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Experimental Climate Monitoring and Prediction for the Maldives – May 2015

Prepared by Staff from Foundation for Environment, Climate and Technology, Sri Lanka and USA, Maldives Meteorological Service, and Columbia University
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21 May 2015

PACIFIC SEAS STATE

May 14, 2015

During late April through mid-May 2015 the SST was at a weak to moderate Niño level. The atmospheric variables also indicate an El Niño pattern, including weakened trade winds, low Southern Oscillation Index and excess rainfall in the central tropical Pacific. The consensus of ENSO prediction models indicate weak to moderate El Niño conditions during the May-July 2015 season in progress, likely strengthening during summer and lasting through 2015.

(Text Courtesy IRI)

INDIAN OCEAN STATE

May 21, 2014

0.5 C^0 Warmer than usual Sea surface temperature was observed around Maldives and across the equatorial Indian Ocean

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Highlights

In April 2015 less than average monthly rainfall was observed throughout the Maldives. Usually the rainfall is high in April and the relatively high rainfall in the first two weeks in northern and southern islands was not sufficient to put this above the long-term average. The first week of May saw more than 100 mm rainfall in northern and southern islands and low rainfall in the central islands. The cumulative deficit of rainfall for the past year shows about 25% below normal for the northern islands and close to normal for the southern and central islands. The NOAA CFS models predict up to 50 mm in the next few from 20-25th May. A clean El Nino has onset in the Maldives and this coupled with the warmer Indian Ocean shall lead to warmer months in the next six months. The Central and Northern Islands are likely to have a dry tendency for the next four months followed by a wet tendency from October to December.

Summary

CLIMATOLOGY

Monthly Climatology: Usually the average precipitation in May normally is about 200 mm throughout the country. High precipitation is usually observed closer to south-western coast of India in June and gradually decreases from north to south of Maldives (about 400 mm in northern island and about 200 mm in southern islands). In July the rainfall decreases down to about 150 mm in northern islands and about 200 mm in central and southern islands. Wind direction is usually south-westerly in March and in April northern islands receive south-easterly wind while southern islands receive easterly wind. Strong easterly wind is usually observed in May and in June only northern islands get strong easterly wind. In July the entire country usually do not receive strong wind.

MONITORING

Weekly Rainfall Monitoring: On the 12th of May up to 30 mm rain was observed in northern and southern islands. Then on the 13th rainfall ceased in northern islands while up to 100 mm heavy rain was observed in southern islands. No rainfall was observed on the 14th and 15th and low rainfall was observed on the 16th, 17th and 18th in southern and northern islands.

Monthly and Seasonal Rainfall Monitoring: Less than average rainfall was observed throughout Maldives in April 2015 with less than 100 mm total monthly rainfall observed in the entire country. Rainfall increased until mid-April up to 40 mm in northern islands and about 60 mm in southern Maldives. Thereafter during the next two weeks a decreasing trend in rainfall was observed. In early-May a sudden increase in rainfall was observed in southern and central islands where more than 100 mm rainfall was observed.

PREDICTIONS

Weekly Rainfall Forecast: According to NOAA models, up to 50 mm rainfall is expected in northern and central islands during 20th- 25th May 2015 while only light rainfall expected in southern islands. No unusually heavy rainfall events are expected during this period.

Seasonal Rainfall and Temperature Prediction: As per IRI Multi Model Probability Forecast for June to August, the total 3 month precipitation shall be climatological. The 3 month average temperature has a 50- 60% likelihood for northern islands and about 60% likelihood for southern-most islands to be in the above-normal tercile during this period.

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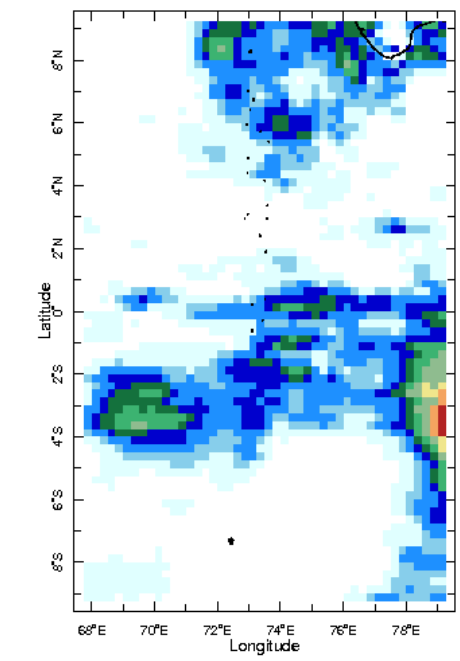
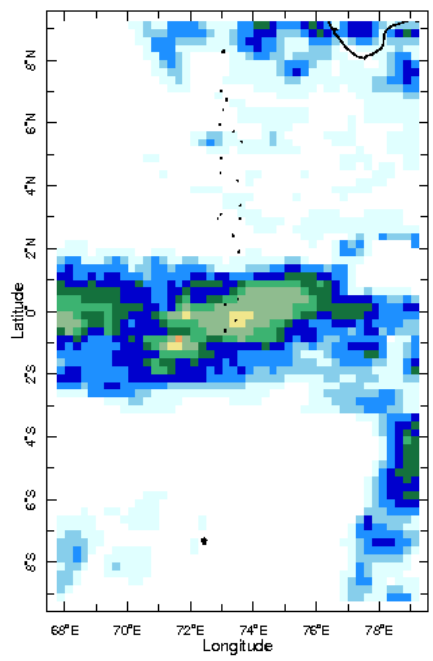
www.climate.lk

Daily Rainfall Monitoring

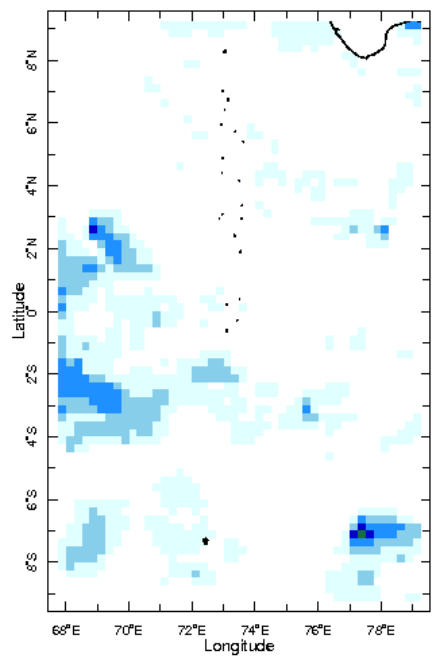
The following figures show the observed rainfall in the last 7 days in Maldives.



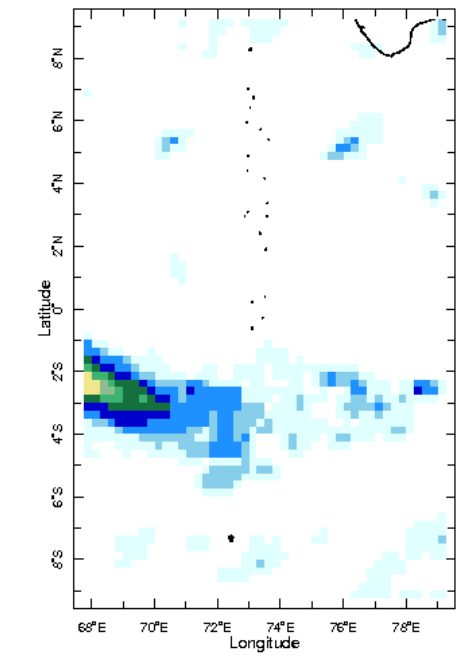
12 May 2015



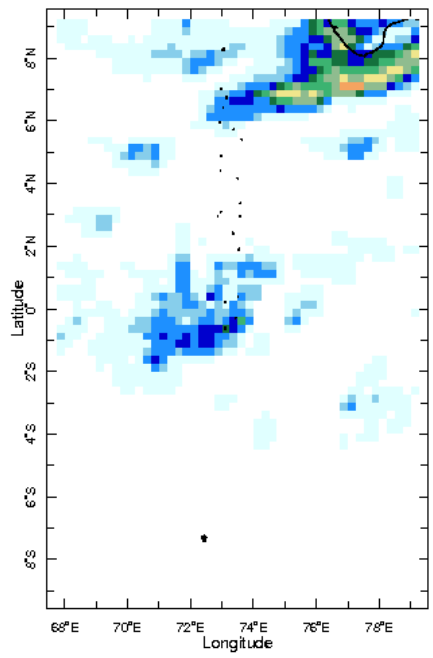
13 May 2015



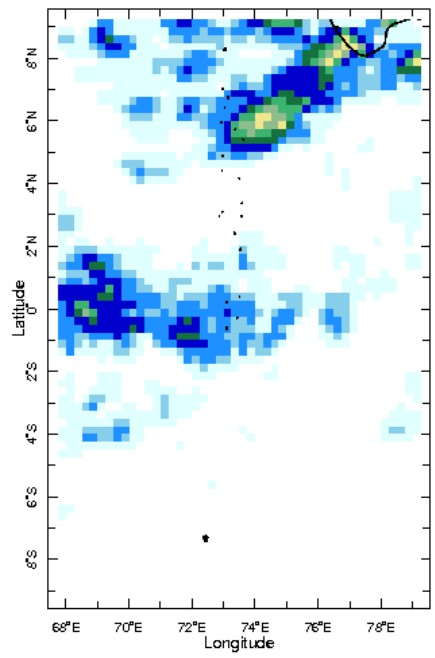
14 May 2015



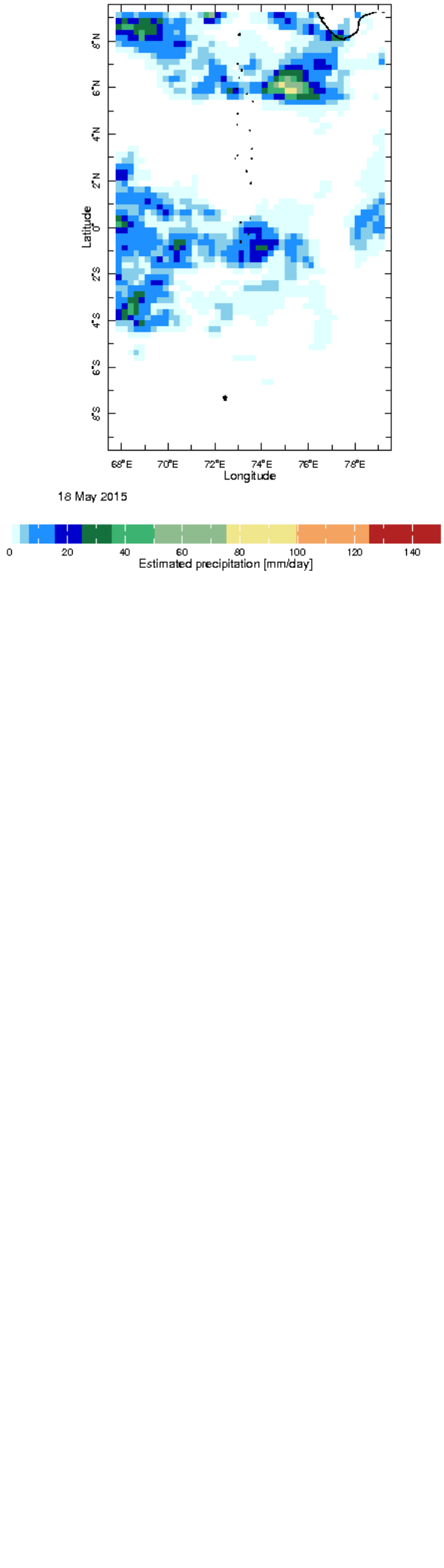
15 May 2015



16 May 2015

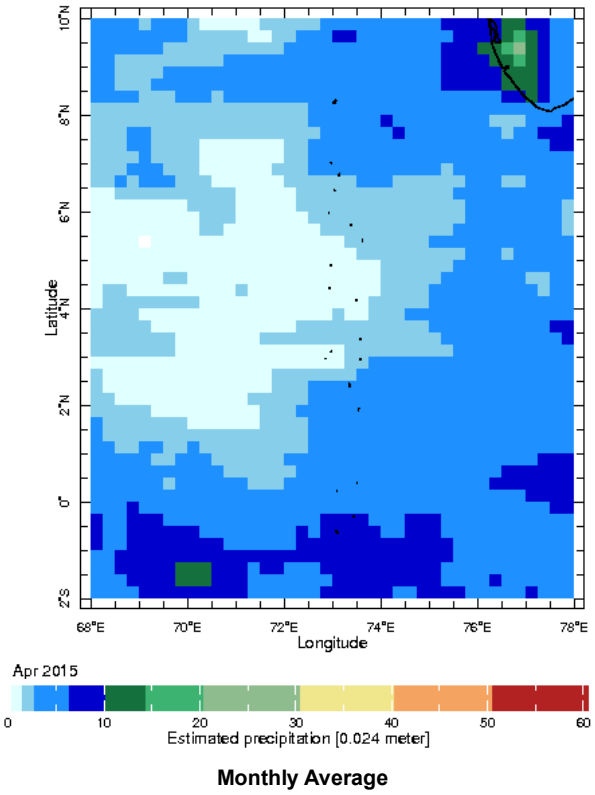


17 May 2015

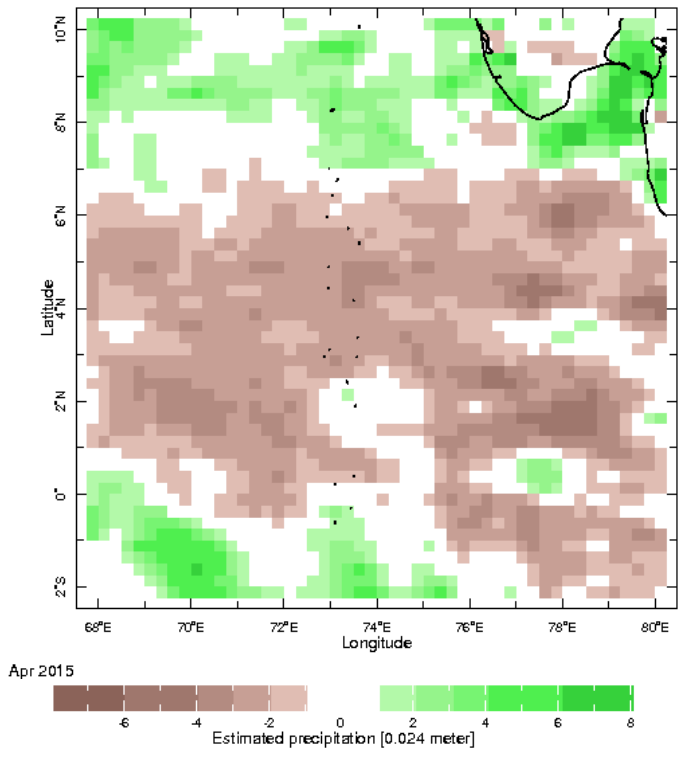

8°N
6°N
4°N
2°N
0°
2°S
4°S
6°S
8°S
Latitude
68°E
70°E
72°E
74°E
76°E
78°E
Longitude
18 May 2015
0
20
40
60
80
100
120
140
Estimated precipitation [mm/day]

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



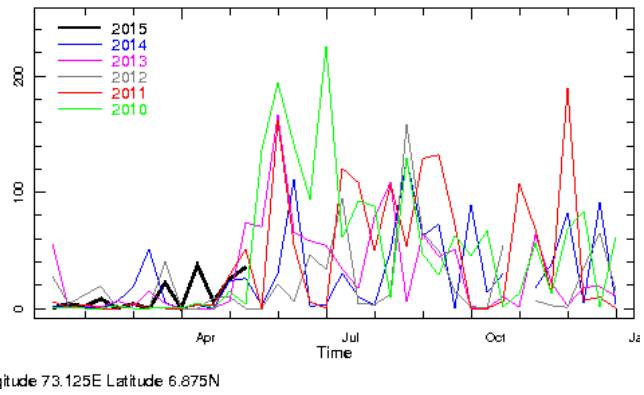
Monthly Average



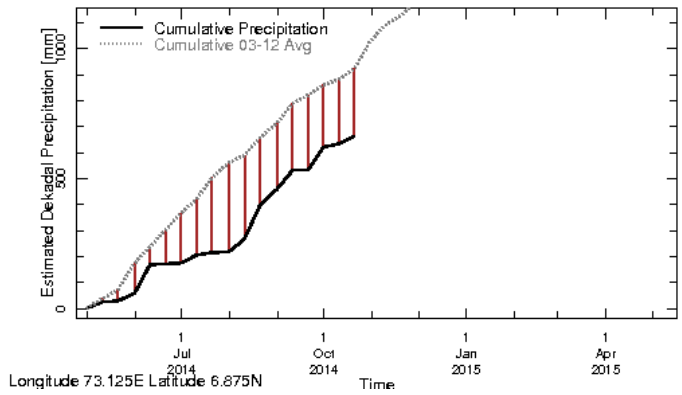
Monthly Anomaly

Monthly and Seasonal Monitoring

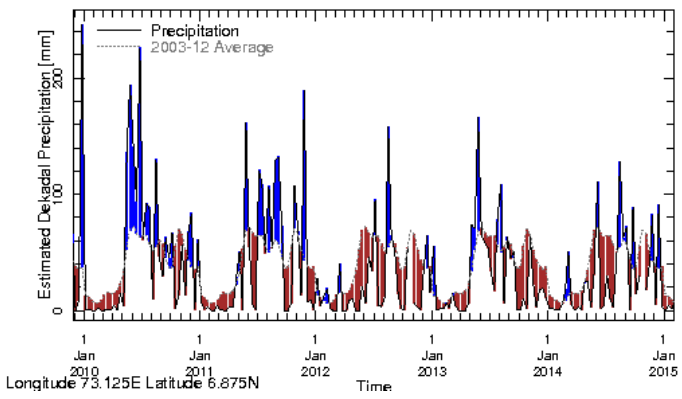
Northern Maldives:



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

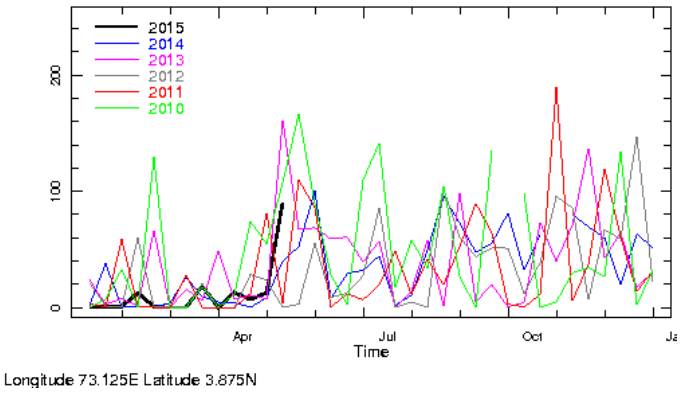


Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.



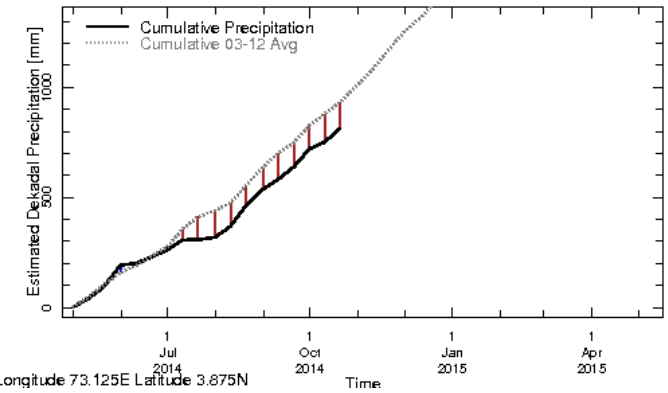
Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

Central Maldives:



Longitude 73.125E Latitude 3.875N

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



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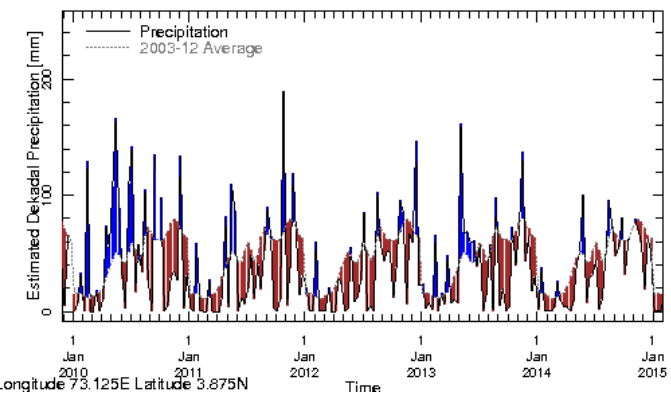
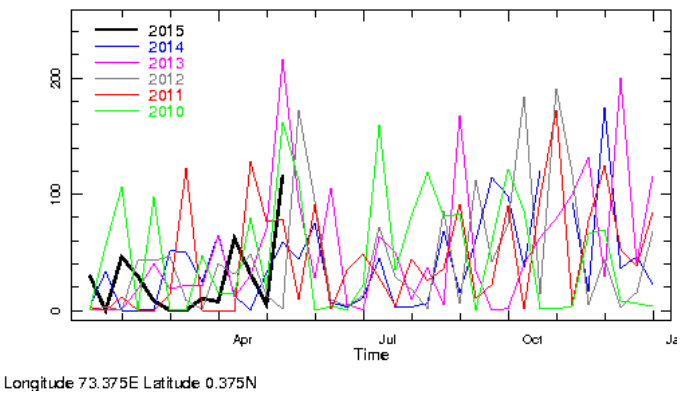


Longitude 73.125E Latitude 3.875N

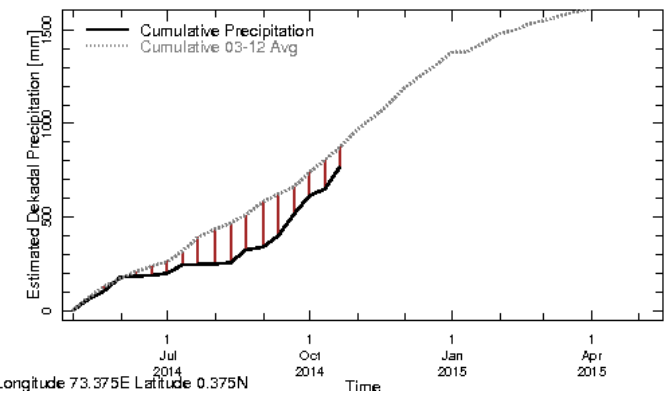
Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

Southern Maldives:



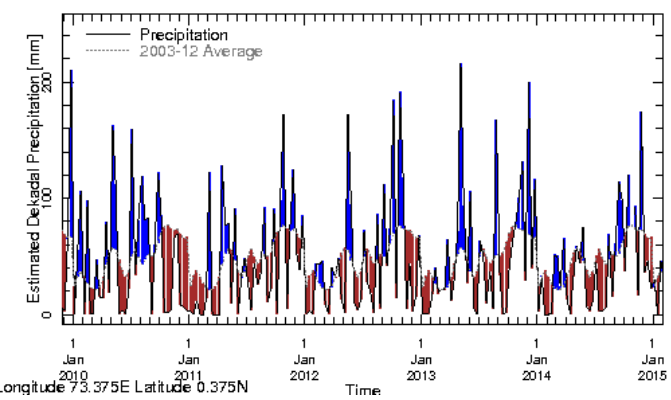
Longitude 73.375E Latitude 0.375N

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



Longitude 73.375E Latitude 0.375N

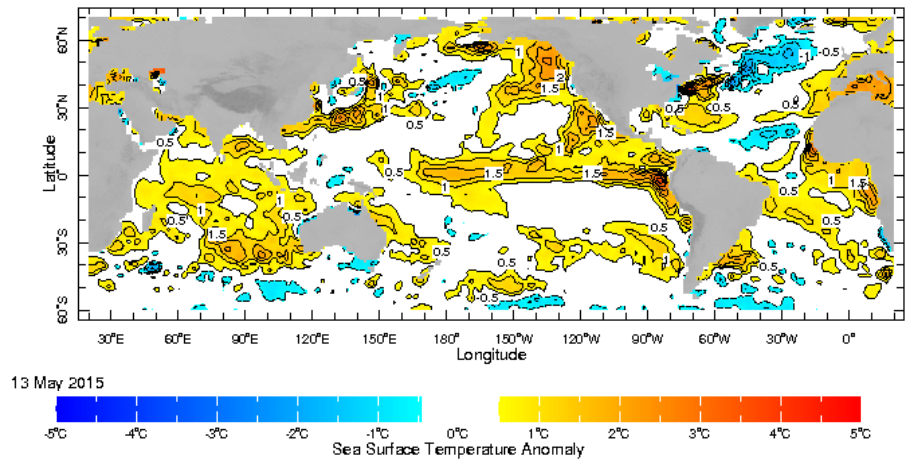
Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.



Longitude 73.375E Latitude 0.375N

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

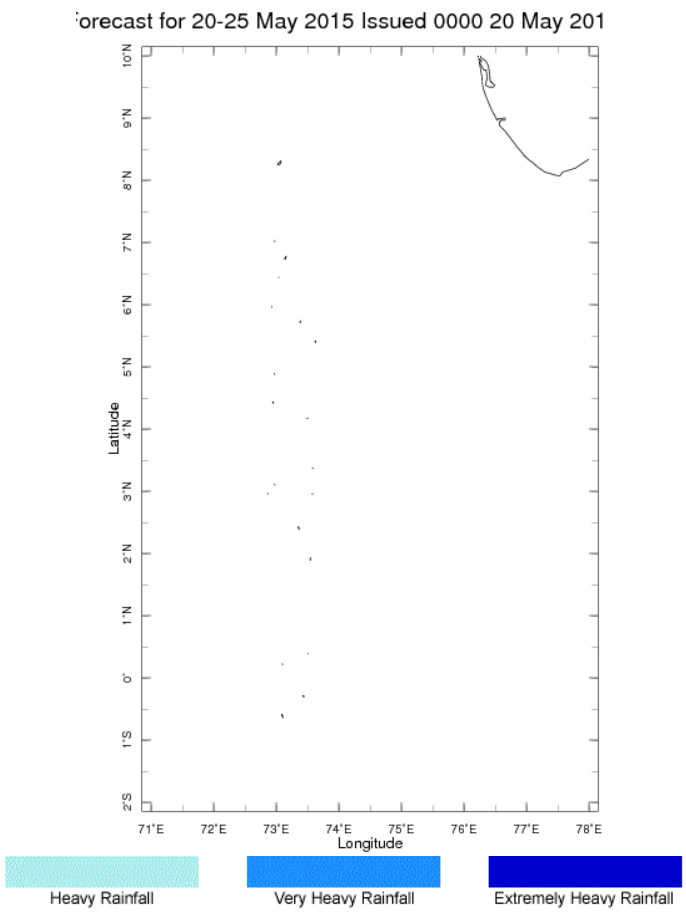
Ocean Surface Monitoring



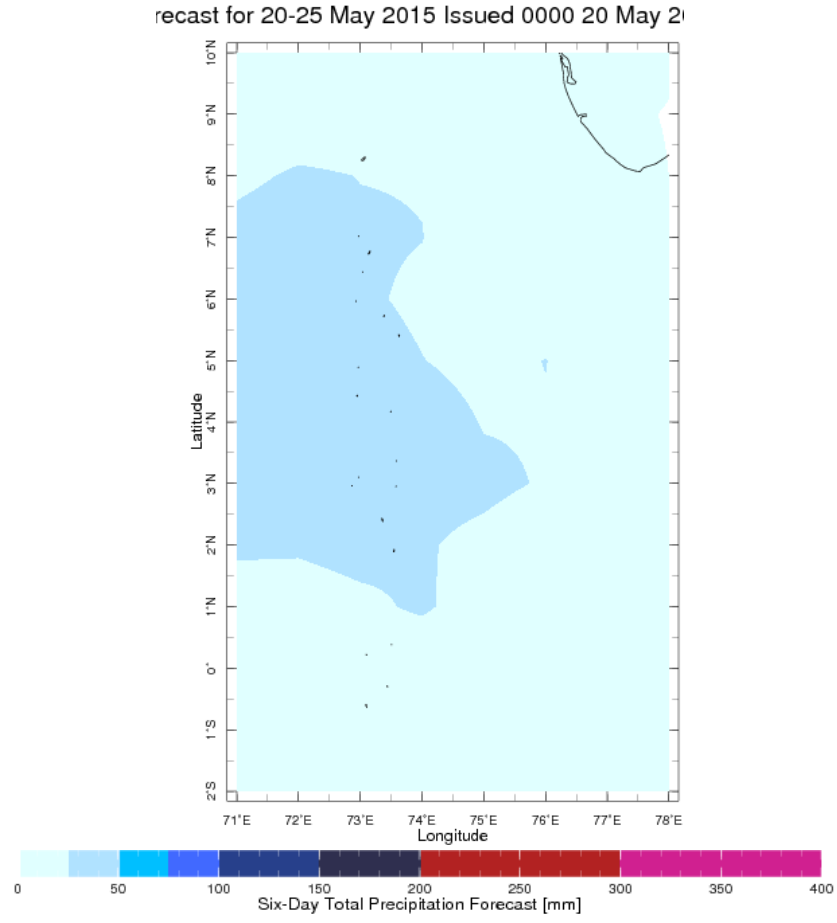
WORLDBATH topography

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.



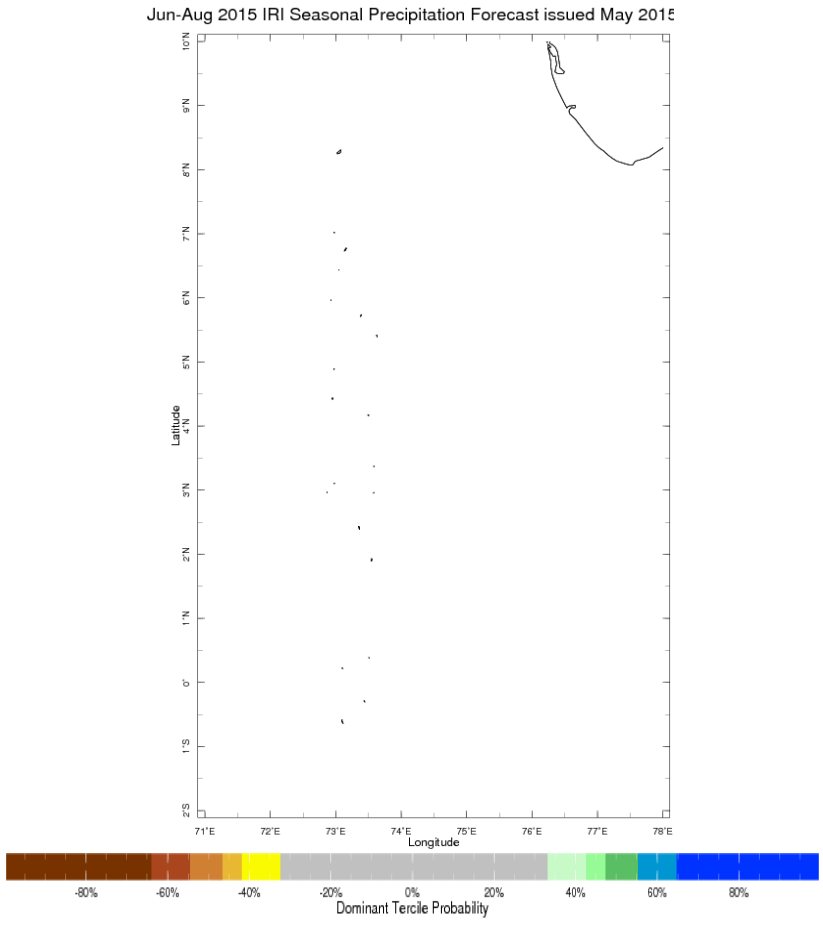
Extreme Rainfall Forecast



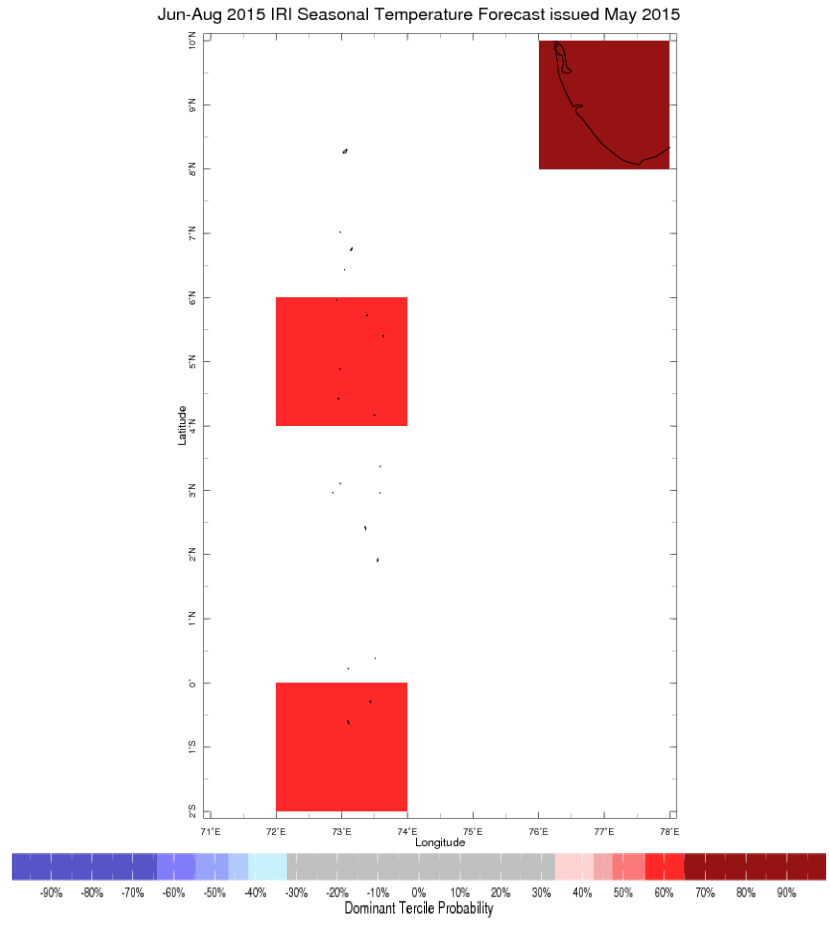
Total Six Day Precipitation Forecast

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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