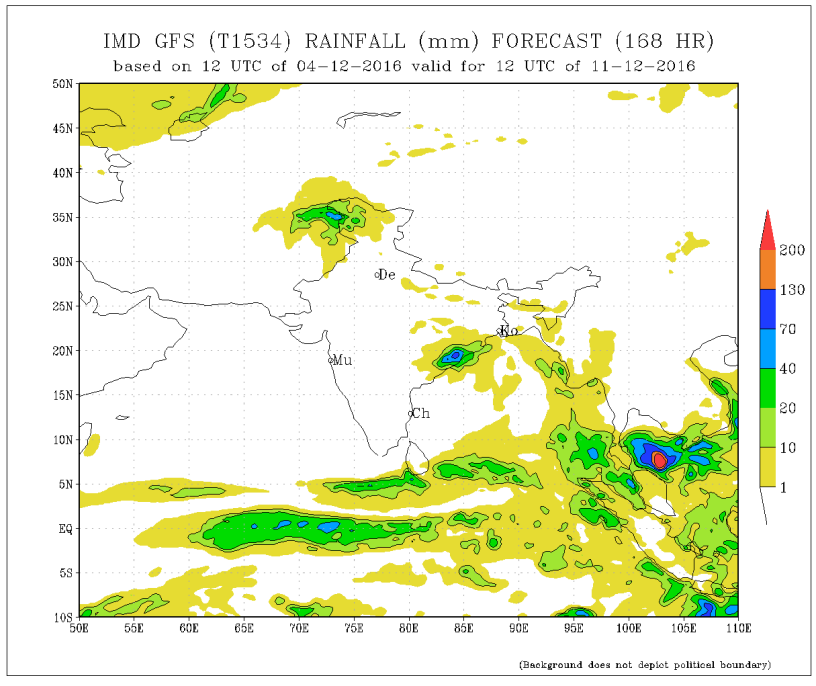






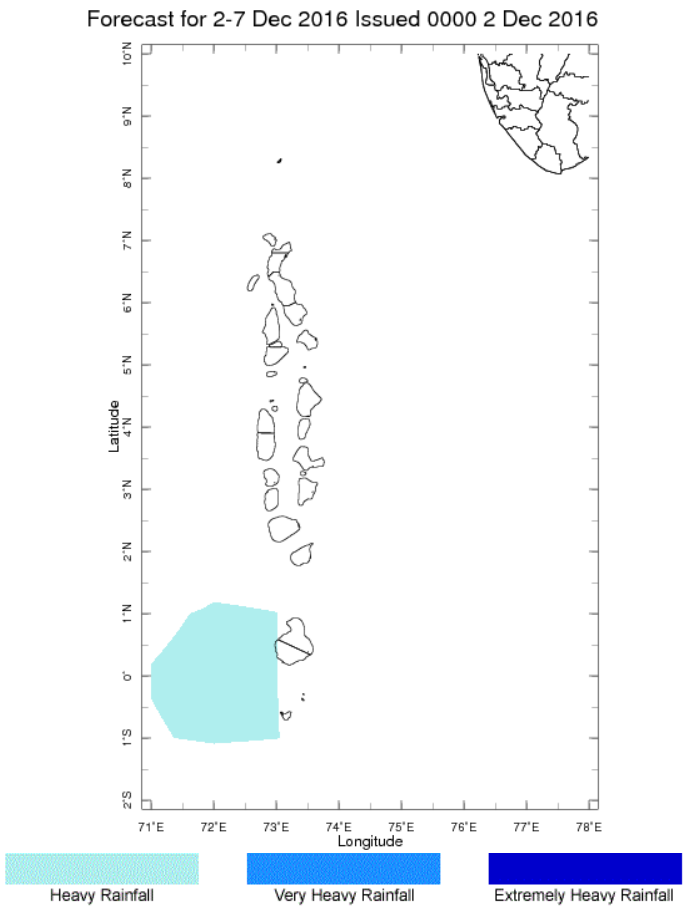




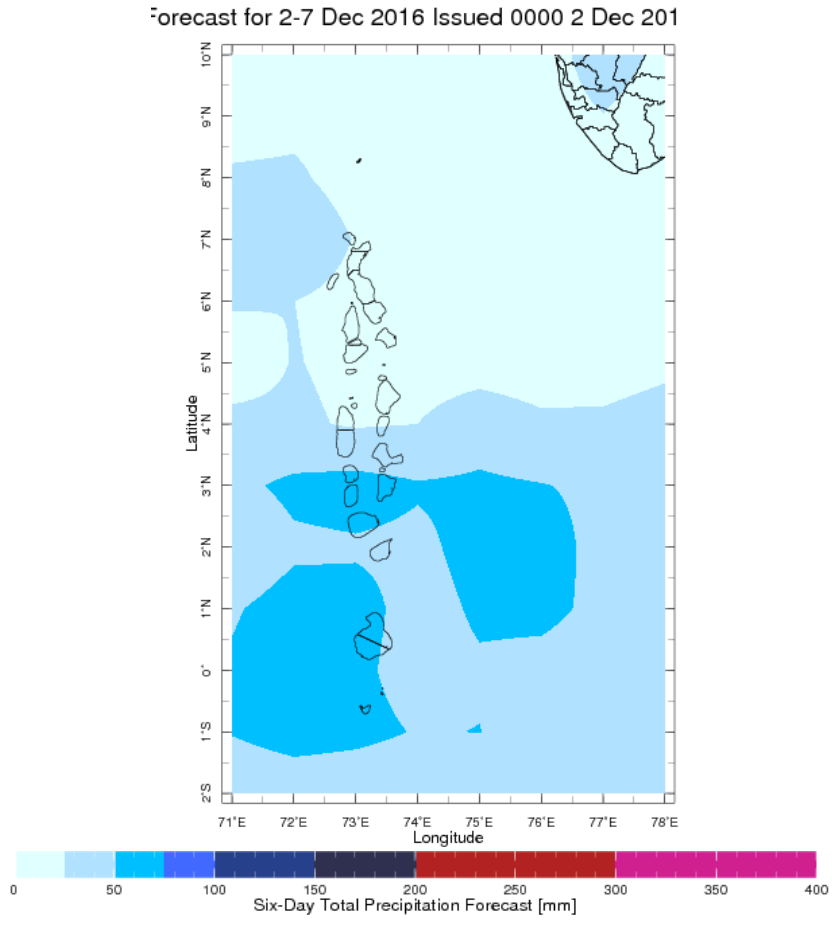

IMD GFS (T1534) RAINFALL (mm) FORECAST (168 HR)
based on 12 UTC of 04-12-2016 valid for 12 UTC of 11-12-2016
50N
45N
40N
35N
30N
25N
20N
15N
10N
5N
EQ
5S
10S
50E
55E
60E
65E
70E
75E
80E
85E
90E
95E
100E
105E
110E
De
Mu
Ch
200
130
70
40
20
10
1
(Background does not deplot political boundary)

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.



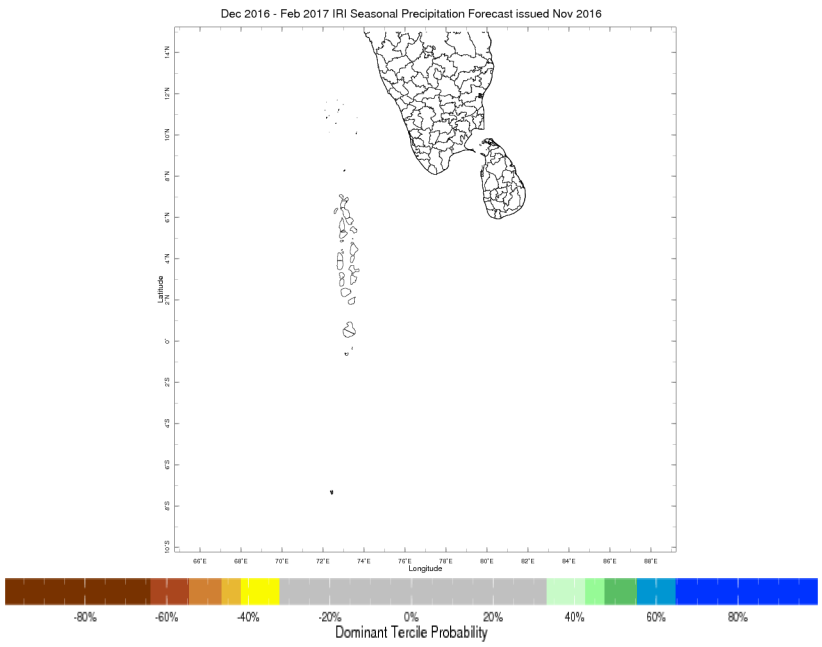
Extreme Rainfall Forecast



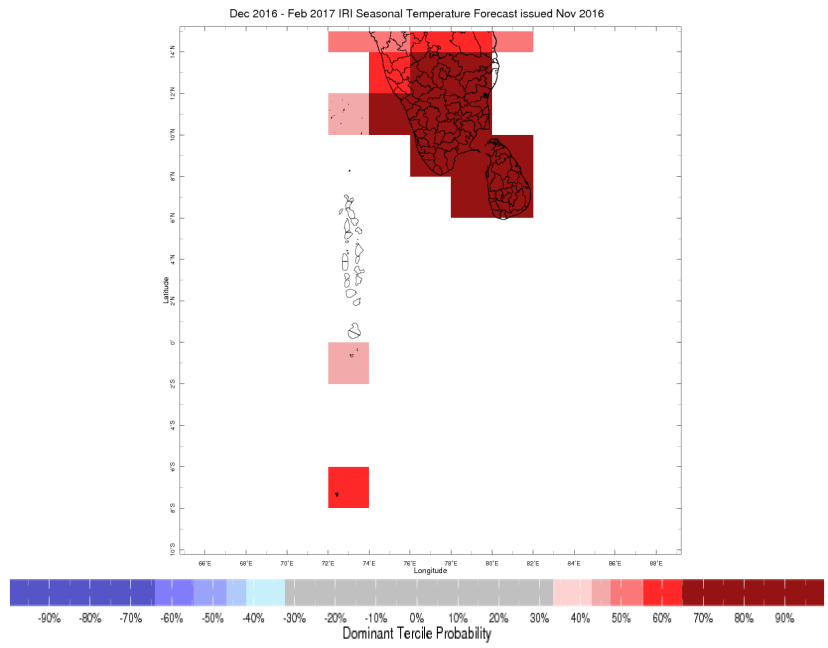
Total Six Day Precipitation Forecast

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%).



Precipitation Forecast



Temperature Forecast

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