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Experimental Climate Monitoring and Prediction for the Maldives – July 2016

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

August 8, 2016

PACIFIC SEAS STATE

July 21, 2016

During mid-July 2016 the tropical Pacific SST anomaly was slightly below zero, indicating ENSO-neutral conditions. The key atmospheric variables also indicate neutral ENSO conditions. This includes near-average upper and lower level tropical Pacific winds, as well as mainly near-normal cloudiness and rainfall patterns in the central and eastern equatorial Pacific. Most ENSO prediction models indicate neutral ENSO conditions during July, with likely development of La Niña during August or September, lasting through fall and into winter. Most likely strength is weak.

(Text Courtesy IRI)

INDIAN OCEAN STATE

Aug 3, 2016

Neutral SST observed near Maldives

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Highlights

The entire country received up to 200 mm less than average rainfall in June 2016. In July, northern and central islands received up to 200 mm above average rainfall while southern islands received up to 100 mm below average rainfall. The amount of rainfall received by northern and central islands is the highest amount received in past six years in these regions. Since the last week of July a decrease in rainfall throughout the country was visible and the first week of August was mostly dry. Dry conditions shall prevail in the second week of August as well. ENSO models predict likely development of La Niña conditions during August or September.

Summary

CLIMATOLOGY

Monthly Climatology: The rainfall in northern islands usually increases up to 250 mm in June, while it decreases to 150 mm in southern islands. Wind direction in June is usually easterly but with low speeds. In July the entire country receives up to 200 mm rainfall and the wind speed and direction does not change. In August, the rainfall in southern and central islands increases to 250 mm while in northern islands it remains up to 200 mm. The wind direction and speed is similar to previous months.

MONITORING

Weekly Rainfall Monitoring:

Date	Rainfall
20th July 2016	Less than 10 mm in central and southern islands
21st July 2016	Up to 60 mm in southern islands and up to 100 mm in south-eastern sea.
22nd July 2016	Up to 60 mm in southern islands.
23rd, 24th & 25th Jul 2016	No Rainfall
26th July 2016	Up to 10 mm in northern islands
27th July 2016	Up to 50 mm in northern islands
28th & 29th July 2016	Up to 20 mm in central and southern islands
30th July 2016	Up to 50 mm in southern islands
31st July 2016	Less than 10 mm in northern islands
1st, 2nd, 3rd, 4th Aug 2016	No Rainfall

Monthly and Seasonal Rainfall Monitoring: During June 2016 the entire country received below average rainfall. Up to 250 mm rain was received by northern and south central islands while the rest of the country received up to 120 mm rain. Similar rainfall was seen during July as well, but compared to historical rainfall in July this received rainfall was above average except in southern islands. Rainfall received by northern and central islands this year is the highest amount in last 6 years.

PREDICTIONS

Weekly Rainfall Forecast: According to IMD GFS model, up to 40 mm rain is expected in the Maldives on 9th & 10th of August and no rainfall is expected until the 15th. No extreme rainfall conditions are expected during this period.

Seasonal Rainfall and Temperature Prediction: As per IRI Multi Model Probability Forecast for August to October 2016, the rainfall shall be climatological in the entire country. The 3-month average temperature has a 60-80% likelihood to be in the above-normal tercile during these 3 months in the entire country.

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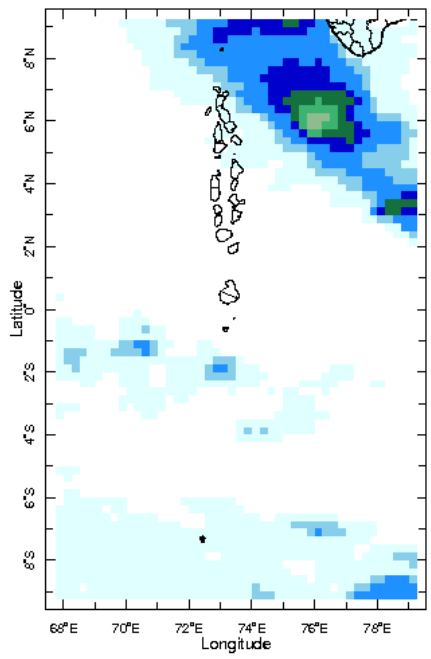
www.climate.lk

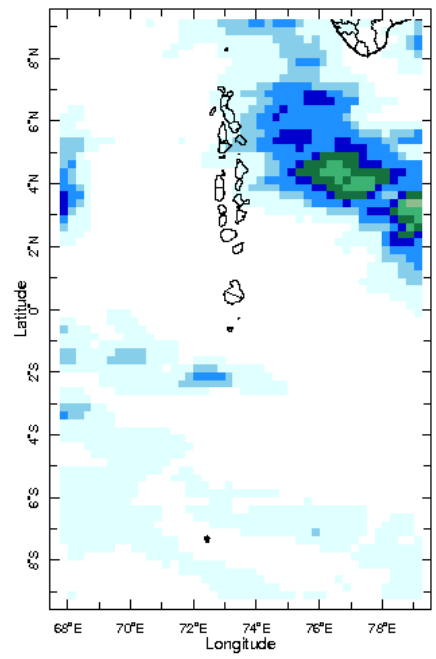
These interpretations of climatic conditions are an experimental product.

Daily Rainfall Monitoring

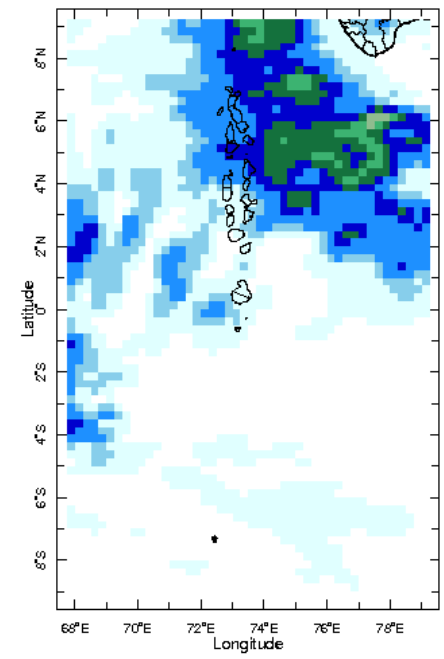
The following figures show the observed rainfall in the last 15 days in Maldives.



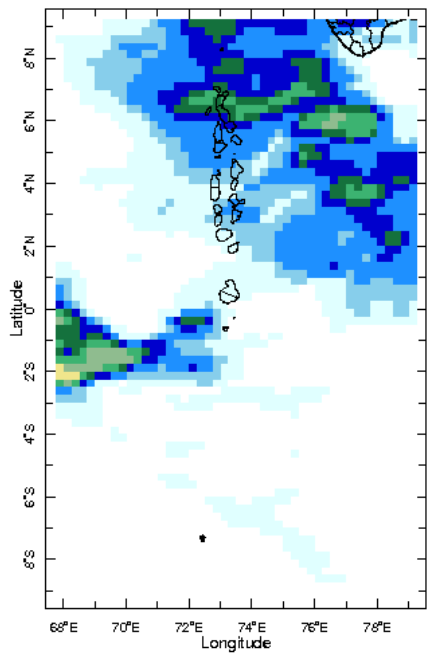
24 Jul 2016



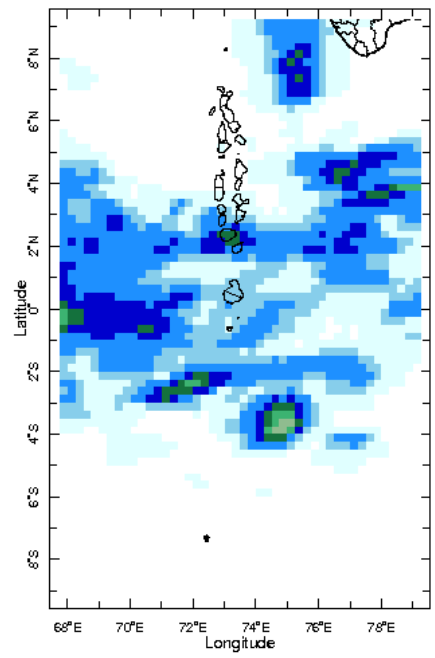
25 Jul 2016



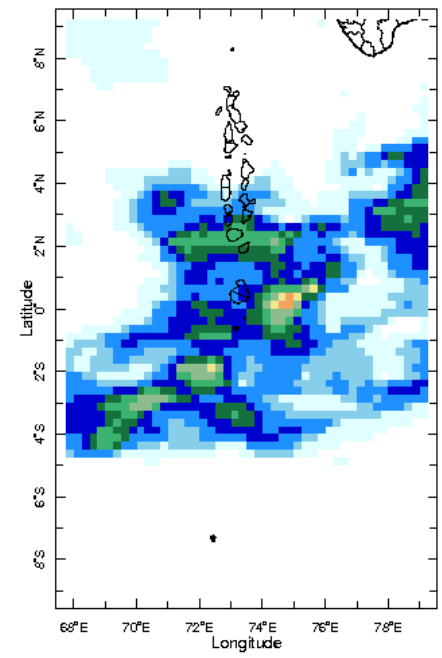
26 Jul 2016



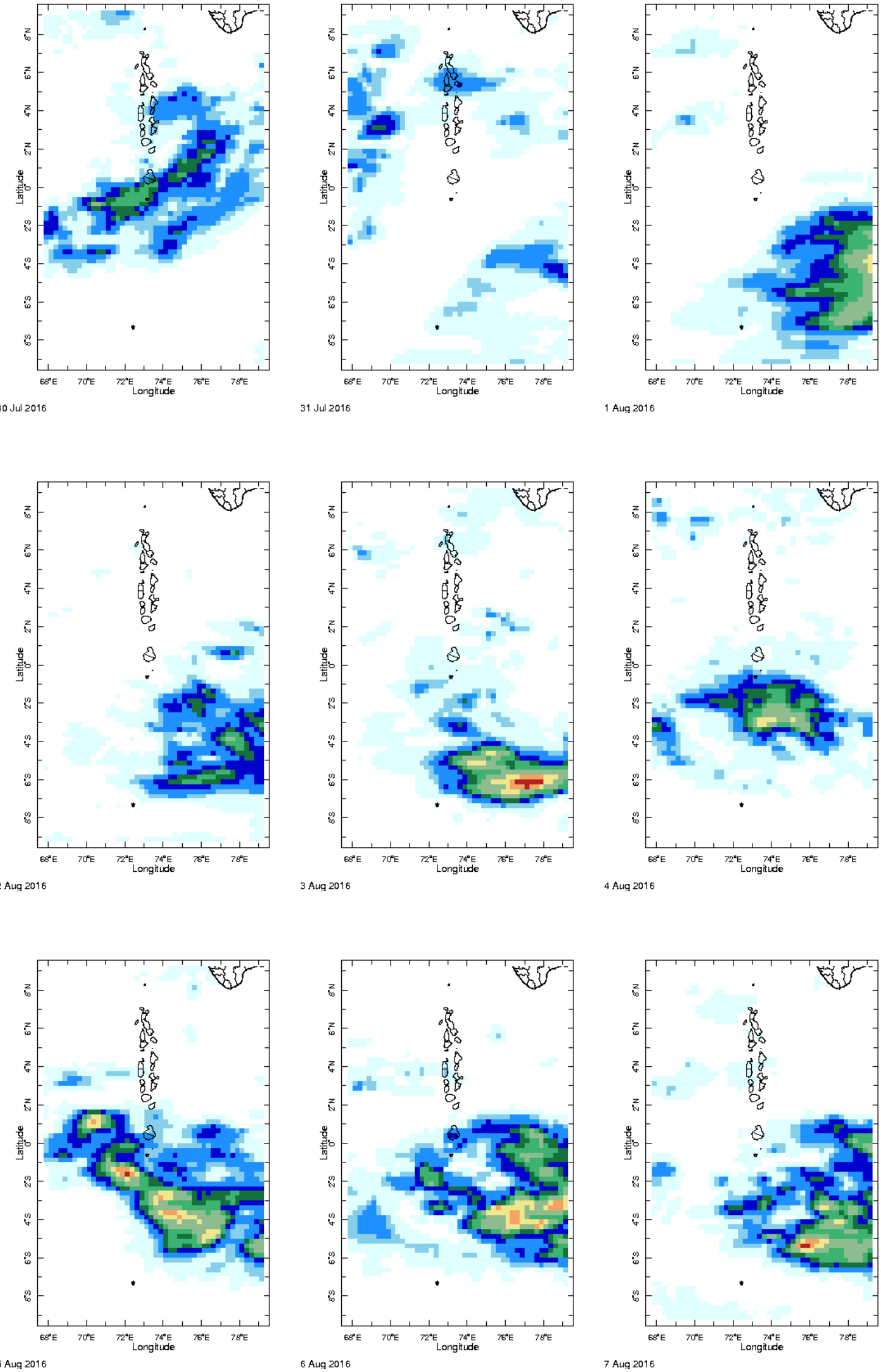
27 Jul 2016



28 Jul 2016

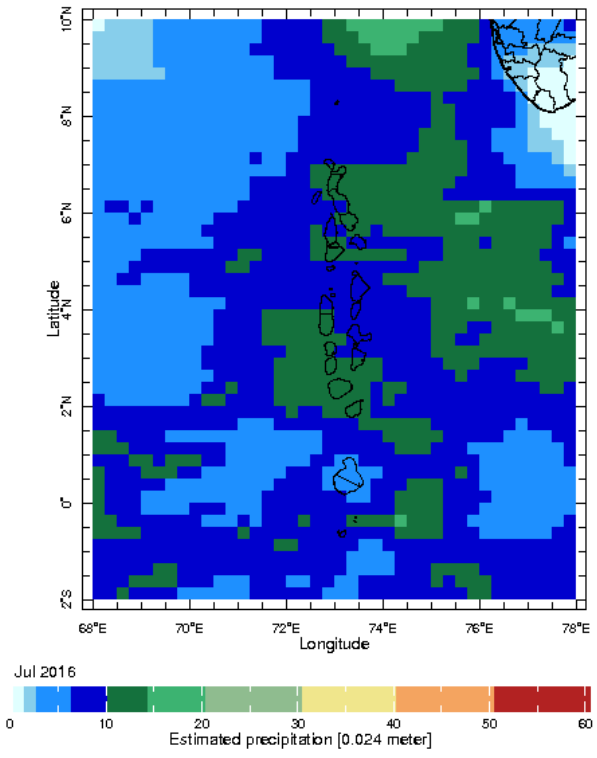


29 Jul 2016

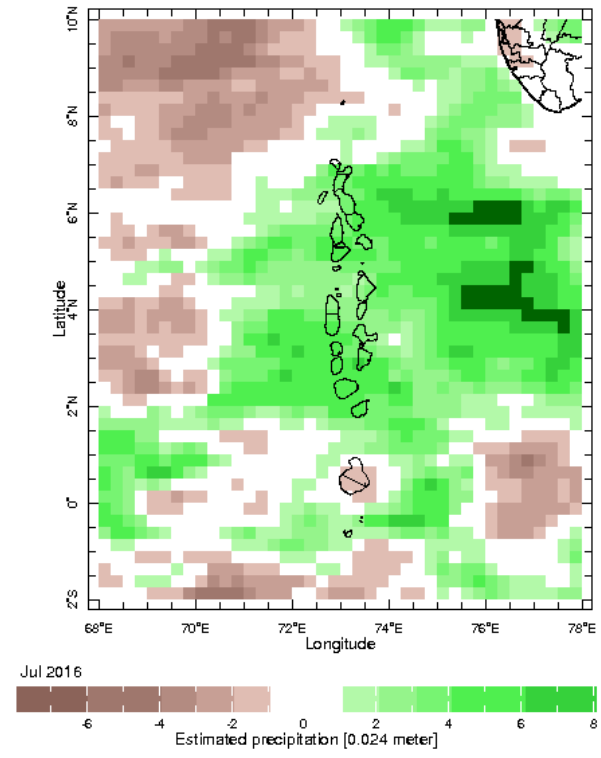

Latitude
Longitude
8°N
6°N
4°N
2°N
0°
2°S
4°S
6°S
8°S
68°E
70°E
72°E
74°E
76°E
78°E
30 Jul 2016
31 Jul 2016
1 Aug 2016
2 Aug 2016
3 Aug 2016
4 Aug 2016
5 Aug 2016
6 Aug 2016
7 Aug 2016
0
20
40
60
80
100
120
140
Estimated precipitation [mm/day]

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



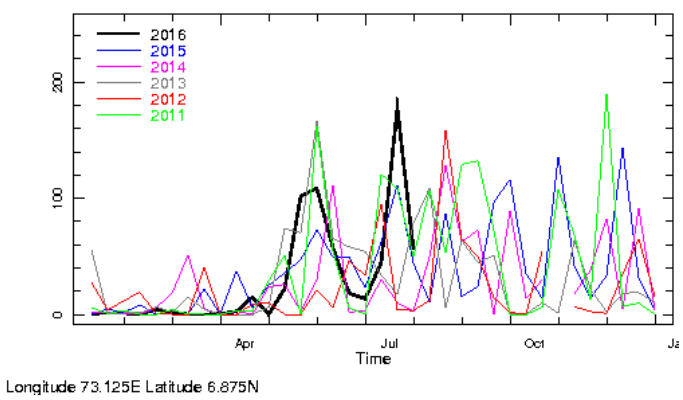
Monthly Average



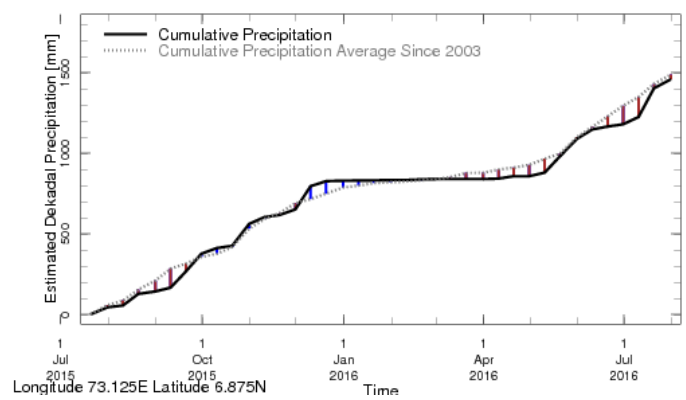
Monthly Anomaly

Monthly and Seasonal Monitoring

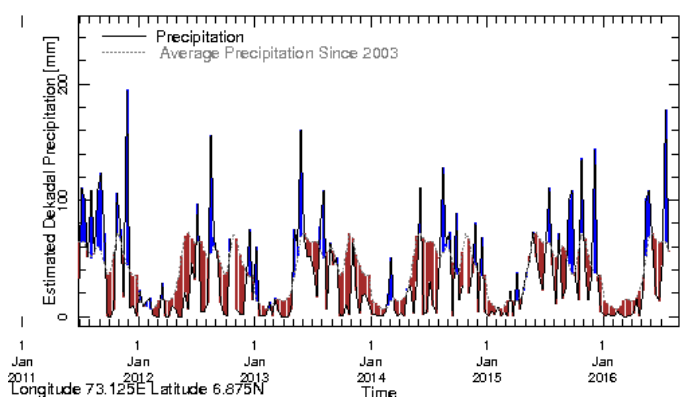
Northern Maldives:



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

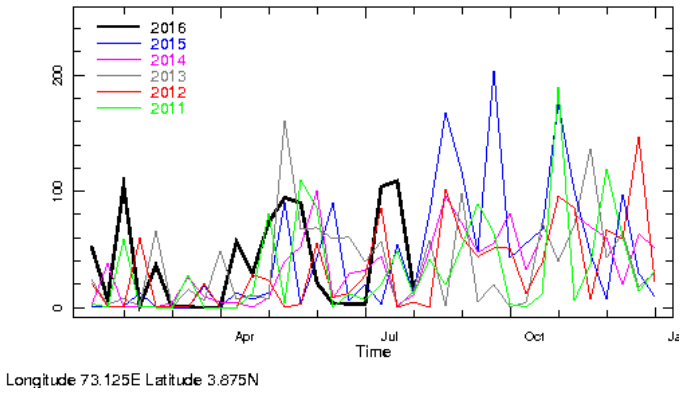


Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.

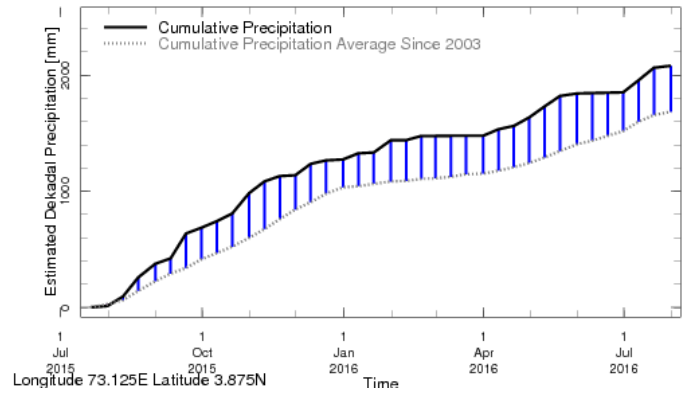


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

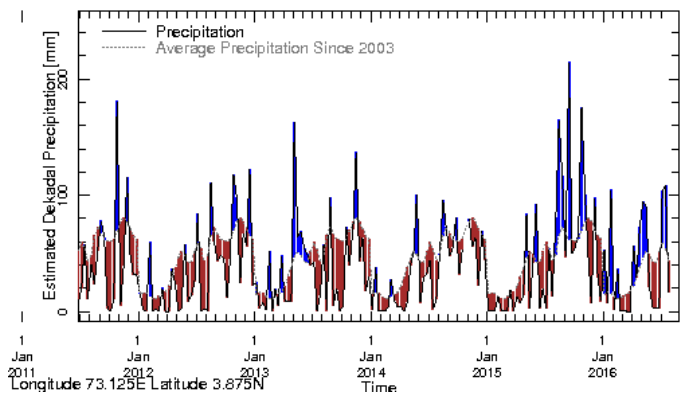
Central Maldives:



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

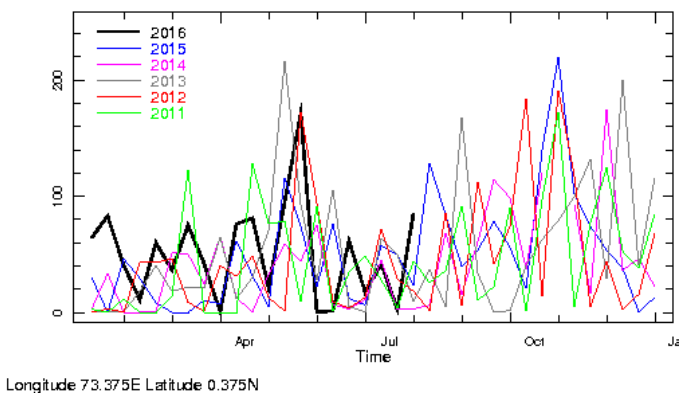


Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.

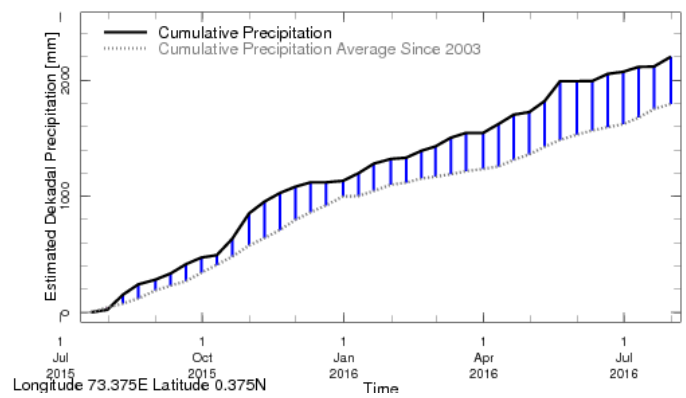


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

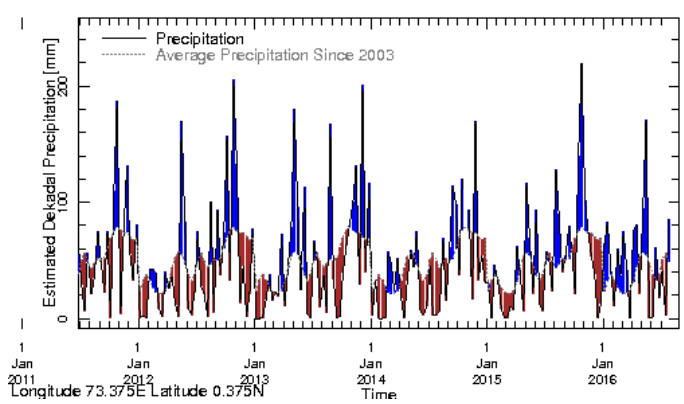
Southern Maldives:



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

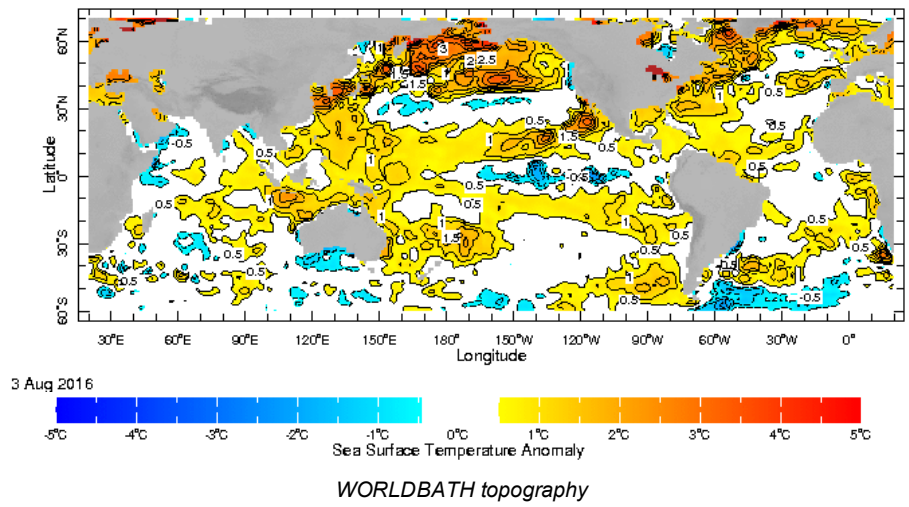


Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.



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

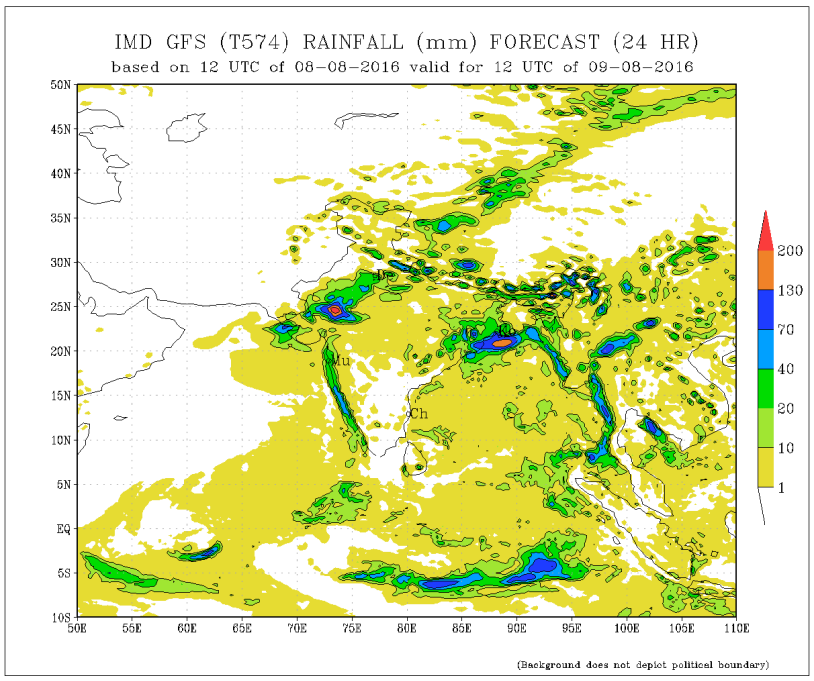
Ocean Surface Monitoring

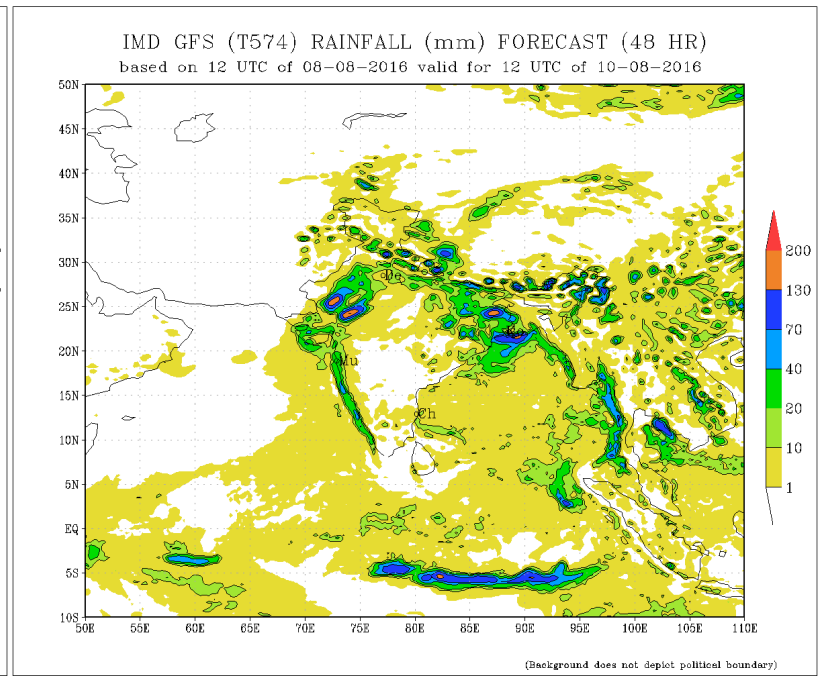


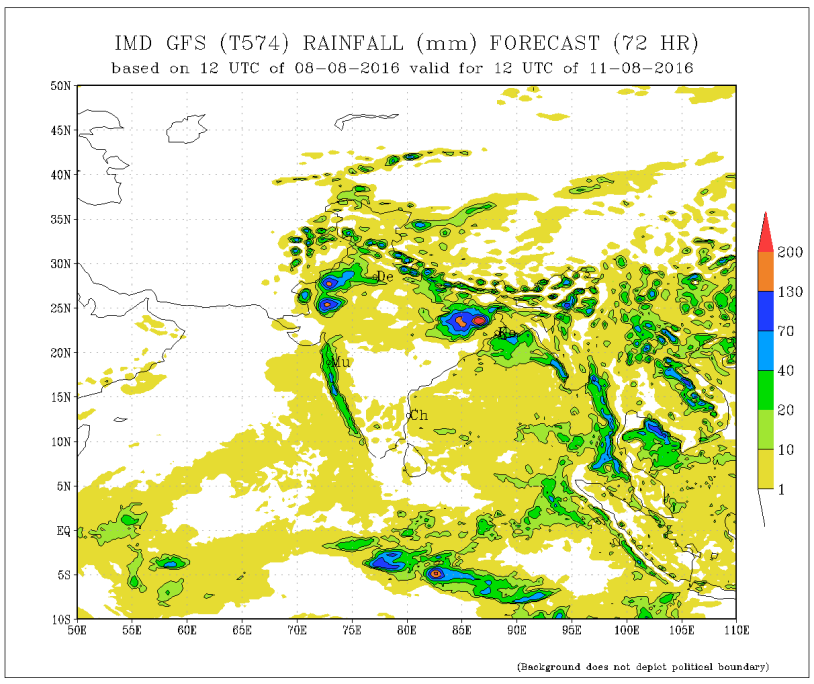
WORLDBATH topography

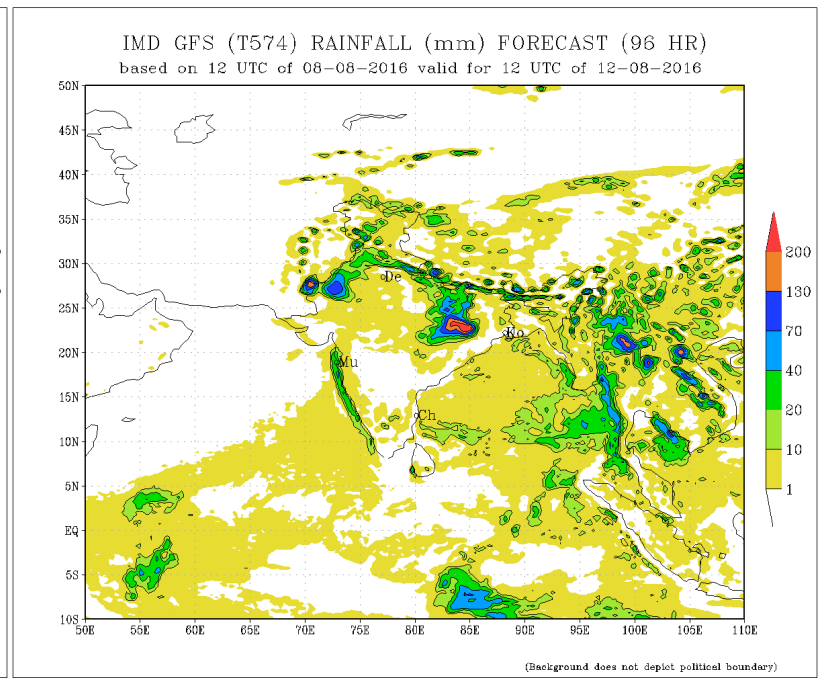
Daily Rainfall Forecast

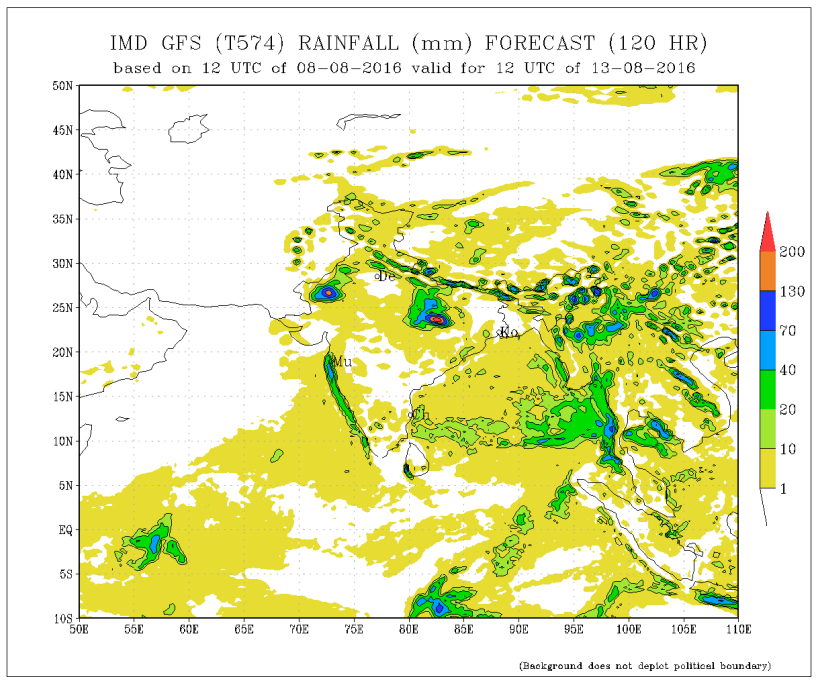
Daily Rainfall forecasts (up to 7 days ahead) from the IMD New Delhi is provided in figures below. These predictions are from the GFS (T574) model covering the entire south Asian region.

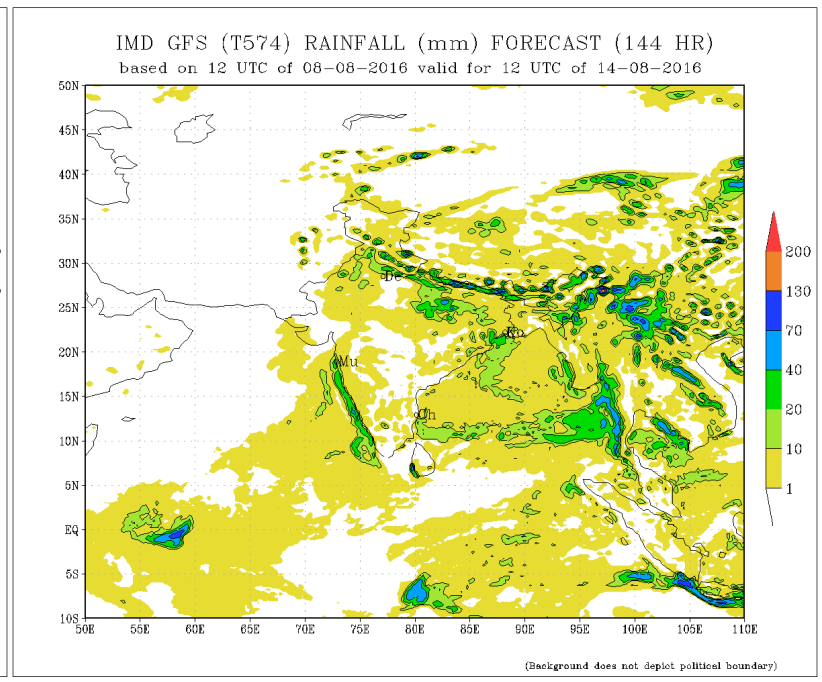


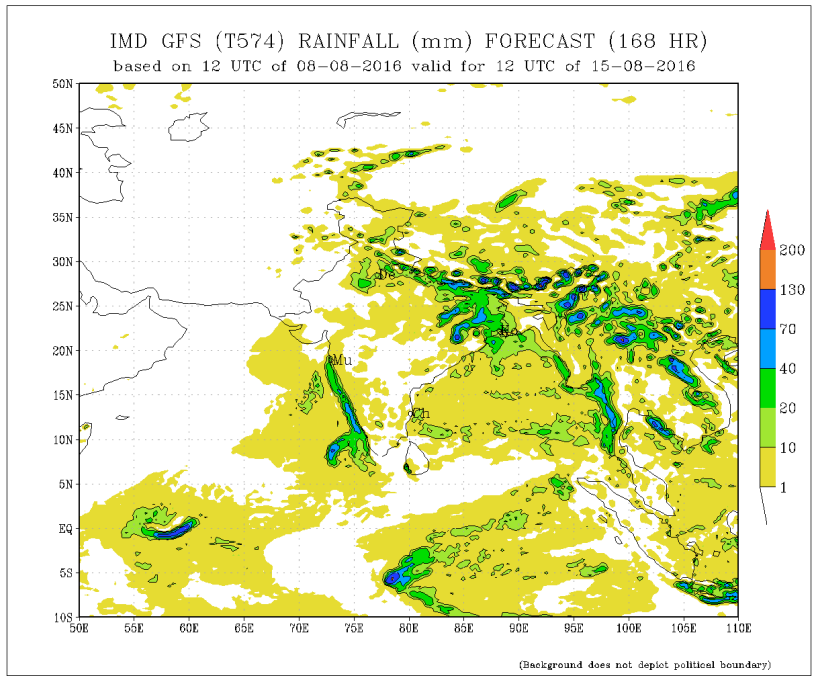






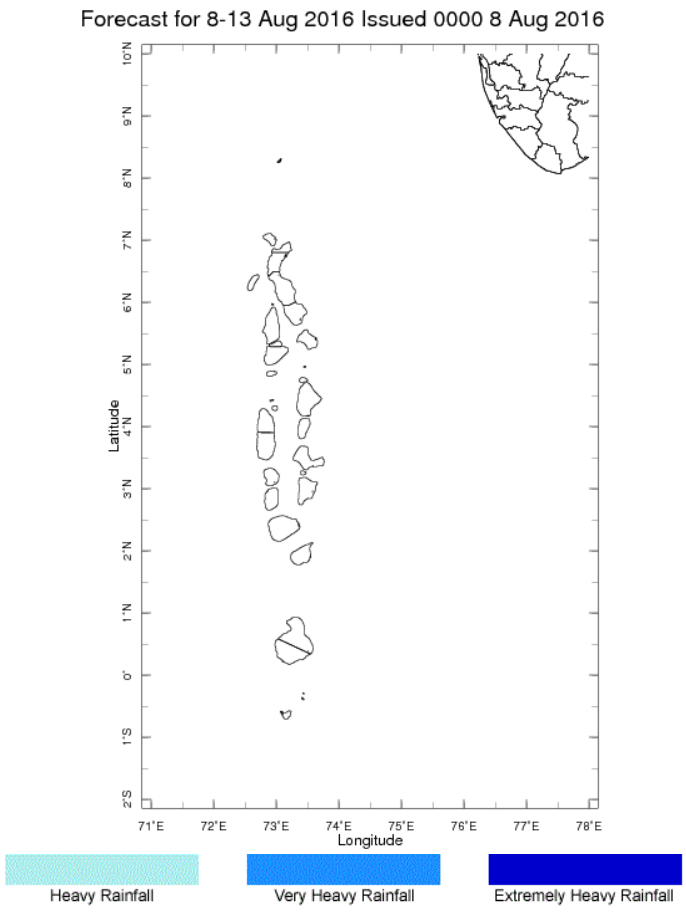




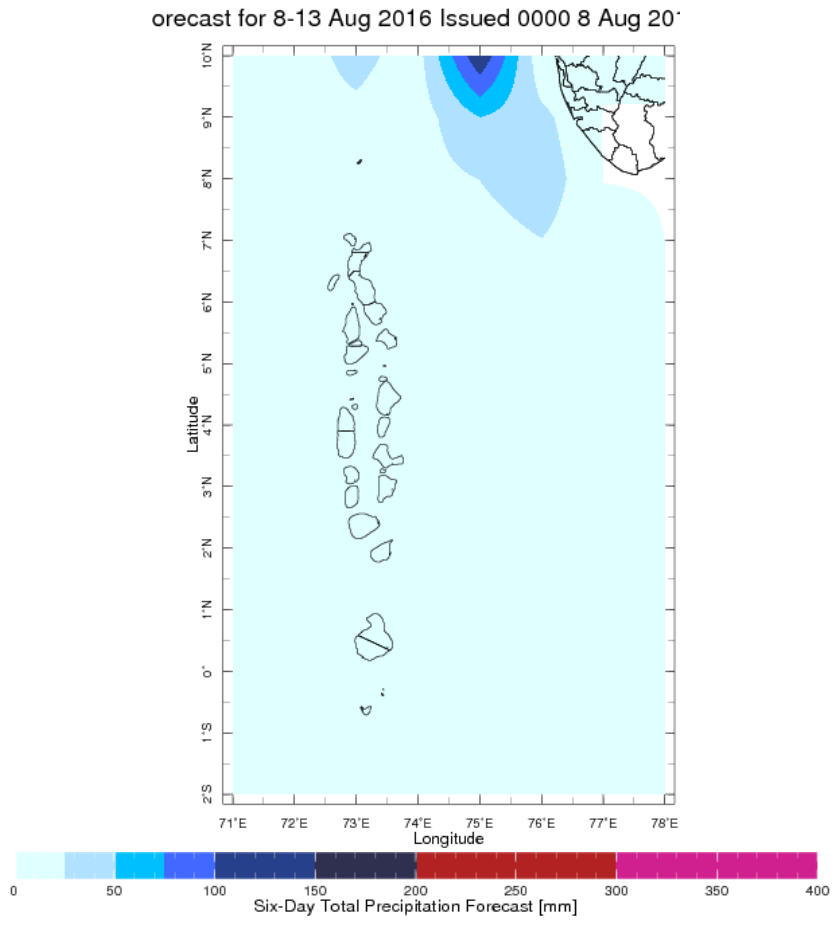


Weekly Rainfall Forecast

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.



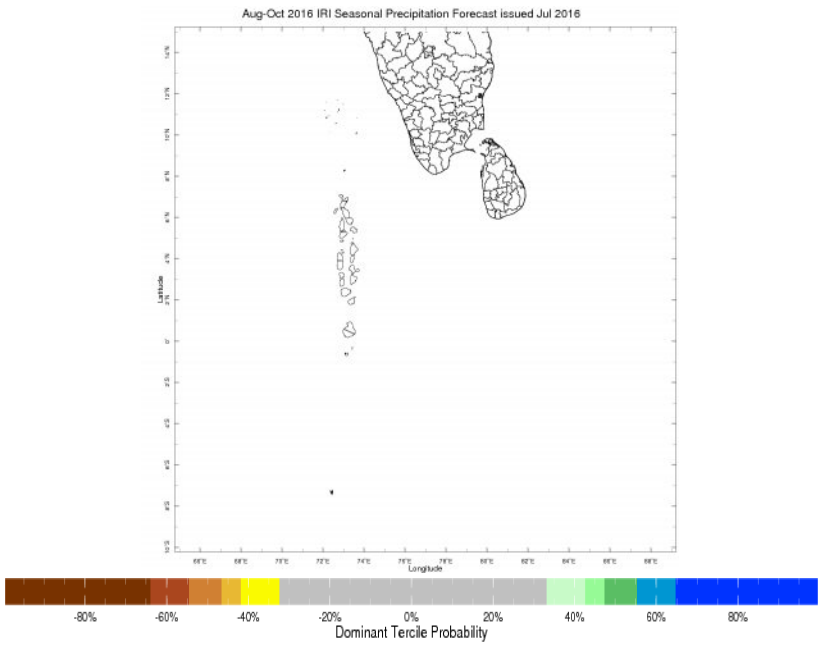
Extreme Rainfall Forecast



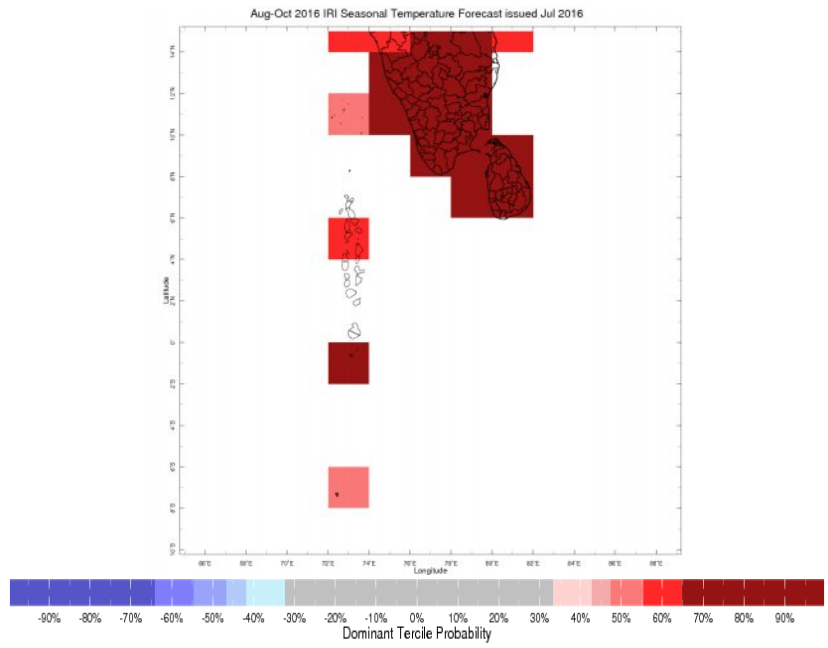
Total Six Day Precipitation Forecast

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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