

Week of
29 Oct - 5 Nov
2021

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

HIGHLIGHTS

Rainfall Prediction



• Heavy rainfall is predicted in Central, Northern, North Western, Western and Sabaragamuwa provinces during 29th Oct - 3rd Nov. Greater likelihood of wet tendency is predicted for Sri Lanka from Nov to Jan.

Monitored Rainfalls



• Heavy rainfall was experienced in Eastern, Northern, North Central, Sabaragamuwa and Western provinces with max of 166.7 mm in Anuradhapura district on 20th Oct.

Monitored Wind



• From 20th - 27th Oct, up to 25 km/h Westerlies to Southwesterlies were experienced across the island.

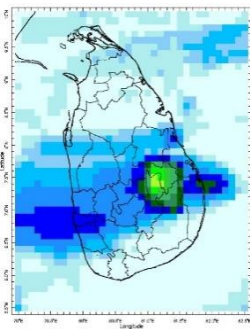
Monitored Sea Surface



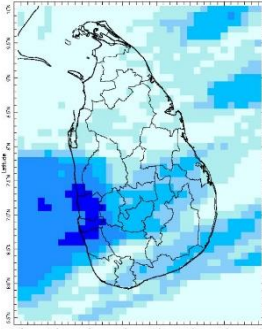
• Sea surface temperatures were neutral around the entire island.

Monitoring Rainfall

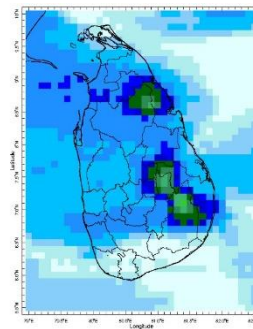
Daily Estimates for Rainfall from 20th – 27th October



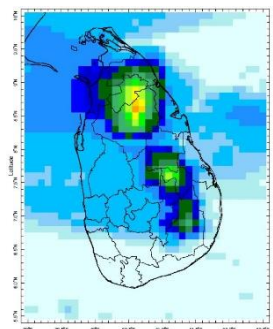
20 October



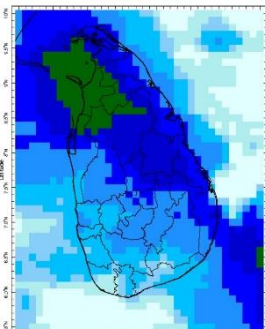
21 October



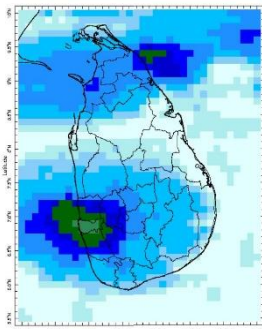
22 October



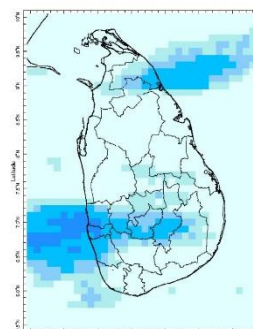
23 October



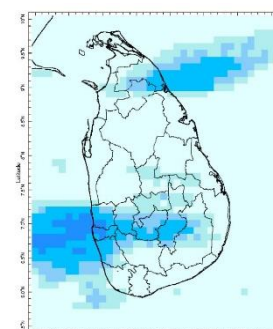
24 October



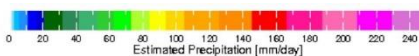
25 October



26 October



27 October



Federation for
Environment, Climate
& Technology

Federation for Environment, Climate and Technology

c/o, Maintenance Office, Mahaweli Authority, Digana Village, Rajawella, Sri Lanka.

Phone (+94) 81-2376746, (+94) 81-2300415

Web Site: www.fect.lk

E mail: info@fect.lk

LI: www.linkedin.com/in/fectlk

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Ocean State *(Text Courtesy IRI)*

Pacific sea state: October 20, 2021

Equatorial SSTs were near-to-below average across most of the equatorial Pacific Ocean, and were above average in the western Pacific Ocean in the mid-October. A large majority of the model forecasts predict a transition from ENSO-neutral to La Niña is favored in the next couple of months and La Niña to continue through the Northern Hemisphere fall and winter.

Indian Ocean State

Sea surface temperatures were neutral around the entire island.

Predictions

Rainfall

14-day prediction: NOAA NCEP models

From 28th October – 3rd November:

Total rainfall by Provinces:

Rainfall	Provinces
125 mm	Northern
115 mm	Central, North Western, Sabaragamuwa, Western
95 mm	Eastern, North Central, Southern, Uva

From 4th November – 10th November:

Total rainfall by Provinces:

Rainfall	Provinces
125 mm	North Western, Sabaragamuwa, Western
115 mm	Central, Northern
95 mm	North Central, Southern, Uva
85 mm	Eastern

MJO based OLR predictions

For the next 15 days:

MJO shall be active during 28th October – 1st November giving slightly enhanced rainfall and neutral during 2nd – 11th November.

Interpretation

Monitoring

Rainfall: During the last two weeks, there had been heavy rainfall over the following Provinces: Eastern, Northern, North-Central, Sabaragamuwa and Western.

Wind: Westerly to South westerly winds prevailed in the sea area and around the island at the beginning of last week and towards the latter part of the week North Easterly winds were experienced by Eastern Sri Lanka while the rest experienced North Westerly winds.

Temperatures: The temperature anomalies were in between 1⁰C – 3⁰C in Central, Sabaragamuwa and Uva provinces while near-neutral for the rest of the country last week, driven by the warm SST's.

Predictions

Rainfall: During the next week (29th October – 3rd November) heavy rainfall is predicted for Central, Northern, North Western, Sabaragamuwa and Western provinces.

Temperatures: The temperature remains slightly normal during 30th October – 7th November for the entire island.

Teleconnections:

La Nina -The SST forecast indicates that ENSO-neutral are present and a transition from ENSO-neutral to La Niña is favored in the next couple of months.

MJO shall be active during 28th October – 1st November giving slightly enhanced rainfall and neutral during 2nd – 11th November.

Seasonal Precipitation:

The precipitation forecast for the Nov-Jan season show enhanced probabilities of above-normal precipitation over Sri Lanka.

Understanding the Forecast

	Rainfall (During 24 hours of period)
Light Showers	Less than 12.5 mm
Light to Moderate	Between 12.5 mm and 25 mm
Moderate	Between 25 mm and 50 mm
Fairly Heavy	Between 50 mm and 100 mm
Heavy	Between 100 mm and 150 mm
Very Heavy	More than 150 mm

Tropical Climate Guarantee, Federation of Environment, Climate and Technology, Columbia University Water Center, ¹ International Research Institute for Climate and Society, , Earth Institute at Columbia University, New York.



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Weekly Climate Bulletin for Sri Lanka

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2. Predictions

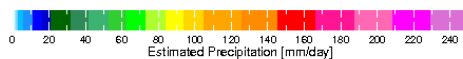
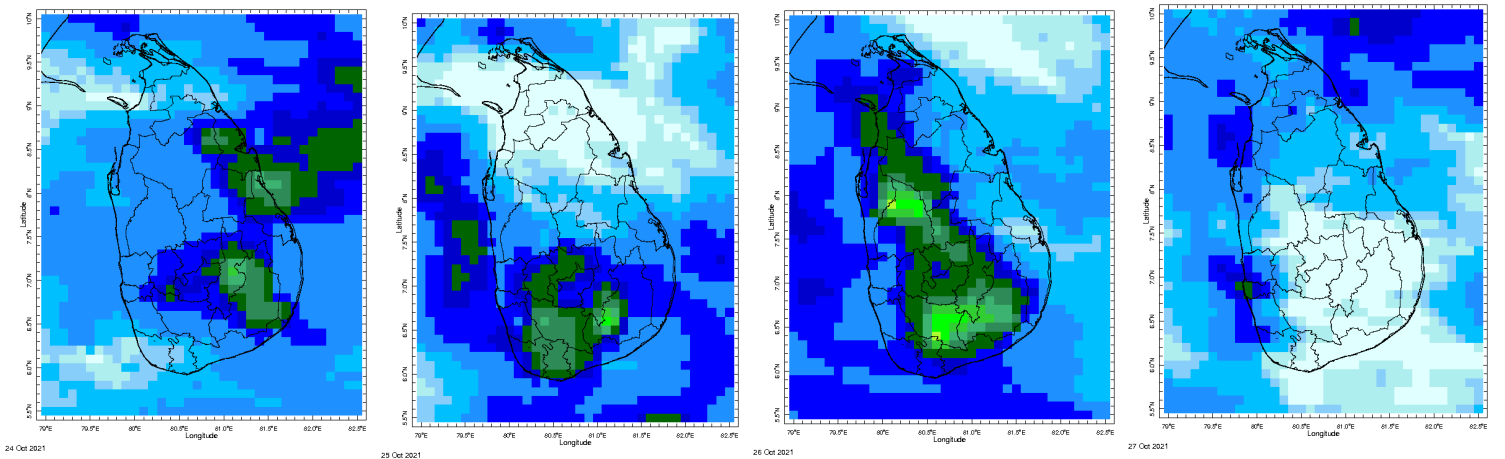
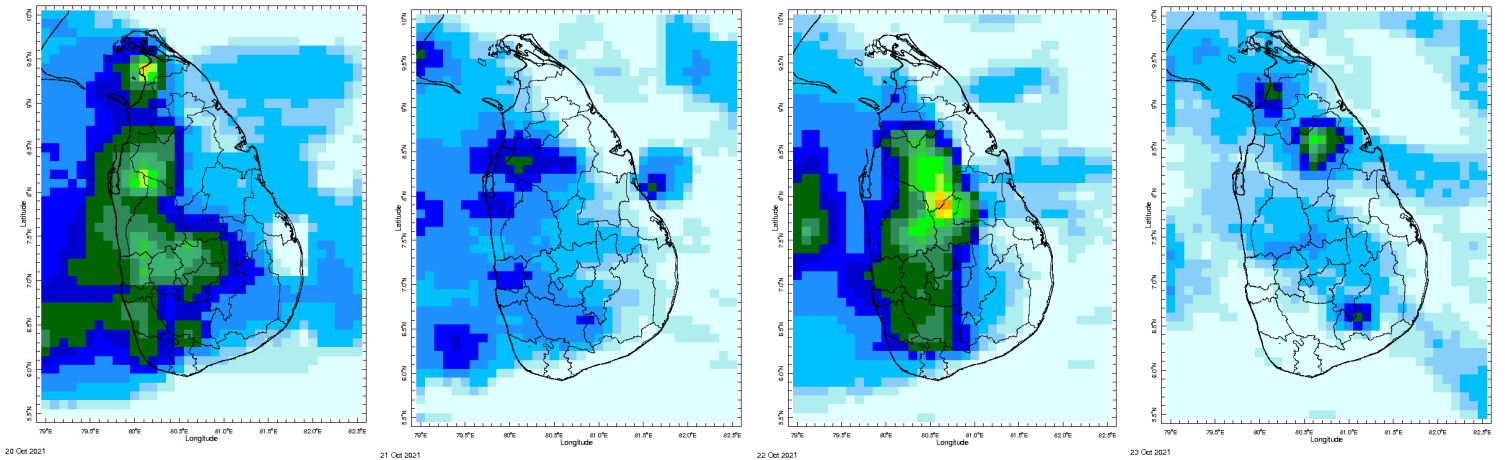
- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
- b. GFS (T574) Model Rainfall Forecast from RMSC New Delhi
- c. MJO Related OLR Forecast
- d. Weekly Temperature Forecast
- e. Weekly Wind Forecast
- f. Seasonal Predictions from IRI



MONITORING

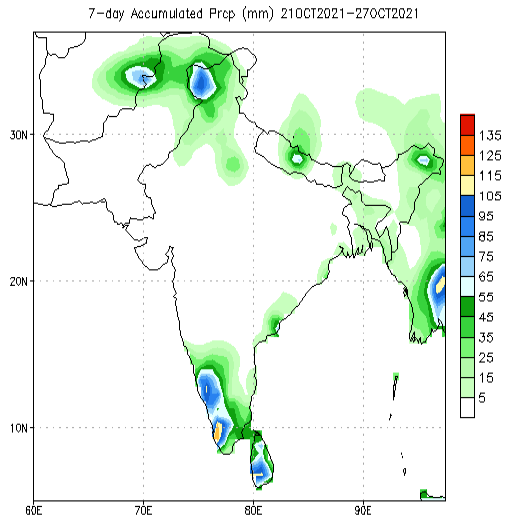
Daily Rainfall Monitoring

The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.

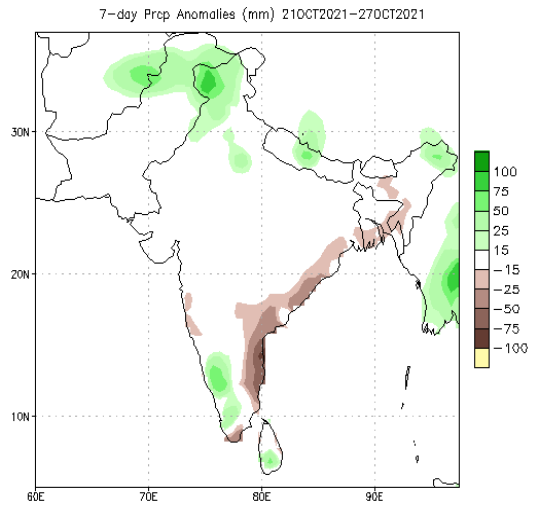
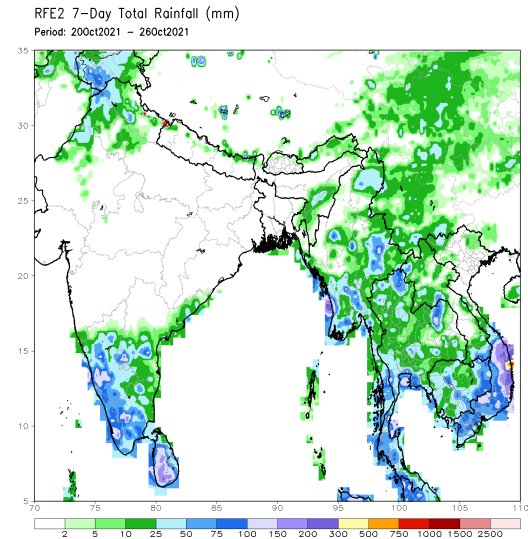


Weekly Rainfall Monitoring

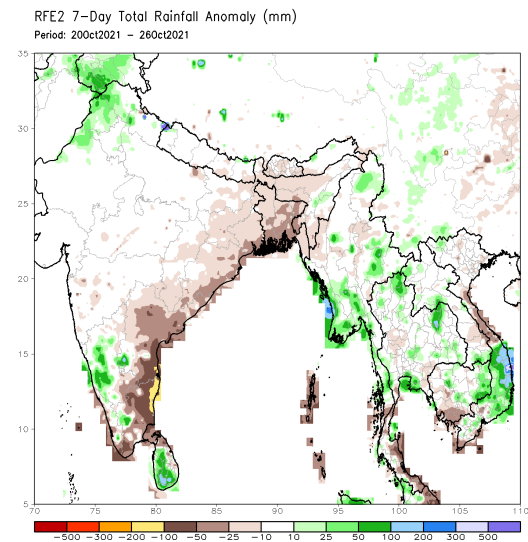
The following figures show the total satellite observed rainfall in the last week in Sri Lanka. The figure in the left is the total 7-day rainfall from NOAA Climate Prediction Center (CPC) Unified Precipitation Analysis and the figure in the right is the total 7-day rainfall from CPC RFE 2.0 Satellite Rainfall Estimates. The bottom two figures are the respective anomalies.



Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis

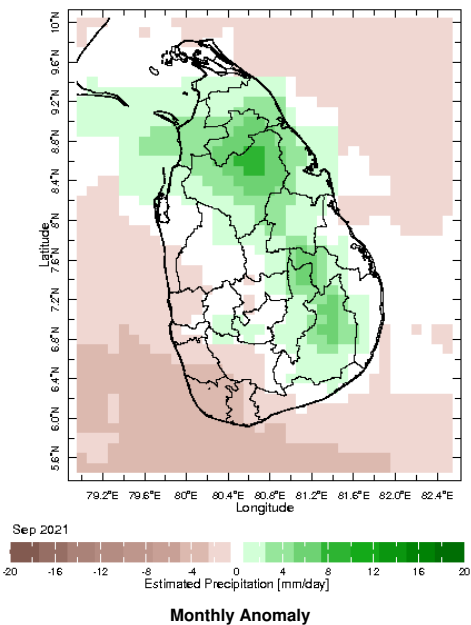
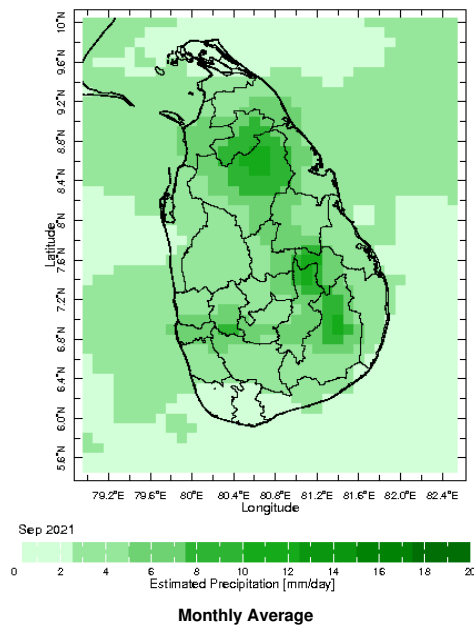


Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis Climatology (1991-2020)

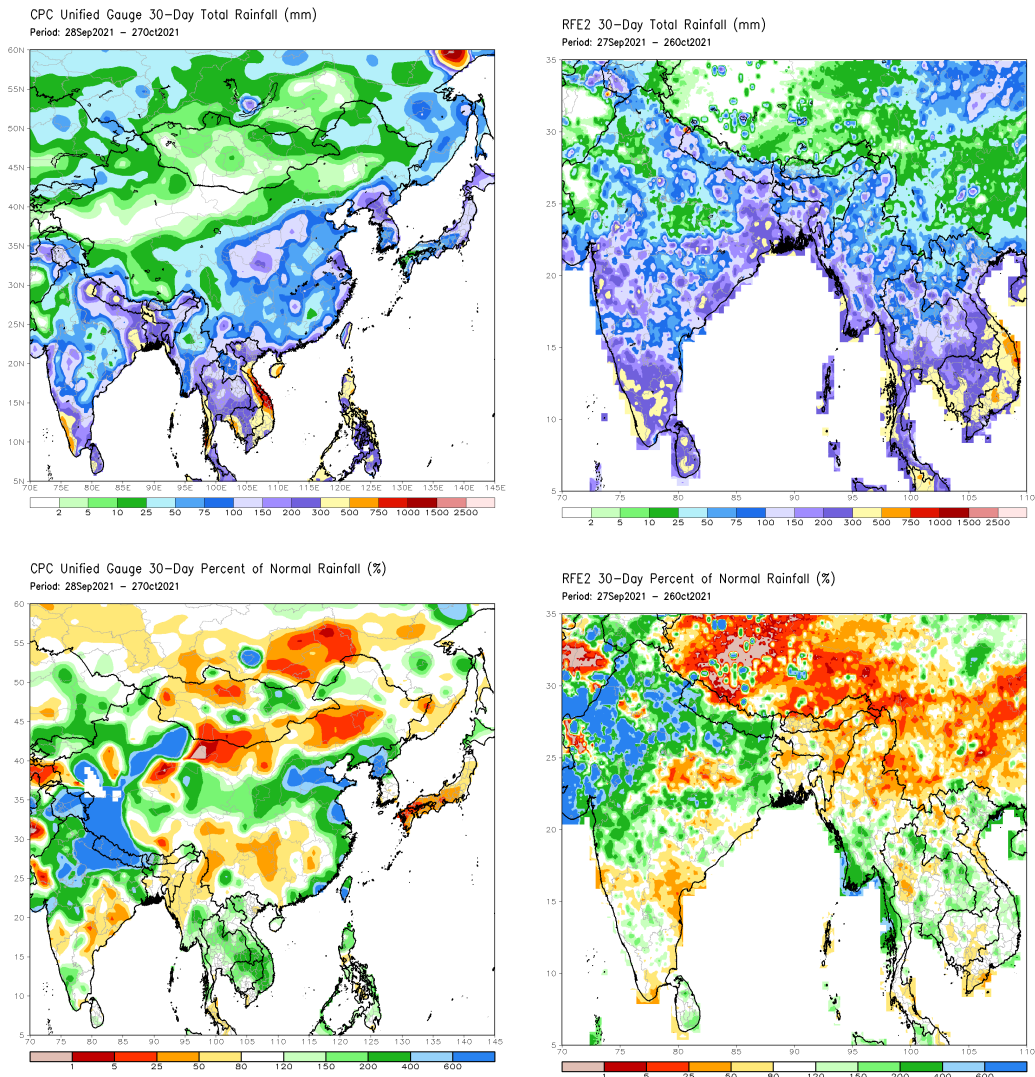


Monthly Rainfall Monitoring

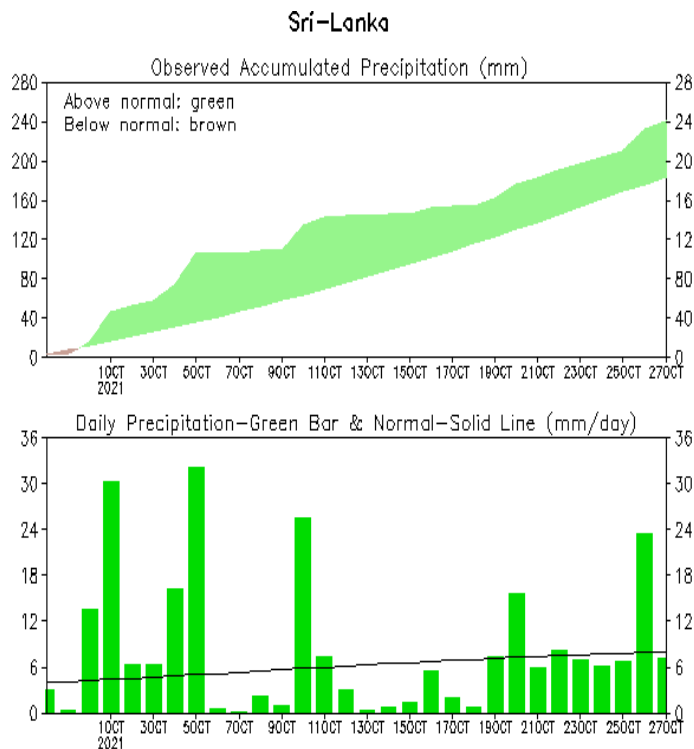
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places with above average rainfall. Darker shades show higher magnitudes in rainfall



The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in the past 30 days compared to normal rainfall in this period.

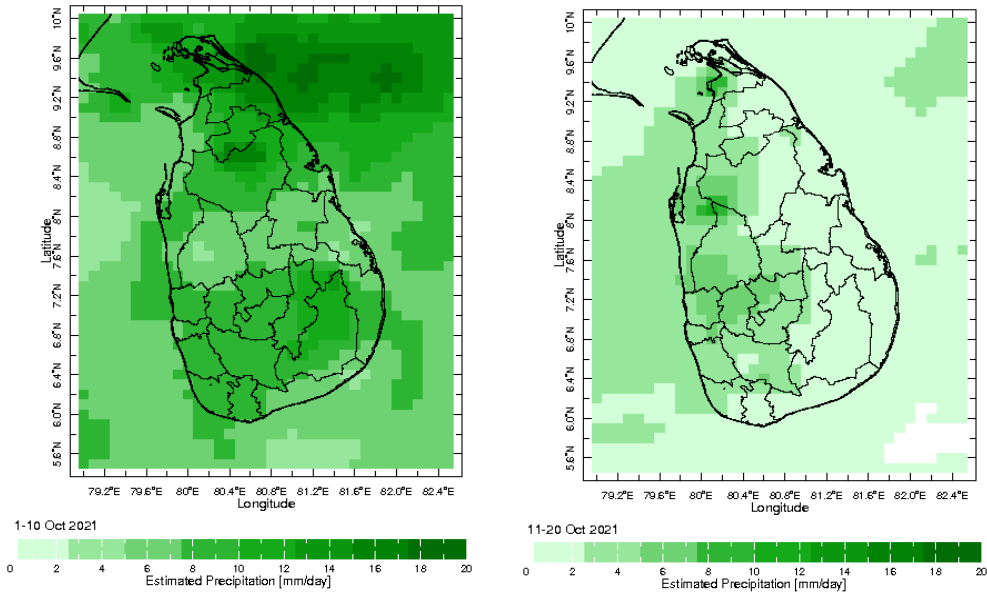


The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.

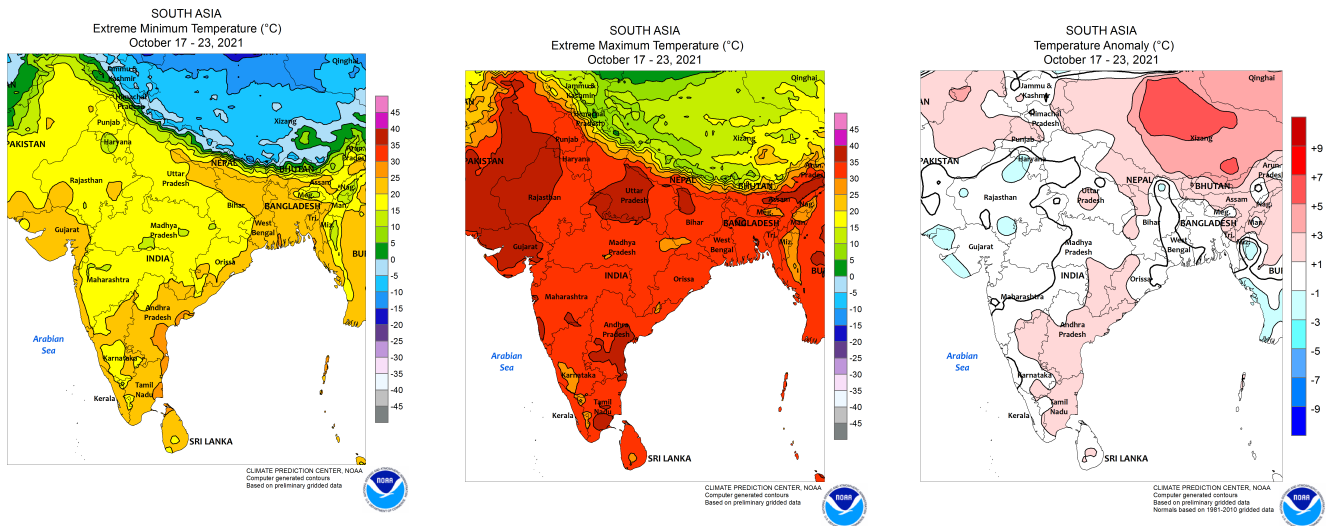


Data Source: CPC (Gauge-Based) Unified Precipitation (Climatology 1981–2010)
(updated on 00Z27OCT2021)

Dekadal (10 Day) Satellite Derived Rainfall Estimates

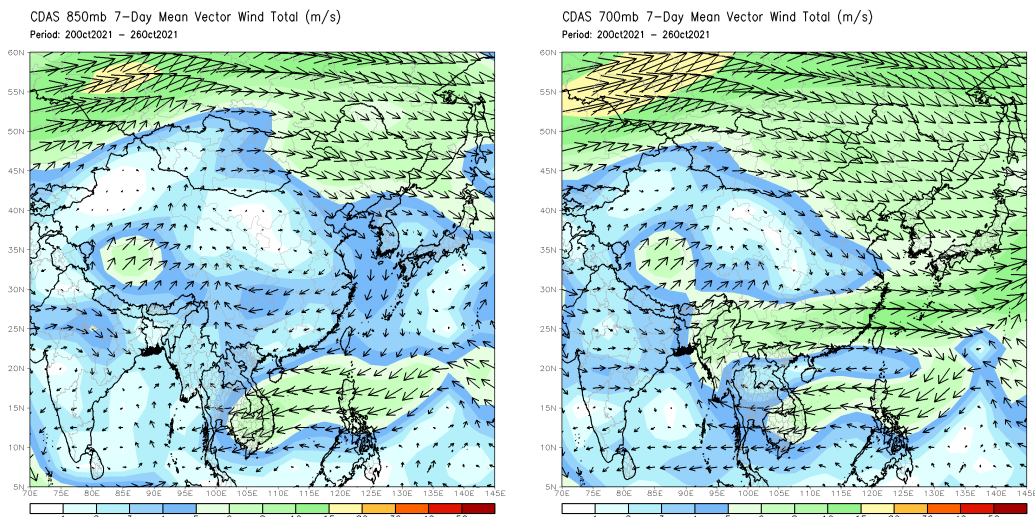


Weekly Temperature Monitoring



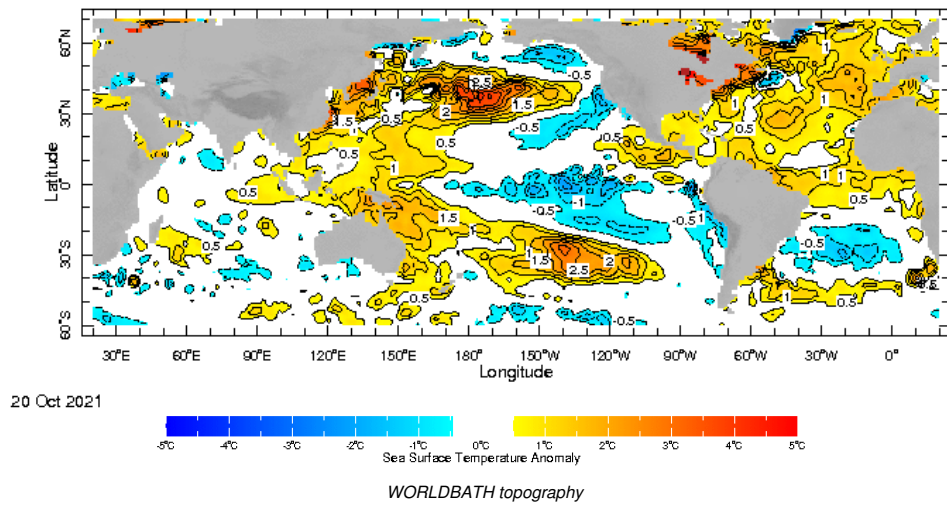
Weekly Wind Monitoring

The following figures show the mean vector wind total of the past 7 days near Sri Lanka at two levels. The figure on the left shows 850 mb (~1500 m) level and the figure on the right shows 700 mb (~3000 m) level.

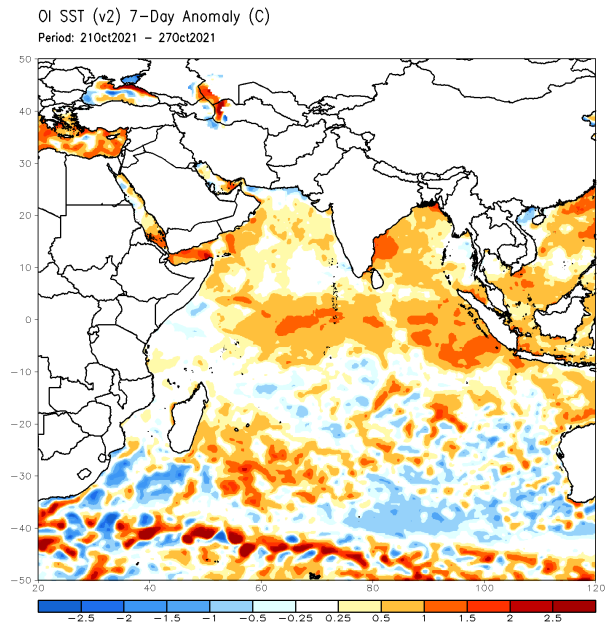


Weekly Average SST Anomalies

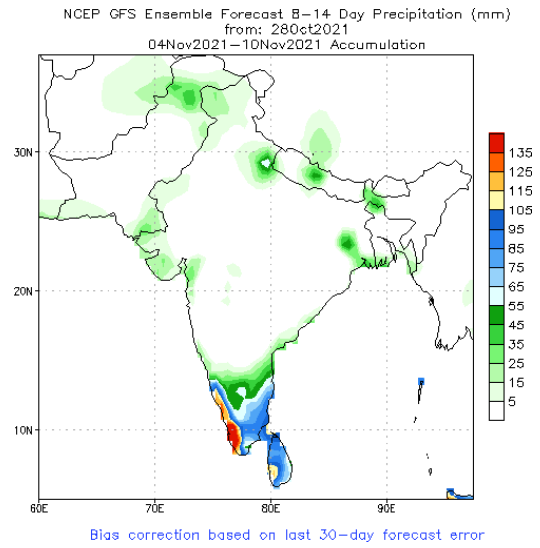
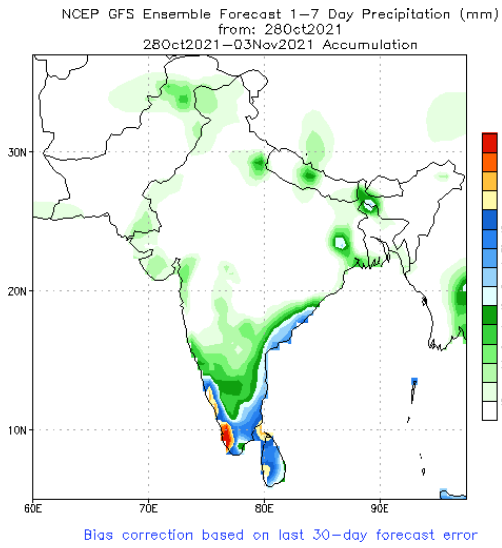
Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP



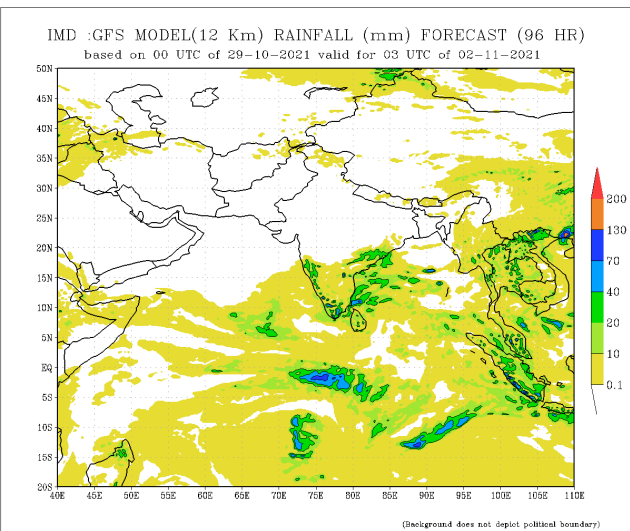
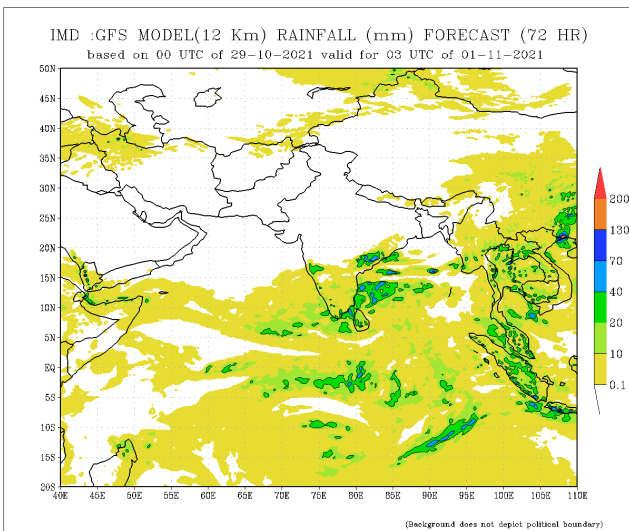
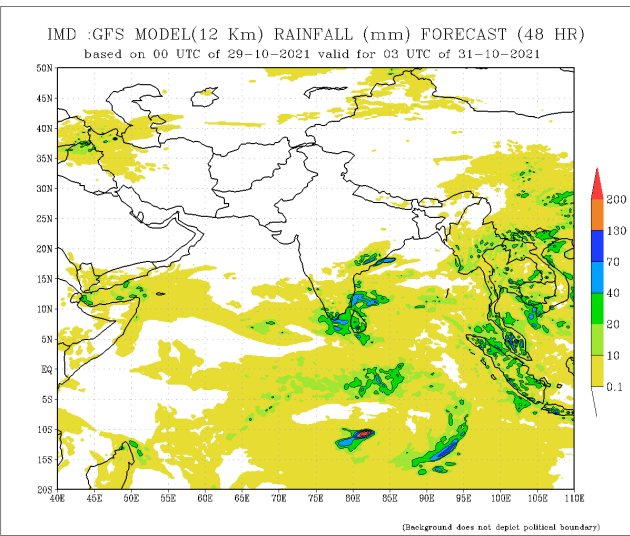
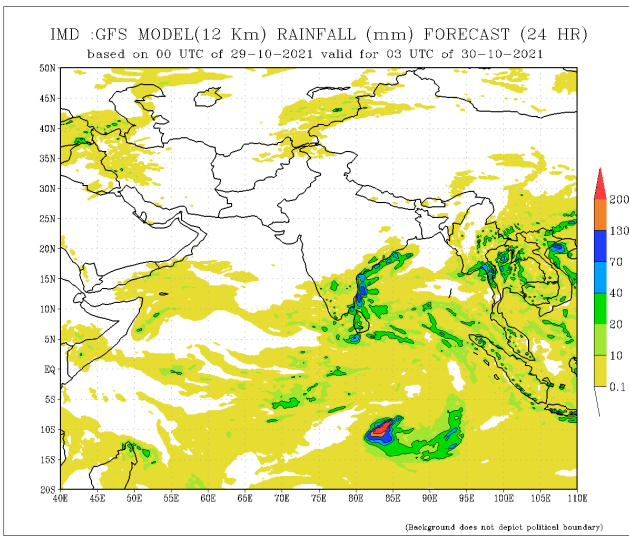
Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC

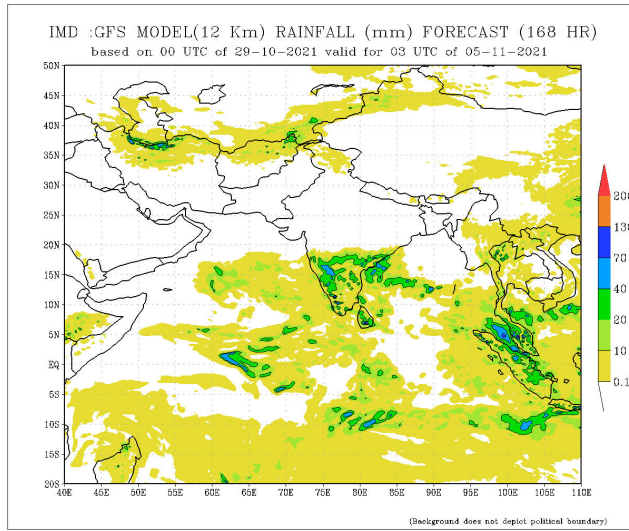
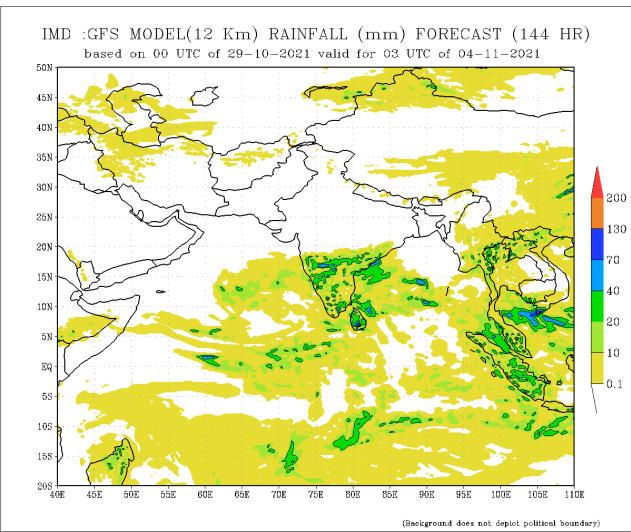
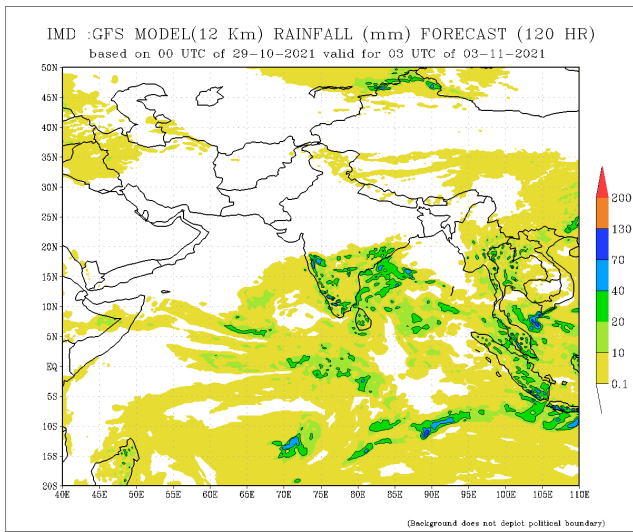


NCEP GFS 1- 14 Day prediction



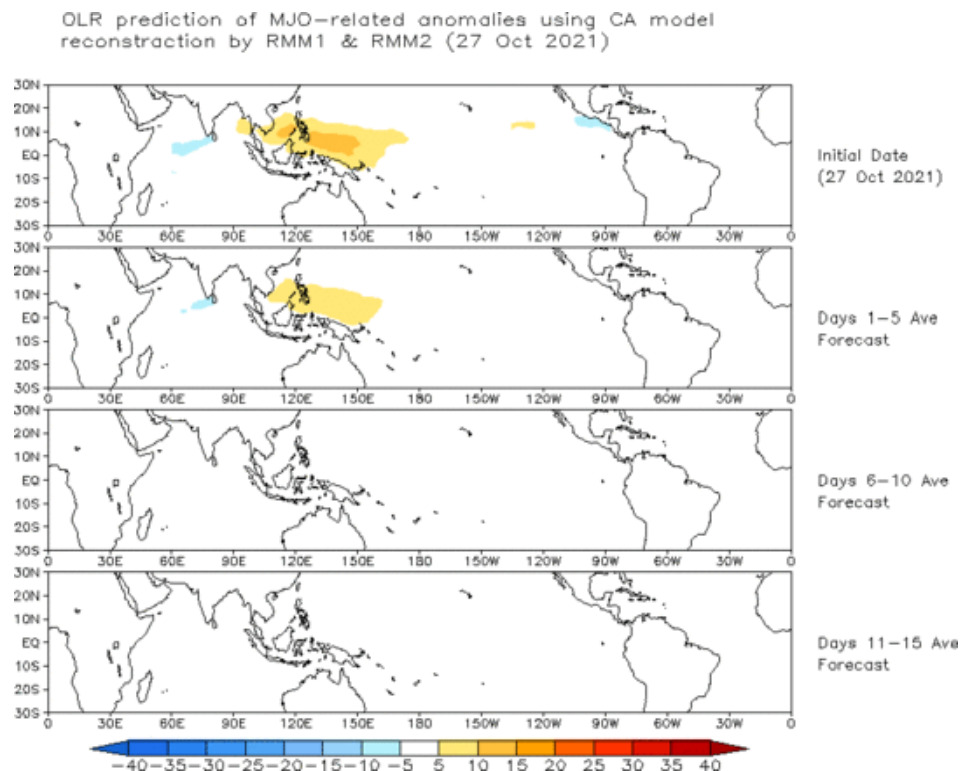
IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India





Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

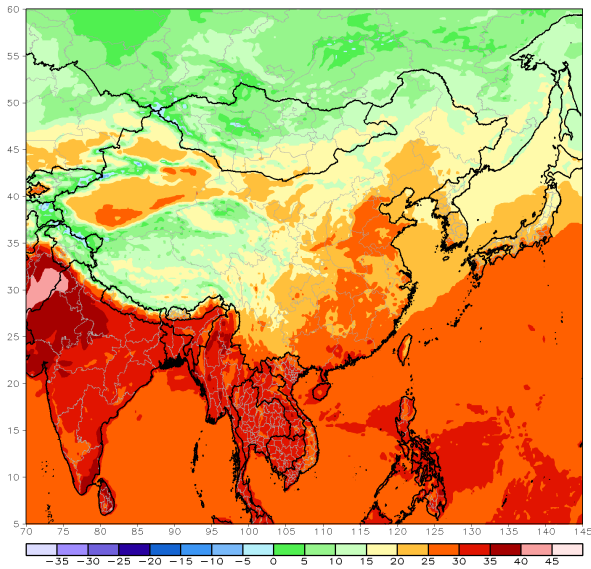
The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated anomalous OLR for the next 15 days from the Constructed Analogue (CA) model forecasts.



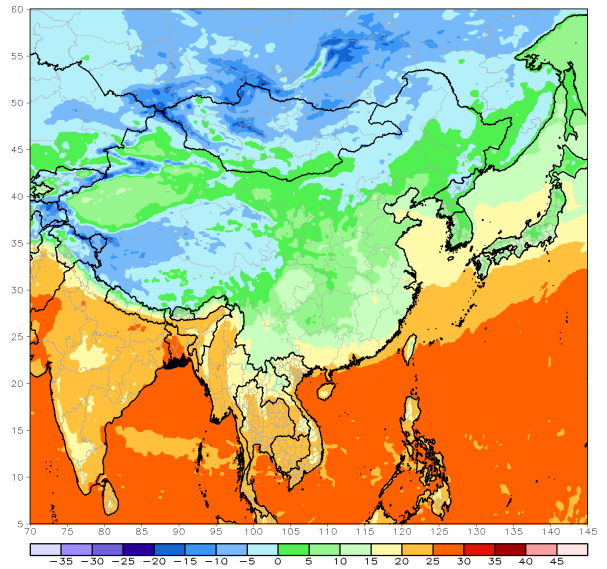
Weekly Temperature Forecast

Weekly Minimum and Maximum Temperature prediction from the GFS model (from NOAA CPC)

GFS week1 Temperature Max (C)
Ending: 18z04Nov2021



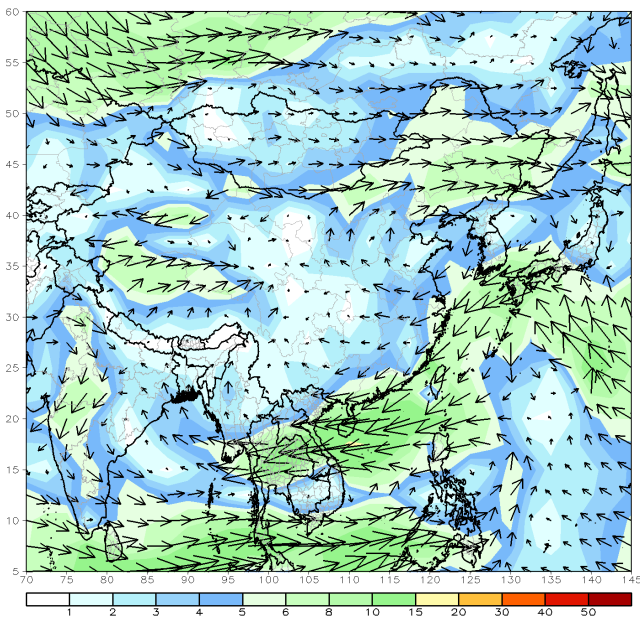
GFS week1 Temperature Min (C)
Ending: 18z04Nov2021



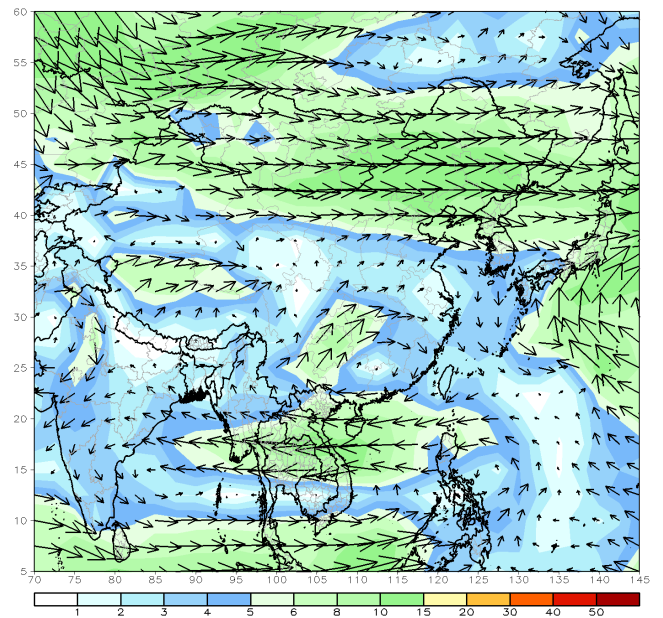
Weekly Wind Forecast

Weekly mean vector wind total prediction from the GFS model at 850 mb (left) and 700 mb (right) levels. (from NOAA CPC)

GFS 850mb week1 Mean Vector Wind Total (m/s)
Ending: 18z04Nov2021



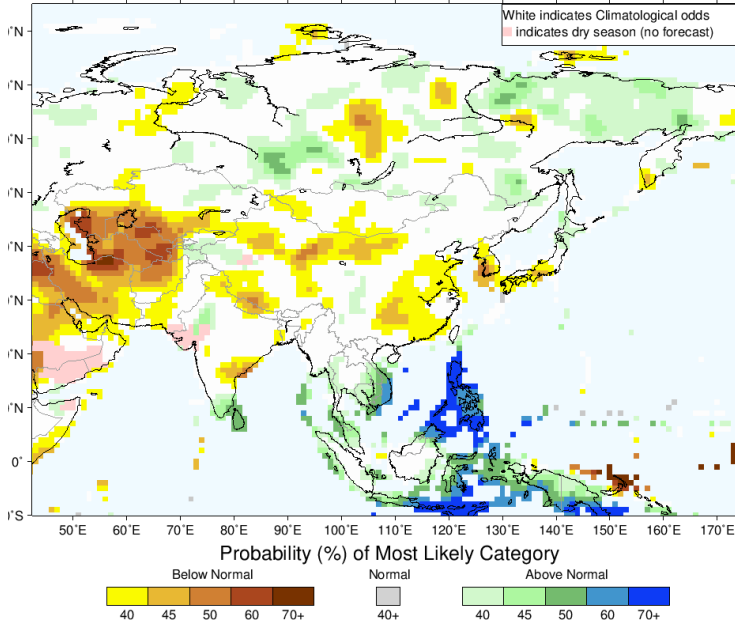
GFS 700mb week1 Mean Vector Wind Total (m/s)
Ending: 18z04Nov2021



Seasonal Rainfall and Temperature Forecast

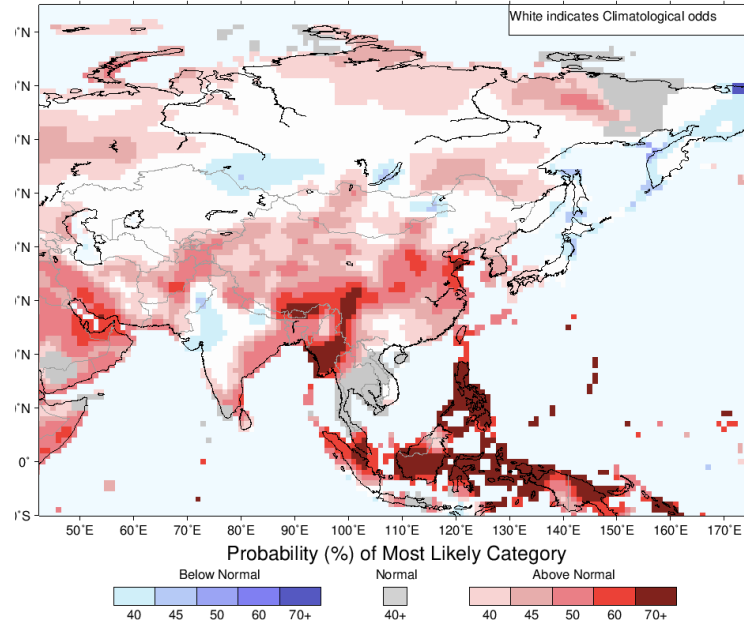
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant 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%).

IRI Multi-Model Probability Forecast for Precipitation for November-December-January 2022, Issued October 2021



Precipitation Forecast

IRI Multi-Model Probability Forecast for Temperature for November-December-January 2022, Issued October 2021



Temperature Forecast

About us

FECT is a federation of 7 organizations registered in four countries which works in countries across the Indian Ocean Islands and its littoral. Over the last 20 years, we have had operations in Africa, South Asia, South-East Asia but now it is mostly in the Indian Ocean Islands.

Contact us

Federation for Environment, Climate & Technology
 Digana Village,
 Rajawella,
 KY20180,
 SRI LANKA.

email: info@fect.lk
 phone: (+94) 81 2376746

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