

Experimental Climate Monitoring and Prediction for the Maldives

–December 2014

Prepared by Staff from Foundation for Environment, Climate and Technology, Sri Lanka and USA, Maldives Meteorological Service, and International Research Institute for Climate and Society

22 December 2014

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PACIFIC SEAS STATE

December 18, 2014

During November through early December the SST exceeded thresholds for weak Niño conditions, although only some of the atmospheric variables indicate an El Niño pattern. Most of the ENSO prediction models indicate weak El Niño conditions during the December-February season in progress, continuing through most or all of northern spring 2015.

(Text Courtesy IRI)

INDIAN OCEAN STATE

Dec 13, 2014

0.5°C above average Sea surface temperature was observed around Maldives.

MJO STATE

MJO is in phase 3 and shall enhance the rainfall

Highlights²

Above average rainfall was observed in southern islands of Maldives where up to 190 mm rainfall was observed at the end of November and this is the highest rainfall observed in this year in any part of the country. The rest of the country received below average rainfall during November. Very heavy rainfall is expected in the sea west of Maldives in the next few days. Most of ENSO prediction models indicate a weak El Niño condition during December to February.

Summary²

CLIMATOLOGY

Monthly Climatology: Rainfall in the southern islands shall decrease to 200 mm/month in November, December and January. In February the rainfall further decreases in the entire Maldives. The same amount of rainfall is received in March with lesser wind.

MONITORING

Weekly Monitoring: During 14th - 16th December, light rainfall was only observed in northern-most and southern-most islands of Maldives. On the 17th, rainfall up to 10 mm was observed in central islands. An increase in rainfall was observed on 18th and 19th with observed rainfall reaching up to 50 mm throughout the country. Rainfall up to 140 mm was observed in the sea, east of Maldives and up to 120 mm in the sea, west of Maldives.

Monthly and Seasonal Monitoring: During November higher average monthly rainfall (up to 15 mm/day) was observed in southern islands of Maldives compared to that of northern and central islands which reached up to 10 mm. Comparing these averages with historical averages, the rainfall received by the southern islands was observed to be above average while it was below average in northern and southern islands. As a result the rainfall deficit in northern and southern islands has further increased. Southern islands received highest rainfall received this year at the end of November which was up to 190 mm.

PREDICTIONS

Weekly Rainfall Forecast: According to NOAA models, rainfall up to 50 mm is expected during 21st- 26th December. In central islands this amount shall reach up to 75 mm. During this period extremely heavy rainfall (excess of 300 mm) is expected in the eastern sea of Maldives closer to Sri Lanka.

Seasonal Rainfall and Temperature Prediction: As per IRI Multi Model Probability Forecast for December to February, the total 3 month precipitation shall be near-normal tercile with a 40% probability. The 3 month average temperature has a 60- 70% likelihood of being in the above-normal tercile during this period.

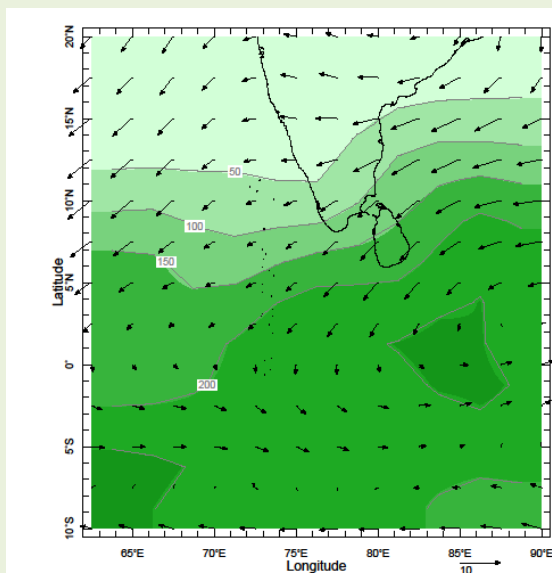
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 - e. Weekly Average SST Anomalies
3. Rainfall Predictions
 - a. Weekly Predictions from NOAA/NCEP
 - b. Seasonal Predictions from IRI¹

¹ International Research Institute for Climate and Society.

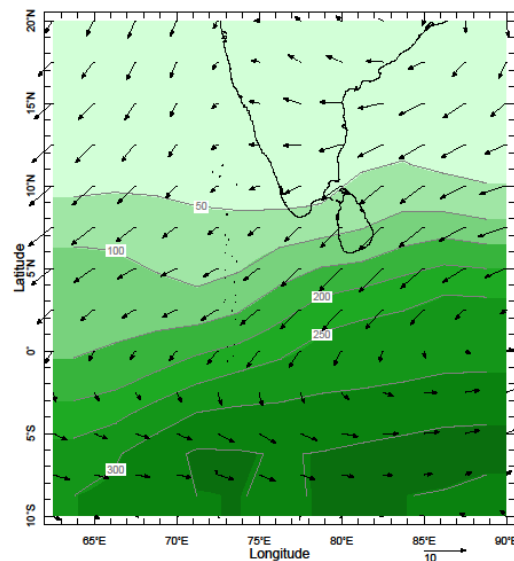
1). Monthly Climatology (CAM5-OPI):

a) Rainfall: Maps: December, January, February and March



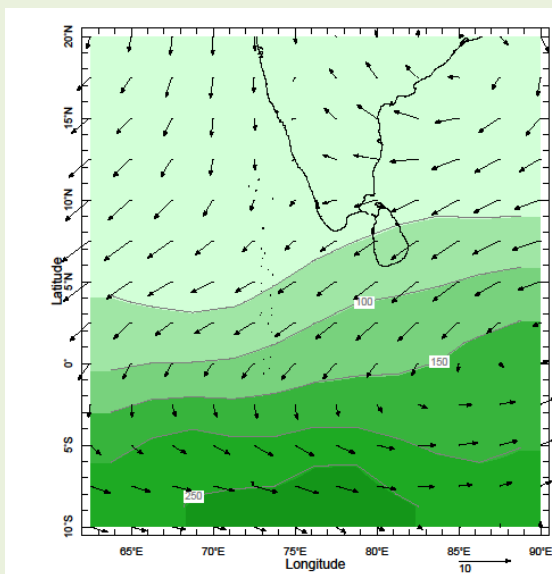
Time Dec Pressure 925.0 mb

December



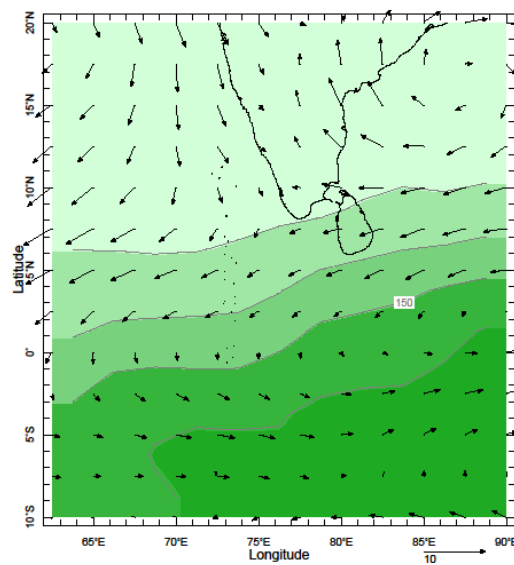
Time Jan Pressure 925.0 mb

January



Time Feb Pressure 925.0 mb

February

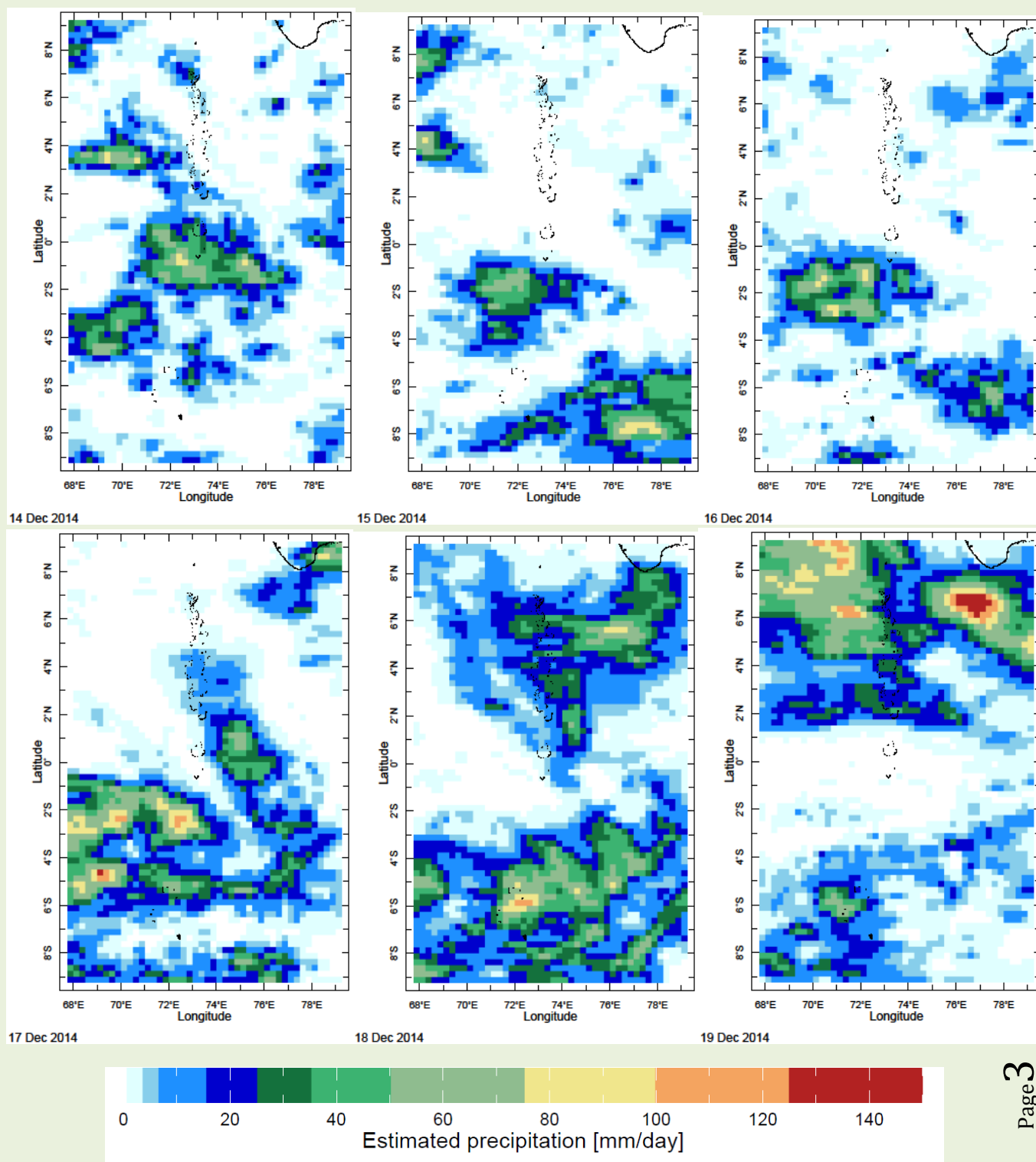


Time Mar Pressure 925.0 mb

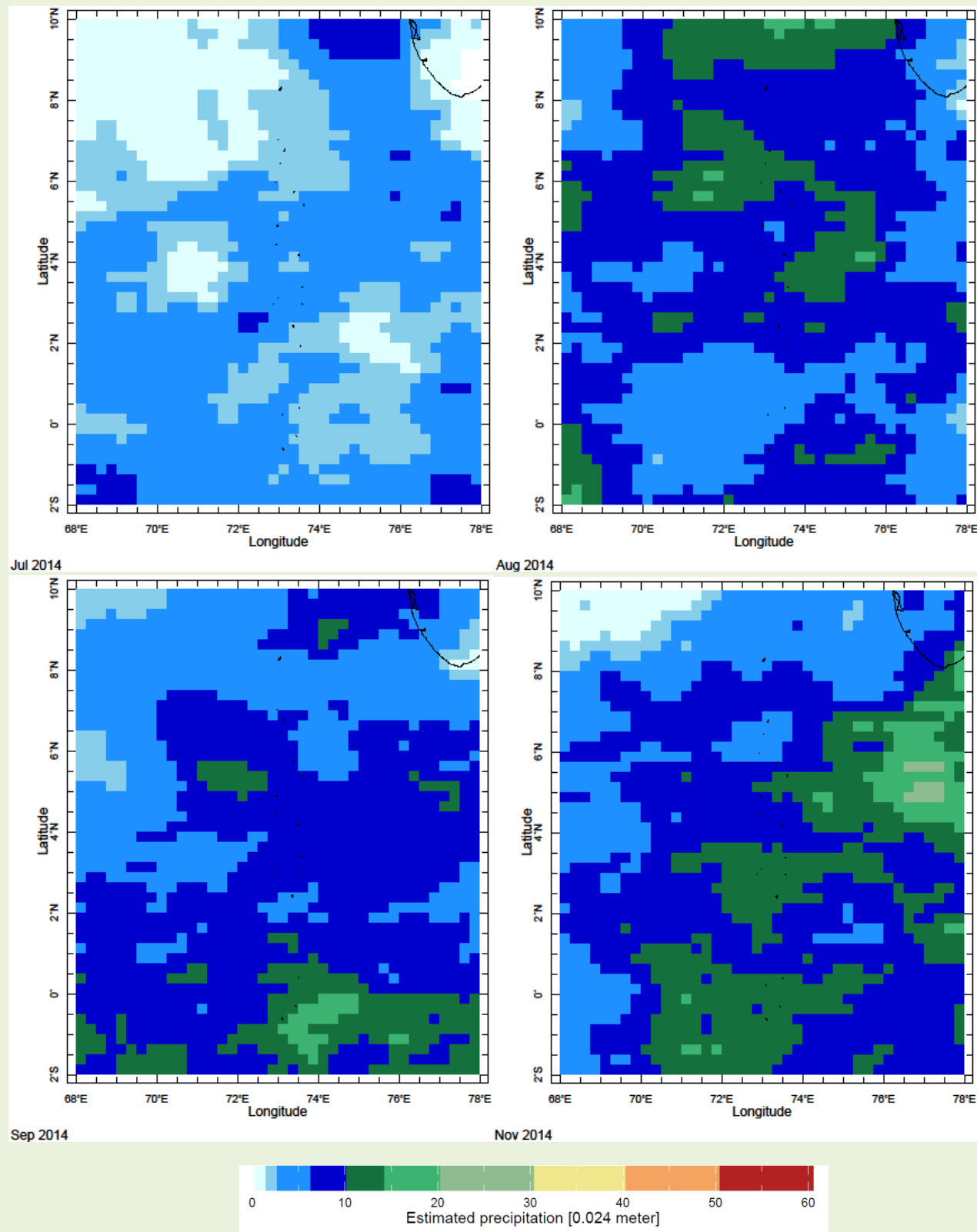
March

2) Rainfall Monitoring

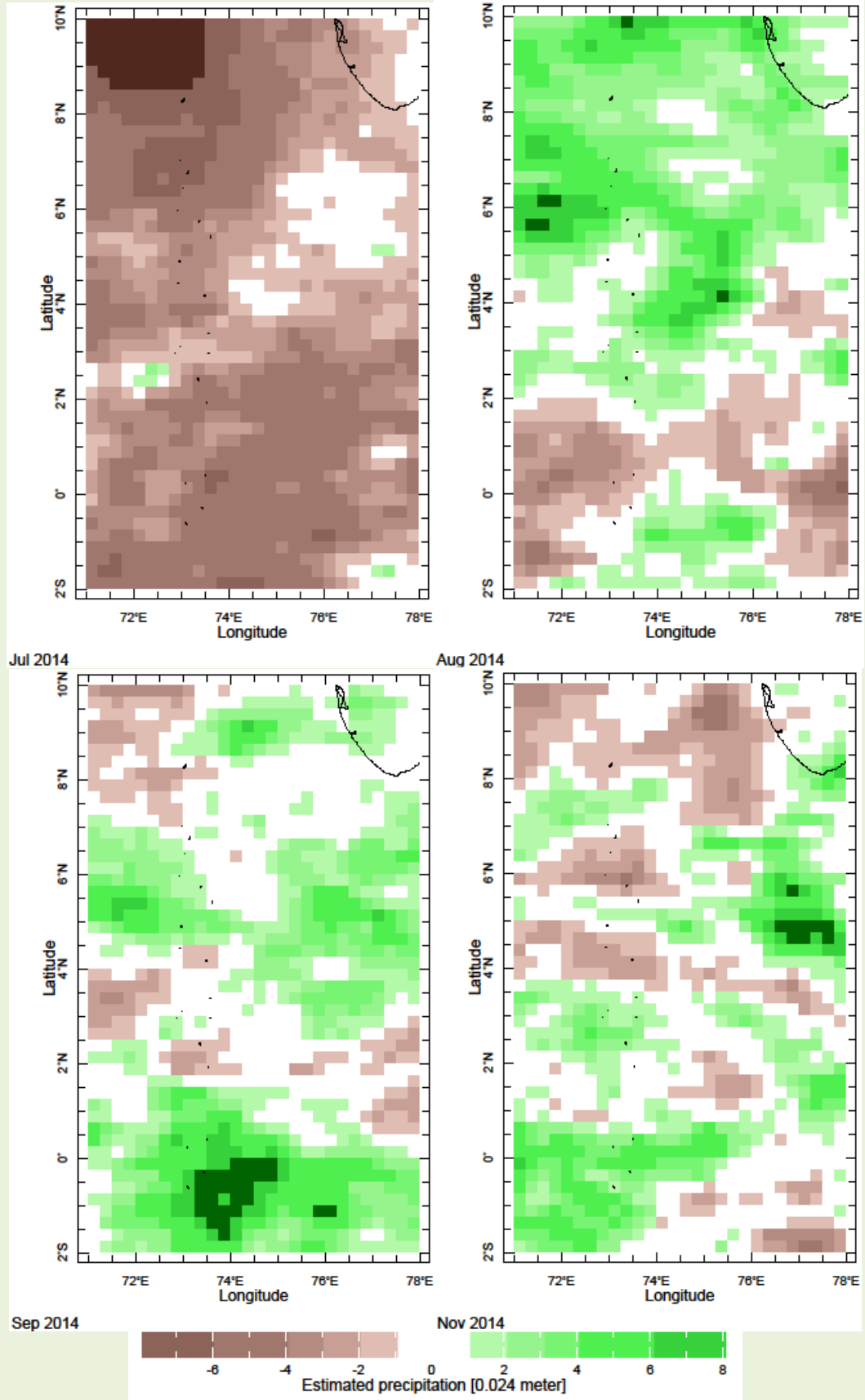
a) Daily Satellite Derived Rainfall Estimate Maps 14th – 19th December, 2014 (Left-Right, Top-Bottom)



b) Monthly Rainfall (July- November 2014), Derived from Satellite Rainfall Estimates



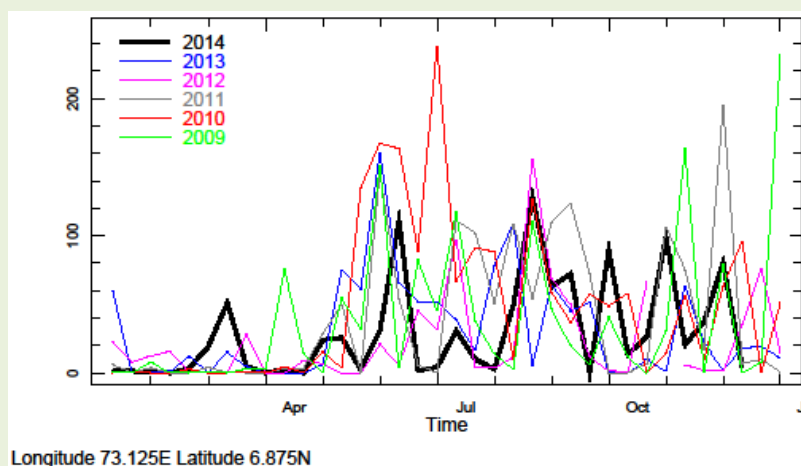
c) Monthly Average Precipitation Anomaly July- November 2014



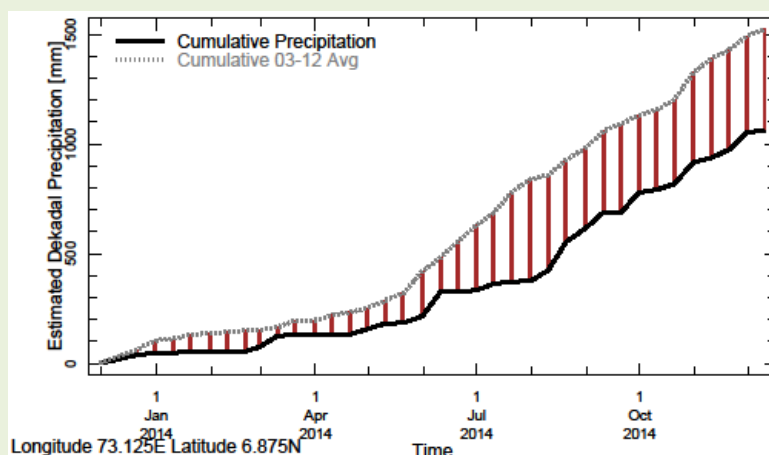
d) Seasonal to Annual Rainfall Monitoring

i) For Northern Maldives

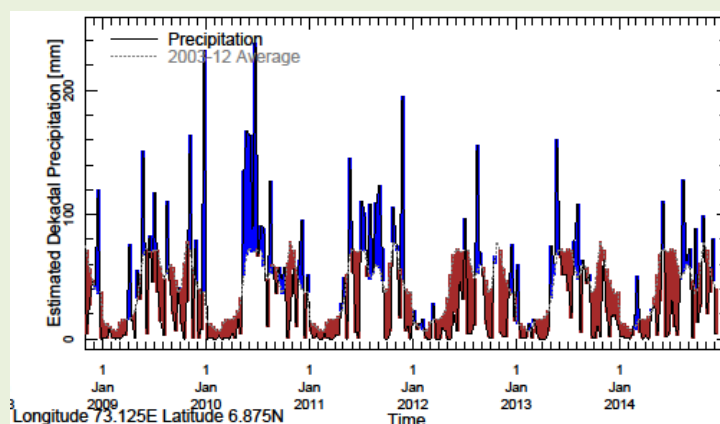
1) Rainfall in 2014 (black) compared to rainfall in previous 5 years



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

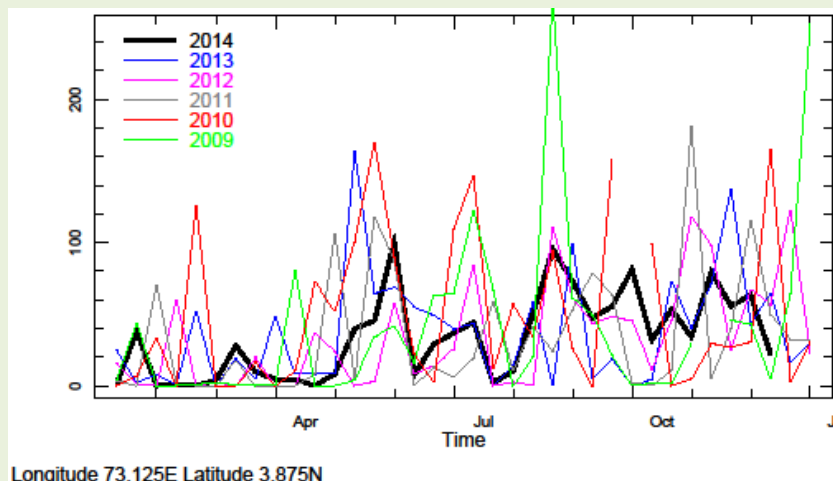


3) Rainfall for the past 5 years with above-average (compared to the last 8 years) hatched in blue and below normal in brown.

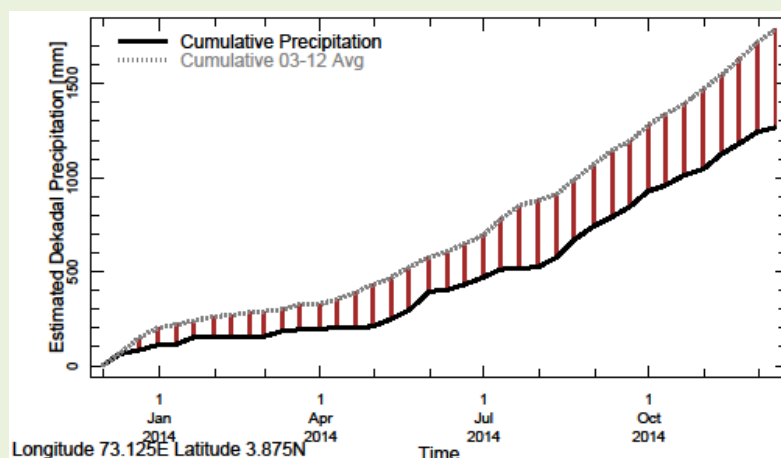


ii) For Central Maldives

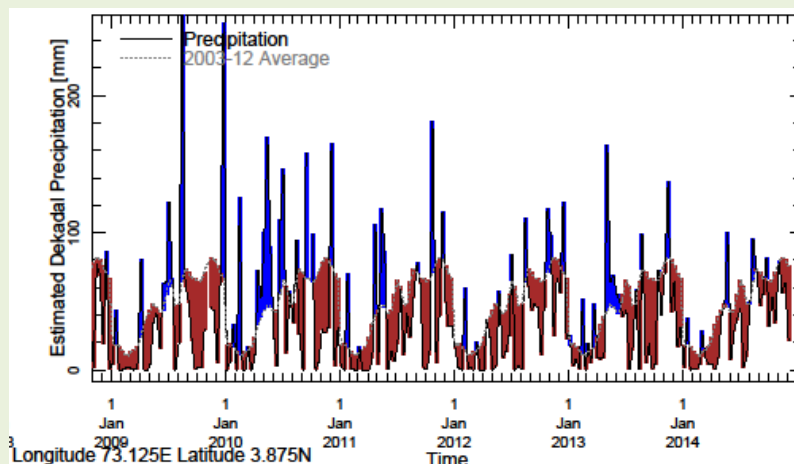
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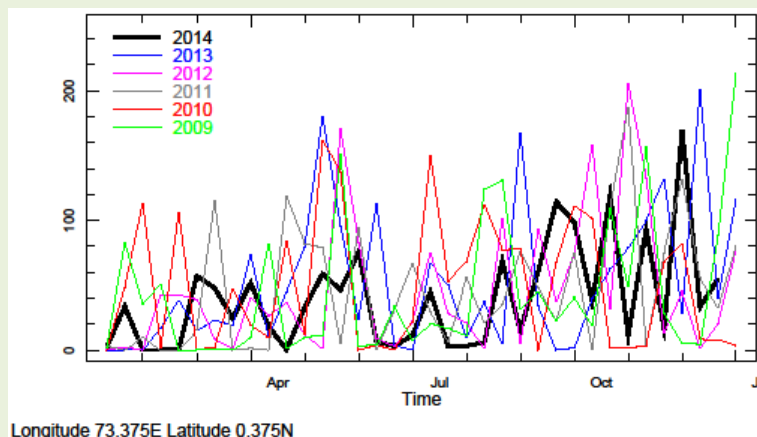


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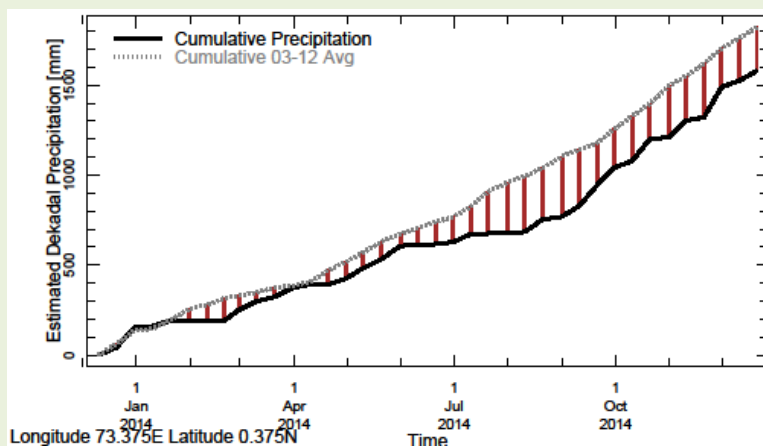


iii) For Southern Maldives

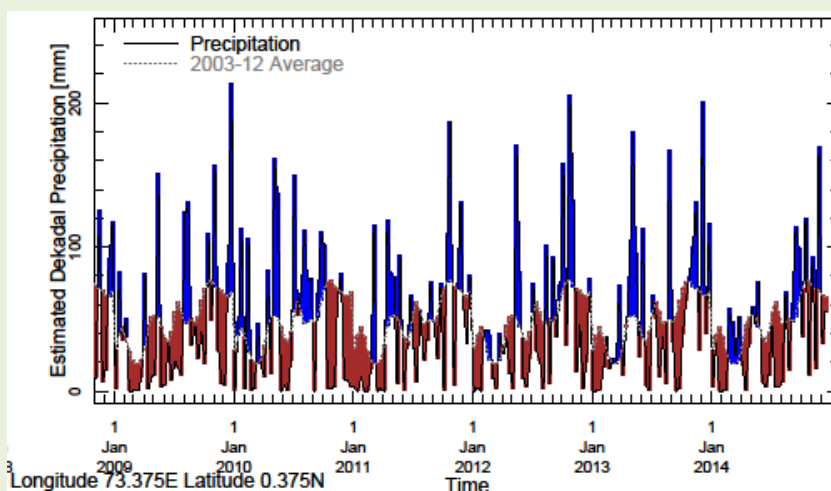
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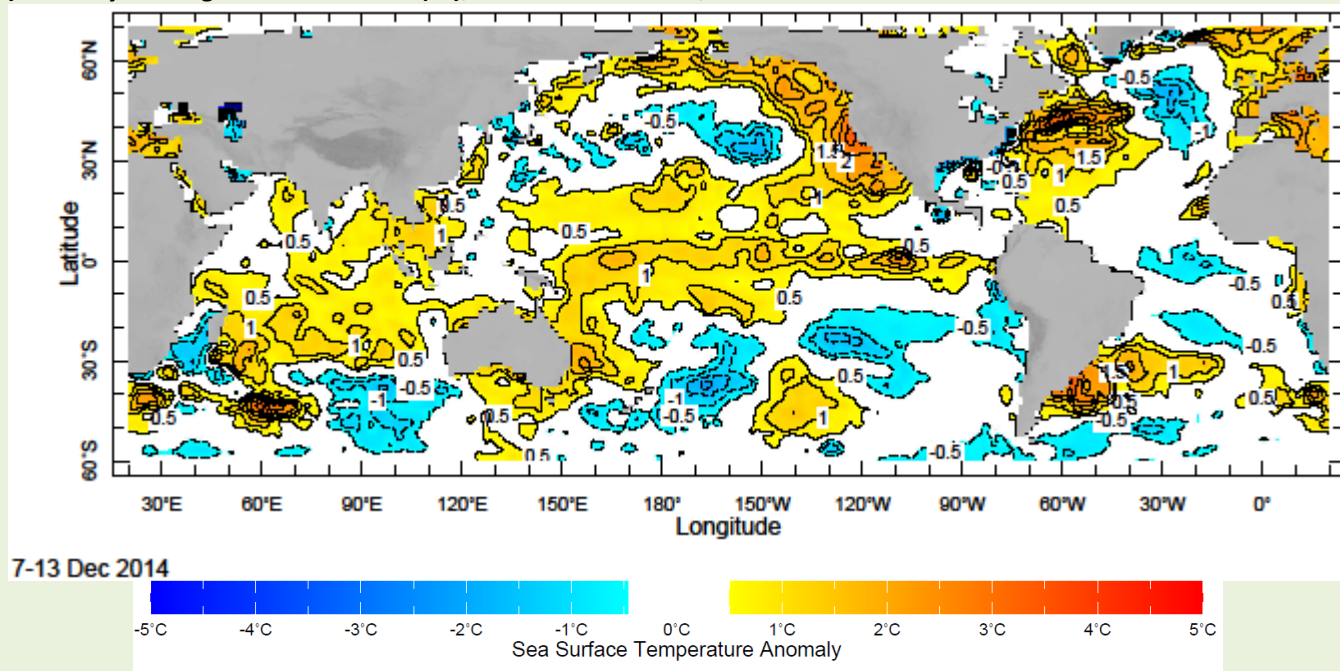
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3) Rainfall for the past 5 years with above-average (compared to the last 8 years) hatched in blue and below normal in brown.



e) Weekly Average SST Anomalies ($^{\circ}\text{C}$), 7th- 13th December, 2014



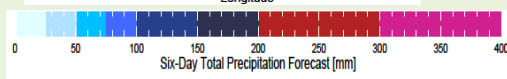
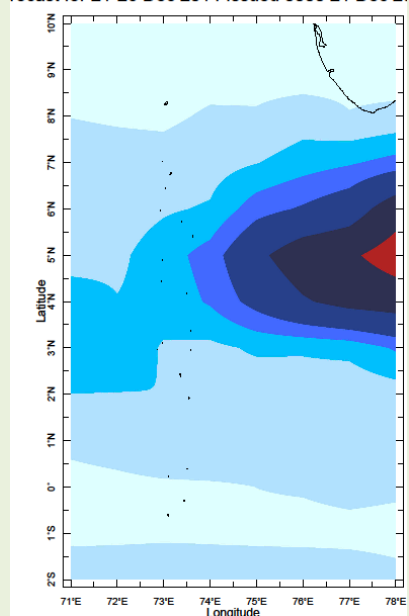
Data Source: NCEP, Environmental Monitoring Center

Base Period of Climatology: 1971- 2000

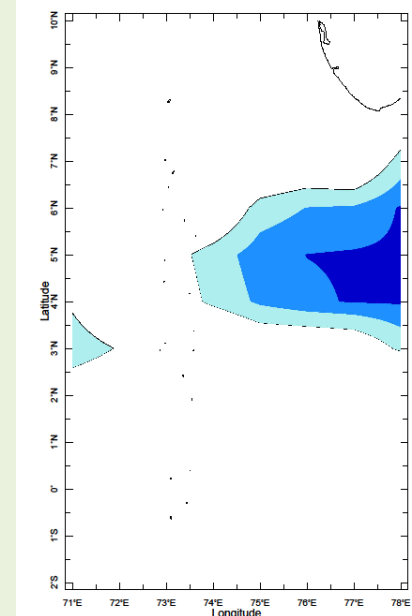
3). Predictions

a) Weekly Precipitation Forecast for 21st - 26th December, 2014: Issued 21nd December, 2014

recast for 21-26 Dec 2014 Issued 0000 21 Dec 2014



forecast for 21-26 Dec 2014 Issued 0000 21 Dec 2014



b) Seasonal Rainfall and Temperature Predictions from IRI

