

Week of
25 Feb - 4 Mar
2022

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

HIGHLIGHTS

Rainfall Prediction



• Fairly heavy rainfall is predicted for Eastern, North Central and Uva provinces from 23rd Feb – 1st Mar.

Monitored Rainfalls



• Heavy rainfall was experienced in the Katunayake and Pottuvil with max of 119.1 mm in Katunayake on 18th Feb.

Monitored Wind



• From 24th Feb - 2nd Mar, up to 8m/s Northeasterlies were experienced over the island.

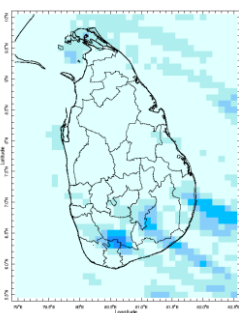
Monitored Sea Surface



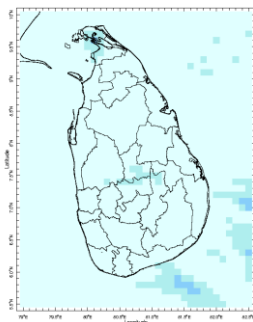
• Sea surface temperatures were 0.5°C above normal to the Southern while neutral around the rest of the island.

Monitoring Rainfall

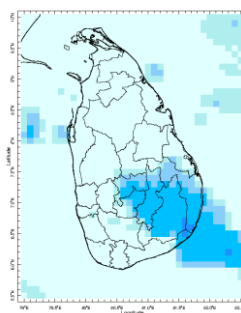
Daily Estimates for Rainfall from 15th – 22nd February 2022



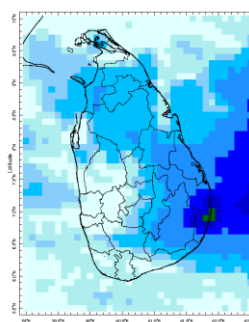
15 February



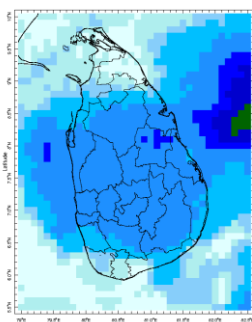
16 February



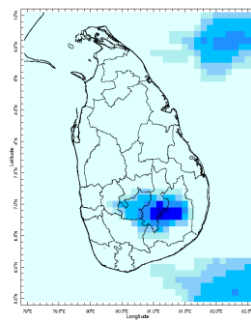
17 February



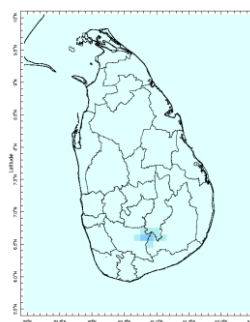
18 February



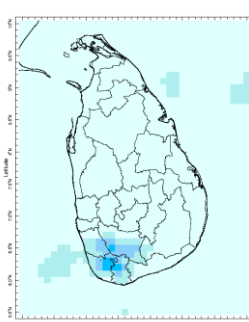
19 February



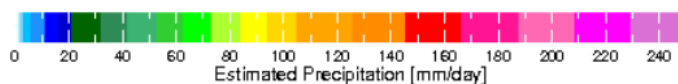
20 February



21 February



22 February



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: February 16, 2022

Equatorial sea surface temperatures (SSTs) are below average across the East Central and Eastern Pacific Ocean in mid-February. A large majority of the models indicate La Niña to prevail (with Negative Indian Ocean Dipole) through Northern Hemisphere spring 2022. A transition to ENSO-neutral is expected in May-July 2022.

Indian Ocean State

Sea surface temperatures were 0.5°C above normal to the Southern while neutral around the rest of the island.

Predictions

Rainfall

14-day prediction: NOAA NCEP models

From 23rd February – 1st March:

Total rainfall by Provinces:

Rainfall	Provinces
75 mm	Eastern
55 mm	North Central, Uva
45 mm	Northern, Southern
35 mm	Central, Sabaragamuwa, Western,
25 mm	North Western

From 2nd – 8th March:

Total rainfall by Provinces:

Rainfall	Provinces
85 mm	Eastern
65 mm	Northern, North Central
35 mm	Uva, Sabaragamuwa, Southern, Central, Western, North Western

MJO based OLR predictions

For the next 15 days:

MJO shall be active from 23rd February – 2nd March, giving significantly enhanced rainfall from 23rd – 27th February; neutral during 28th February – 4th March and slightly suppressed the rainfall during 5th – 9th March for the entire island.

Interpretation

Monitoring

Rainfall: During the last two weeks, there had been heavy rainfall over the following provinces: Eastern and Western.

Wind: Northeasterly winds prevailed in the sea area surrounding the island last week.

Temperatures: The temperature anomalies were below normal for the Northern half and near-neutral for the rest of the country, driven by the warm SST's.

Predictions

Rainfall: During the next week (23rd February – 1st March) fairly heavy rainfall is predicted for Eastern, North Central and Uva provinces.

Temperatures: The temperature remains slightly above normal in the Western, North Western and Southern province during 25th February – 5th March.

Teleconnections:

La Nina - The SST forecast indicates that La Niña is prevailing (with Negative Indian Ocean Dipole) through the Northern Hemisphere spring.

MJO shall be active from 23rd February – 2nd March, giving significantly enhanced rainfall from 23rd – 27th February; neutral during 28th February – 4th March and slightly suppressed the rainfall during 5th – 9th March for the entire island.

Seasonal Precipitation:

The precipitation forecast for the March-April-May season shows above-normal precipitation for the Northern and neutral the rest of the Island.

Terminology for Rainfall Ranges

	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

Inside This Issue

1. Monitoring

- a. Daily Rainfall Monitoring
- b. Weekly Rainfall Monitoring
- c. Monthly Rainfall Monitoring
- d. Dekadal (10 Day) Satellite Derived Rainfall Estimates
- e. Weekly Temperature Monitoring
- f. Weekly Wind Monitoring
- g. Weekly Average SST Anomalies

2. Predictions

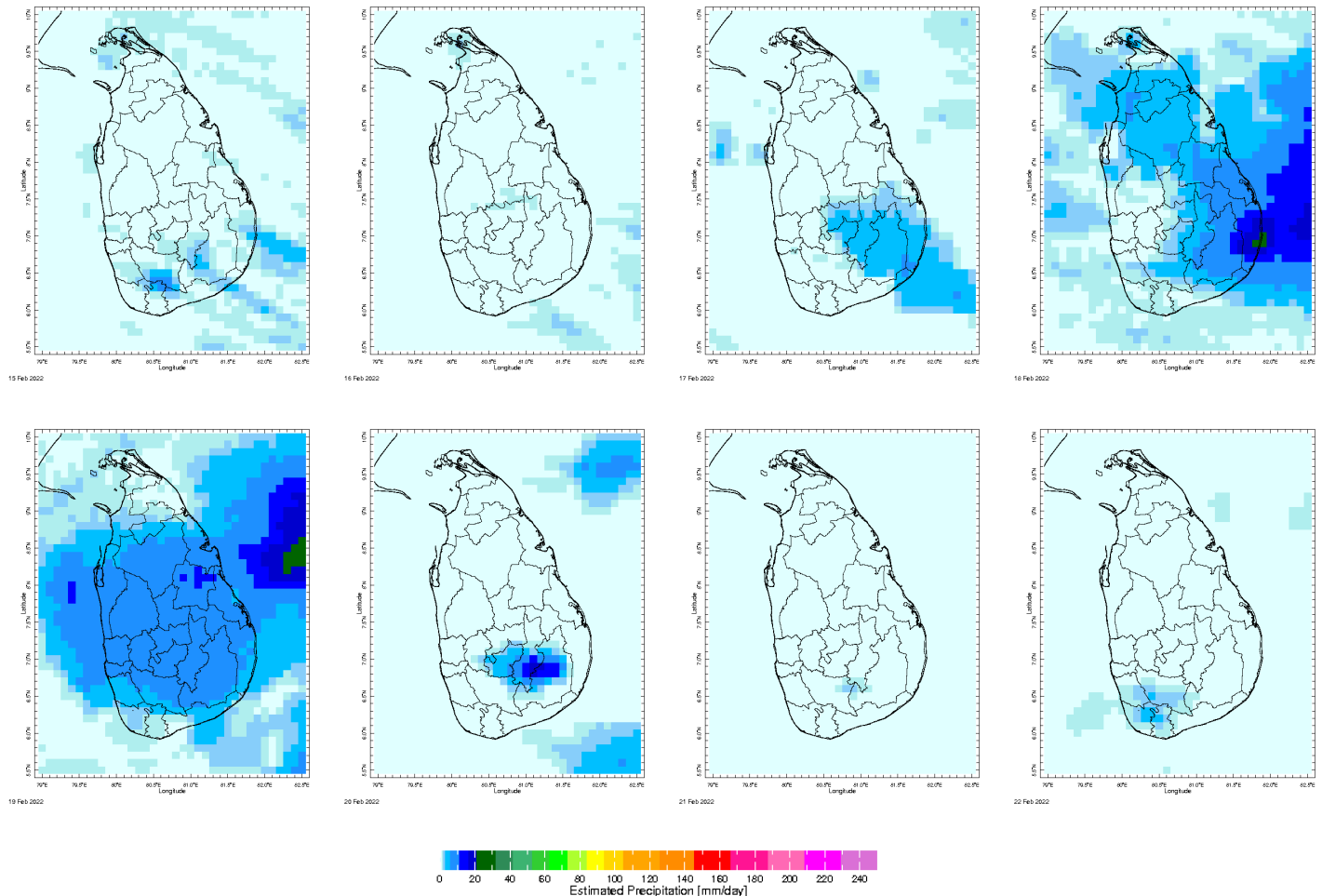
- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
- b. GFS (T574) Model Rainfall Forecast from RMSC New Delhi
- c. MJO Related OLR Forecast
- d. Weekly Temperature Forecast
- e. Weekly Wind Forecast
- f. Seasonal Predictions from IRI



MONITORING

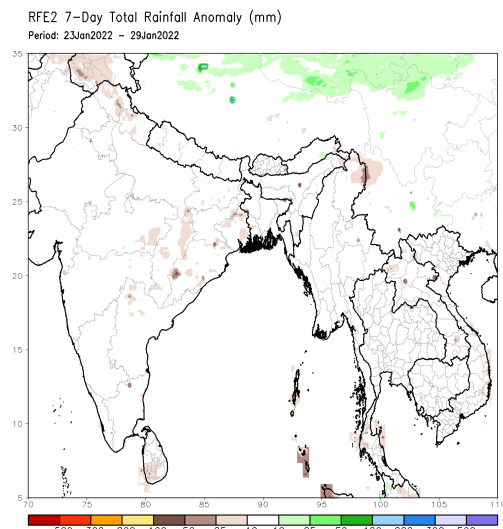
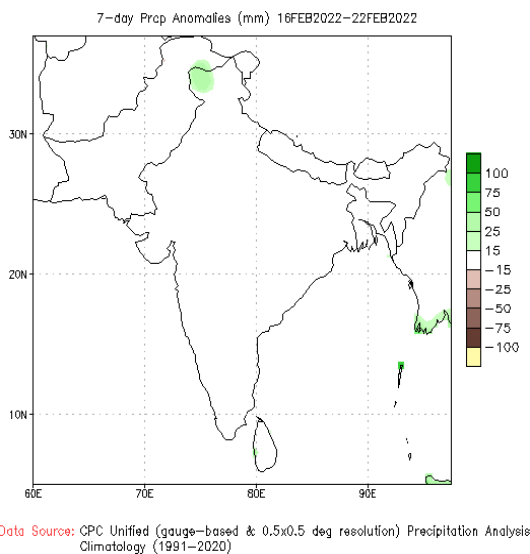
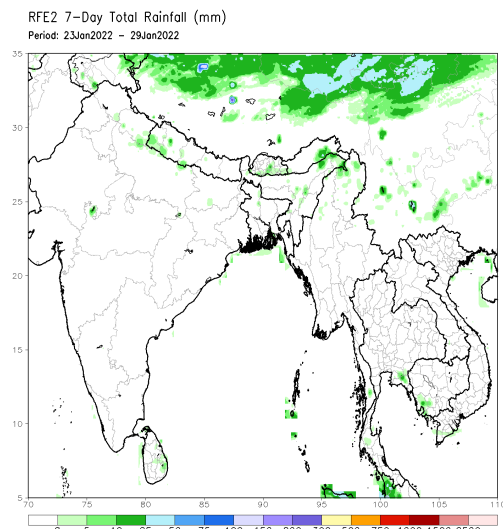
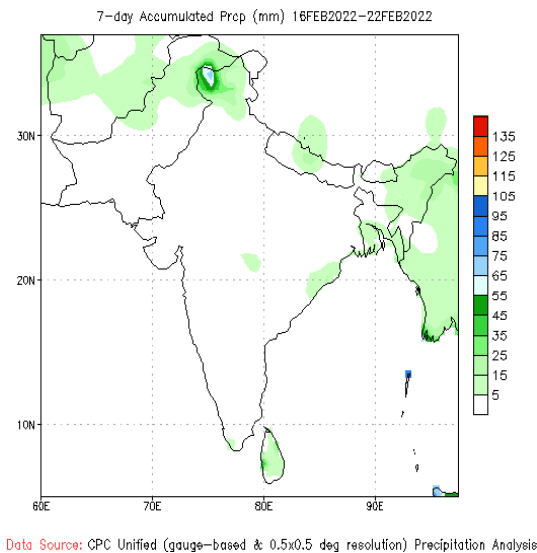
Daily Rainfall Monitoring

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



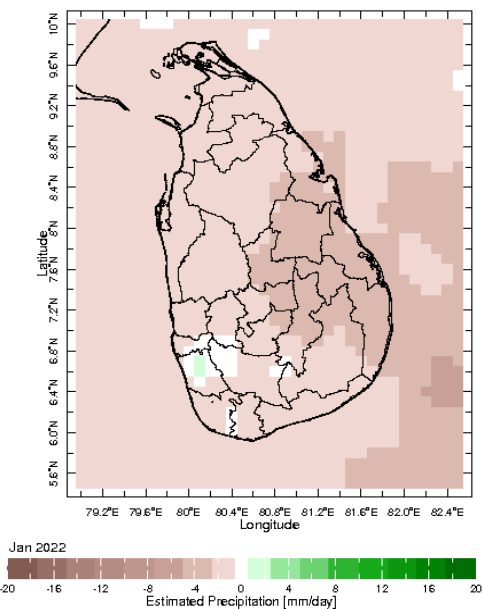
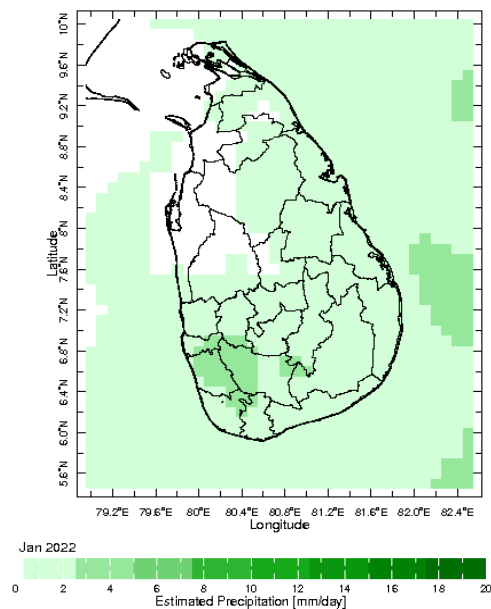
Weekly Rainfall Monitoring

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.

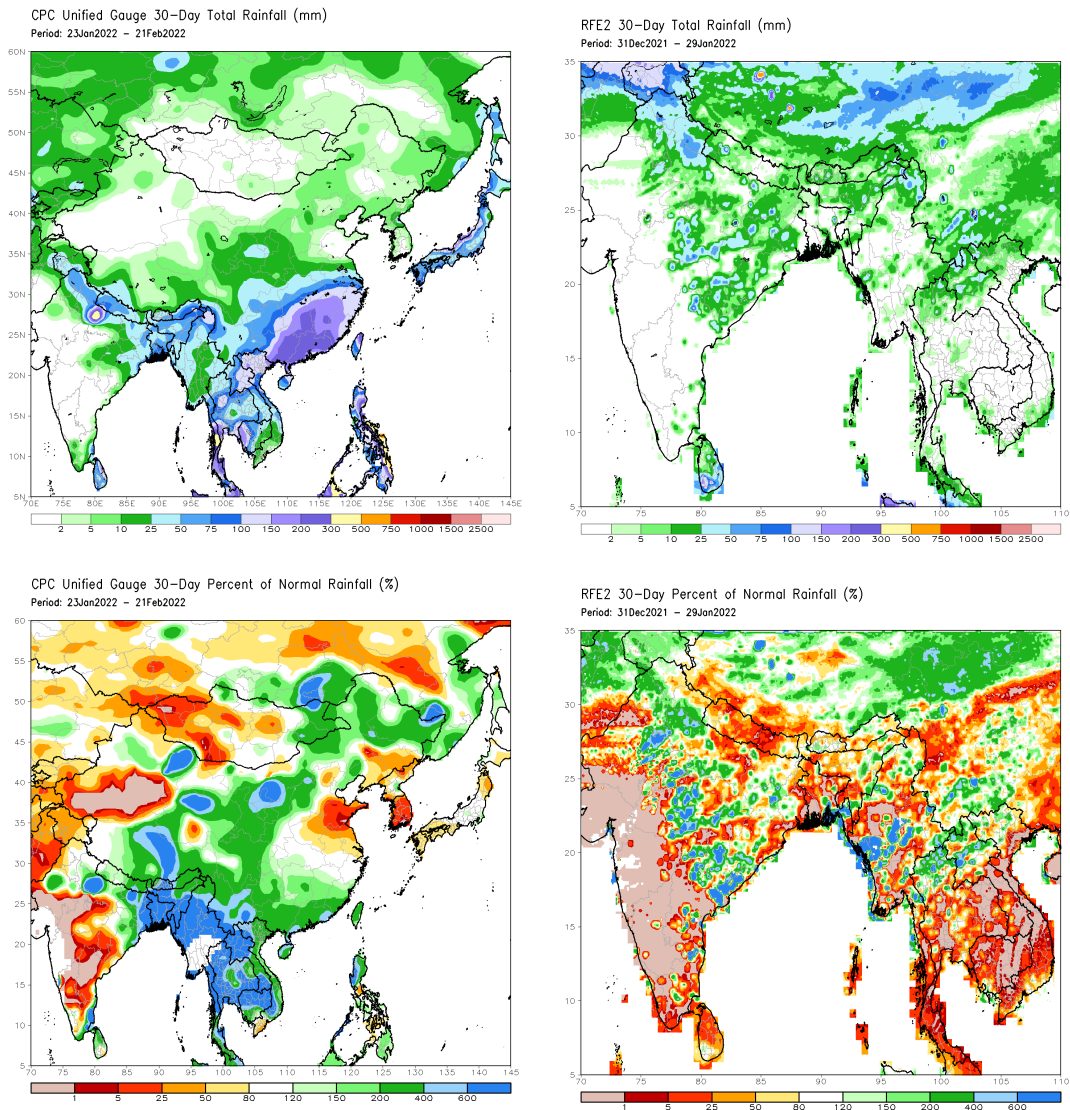


Monthly Rainfall Monitoring

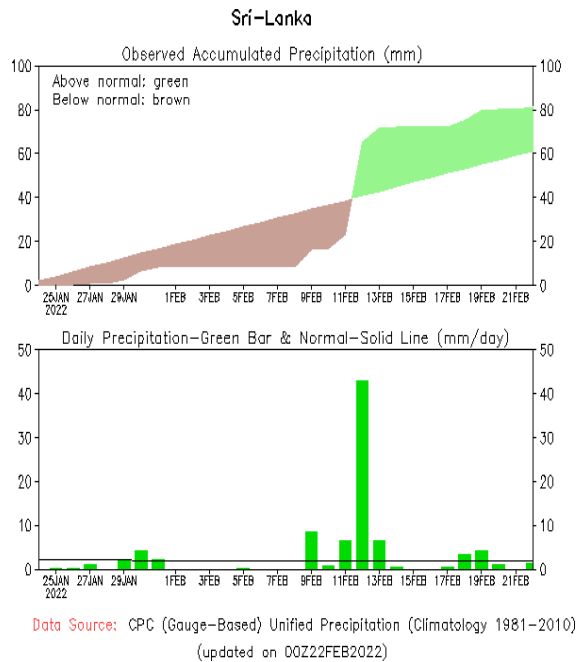
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



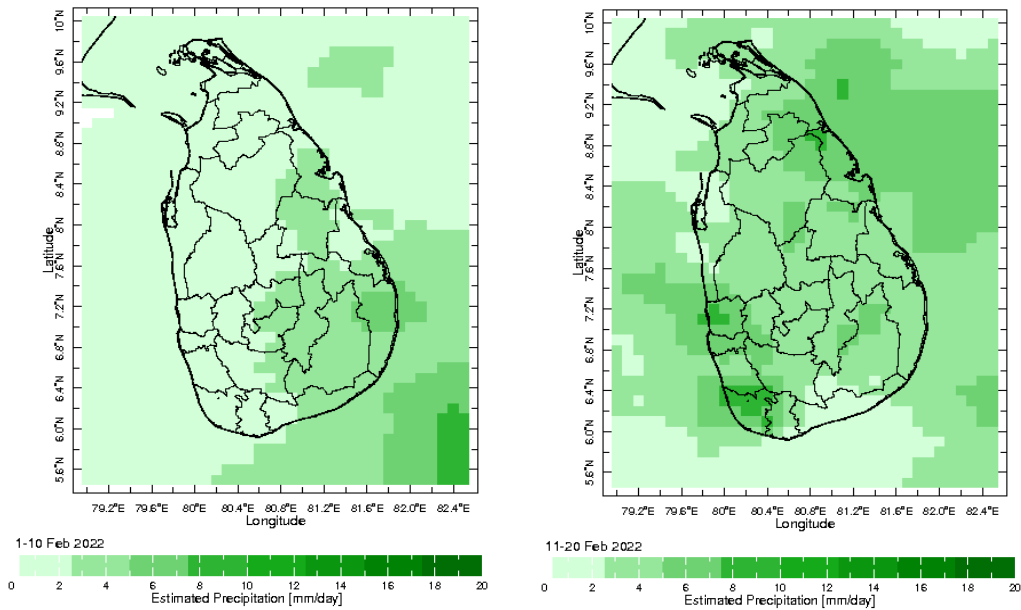
The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in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



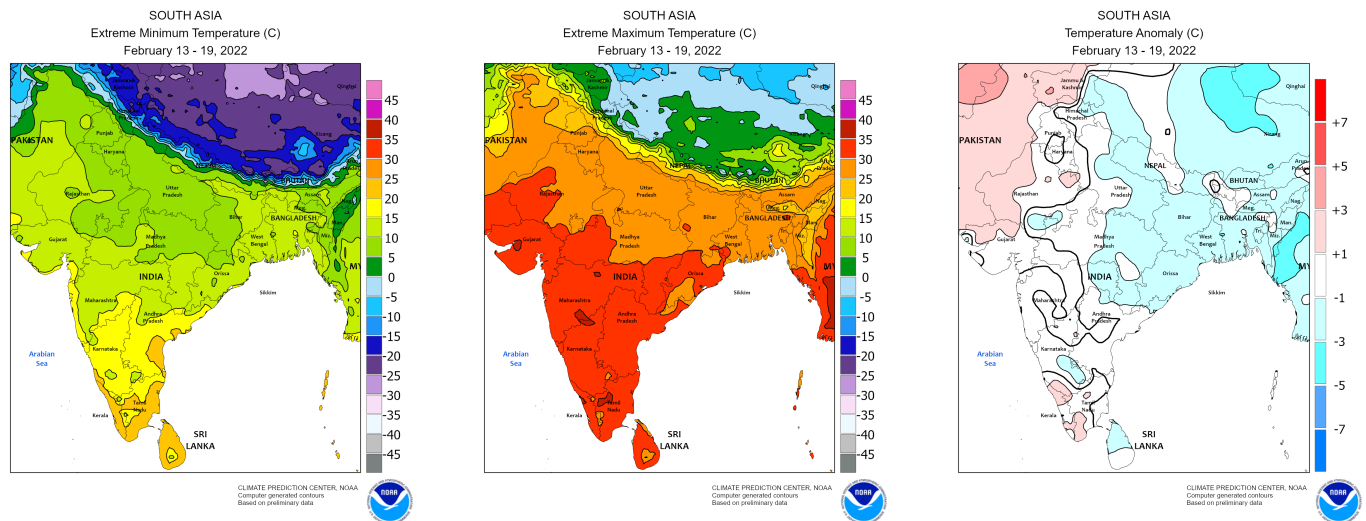
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



Dekadal (10 Day) Satellite Derived Rainfall Estimates



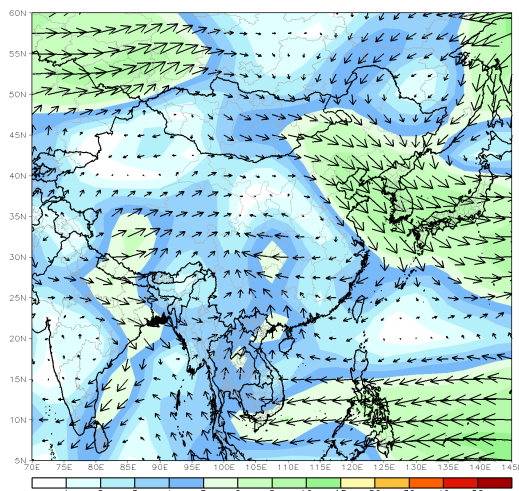
Weekly Temperature Monitoring



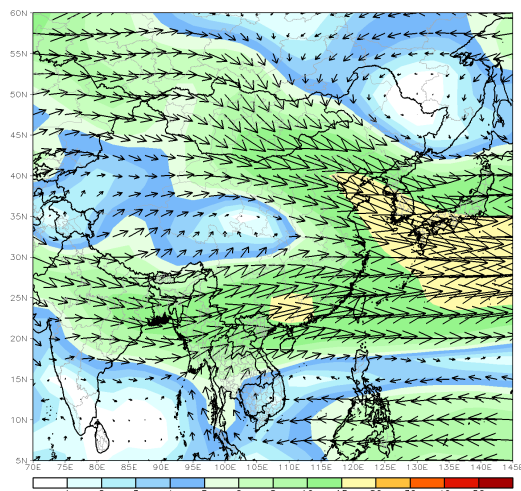
Weekly Wind Monitoring

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.

CDAS 850mb 7-Day Mean Vector Wind Total (m/s)
Period: 14Feb2022 - 20Feb2022

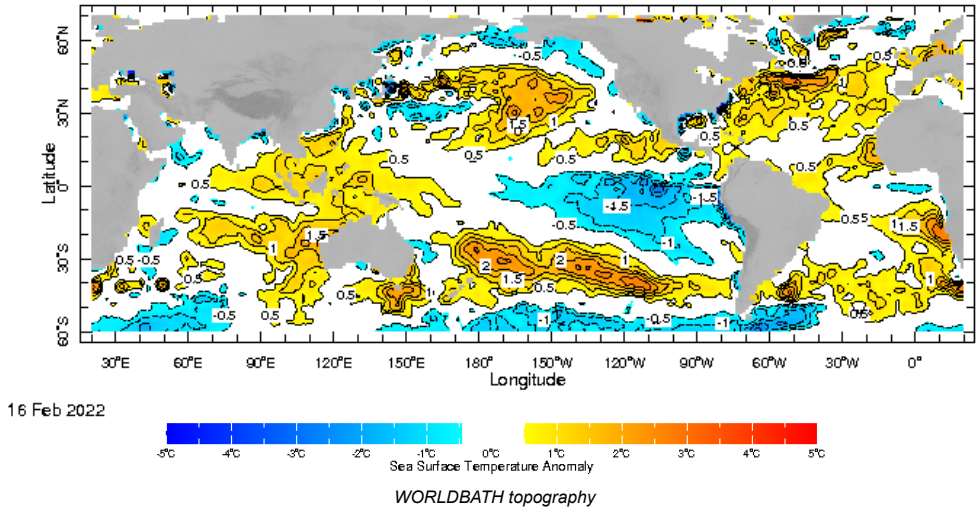


CDAS 700mb 7-Day Mean Vector Wind Total (m/s)
Period: 14Feb2022 - 20Feb2022

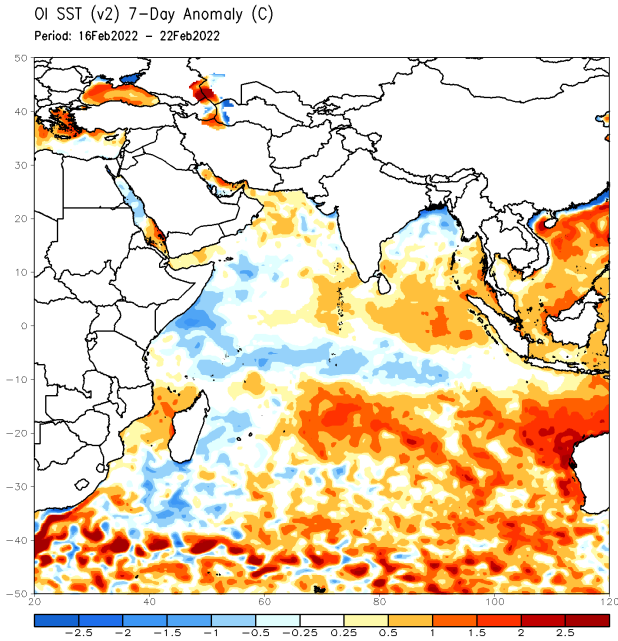


Weekly Average SST Anomalies

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

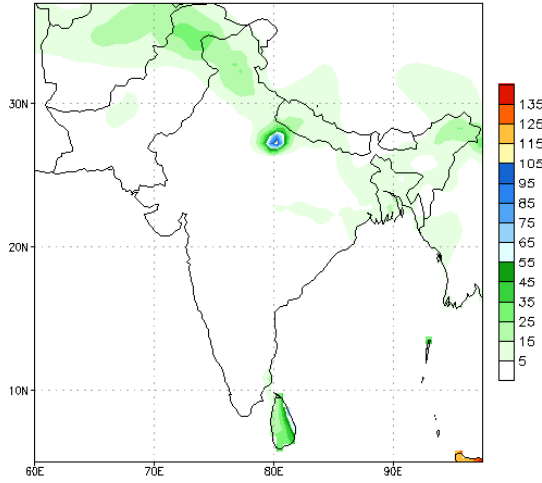


Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC



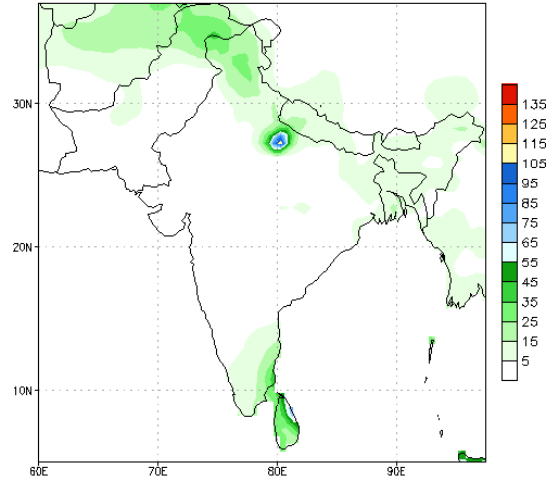
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
from: 23Feb2022
23Feb2022-01Mar2022 Accumulation



Bias correction based on last 30-day forecast error

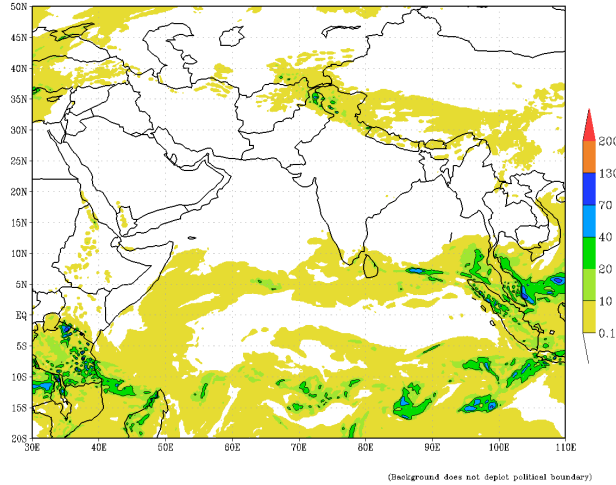
NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)
from: 23Feb2022
02Mar2022-08Mar2022 Accumulation



Bias correction based on last 30-day forecast error

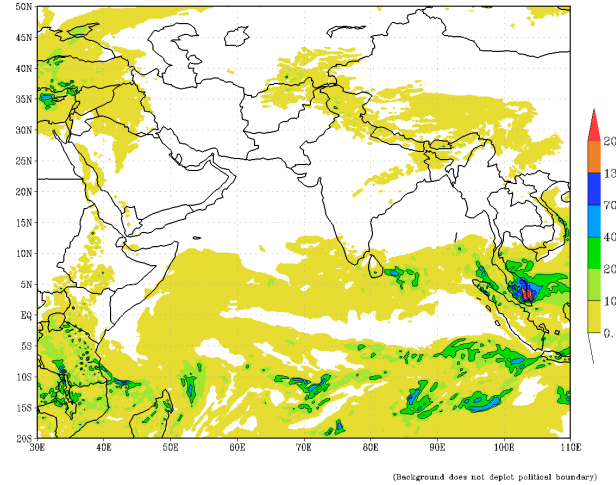
IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (24 HR)
based on 00 UTC of 23-02-2022 valid for 03 UTC of 24-02-2022



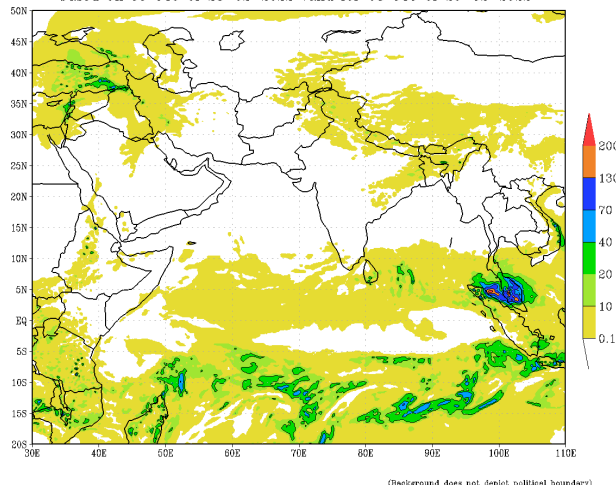
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (48 HR)
based on 00 UTC of 23-02-2022 valid for 03 UTC of 25-02-2022



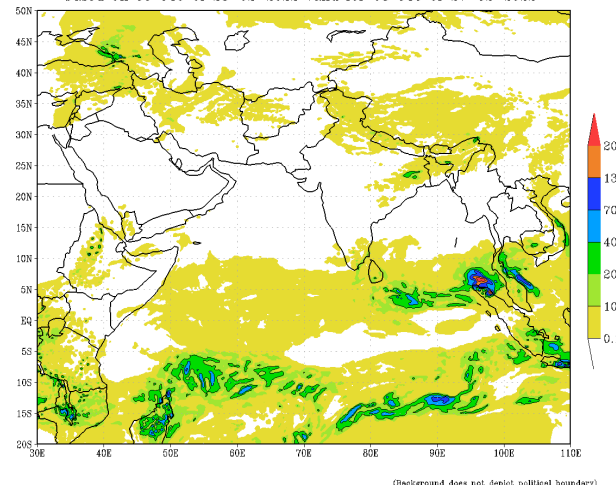
(Background does not depict political boundary)

IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (72 HR)
based on 00 UTC of 23-02-2022 valid for 03 UTC of 26-02-2022

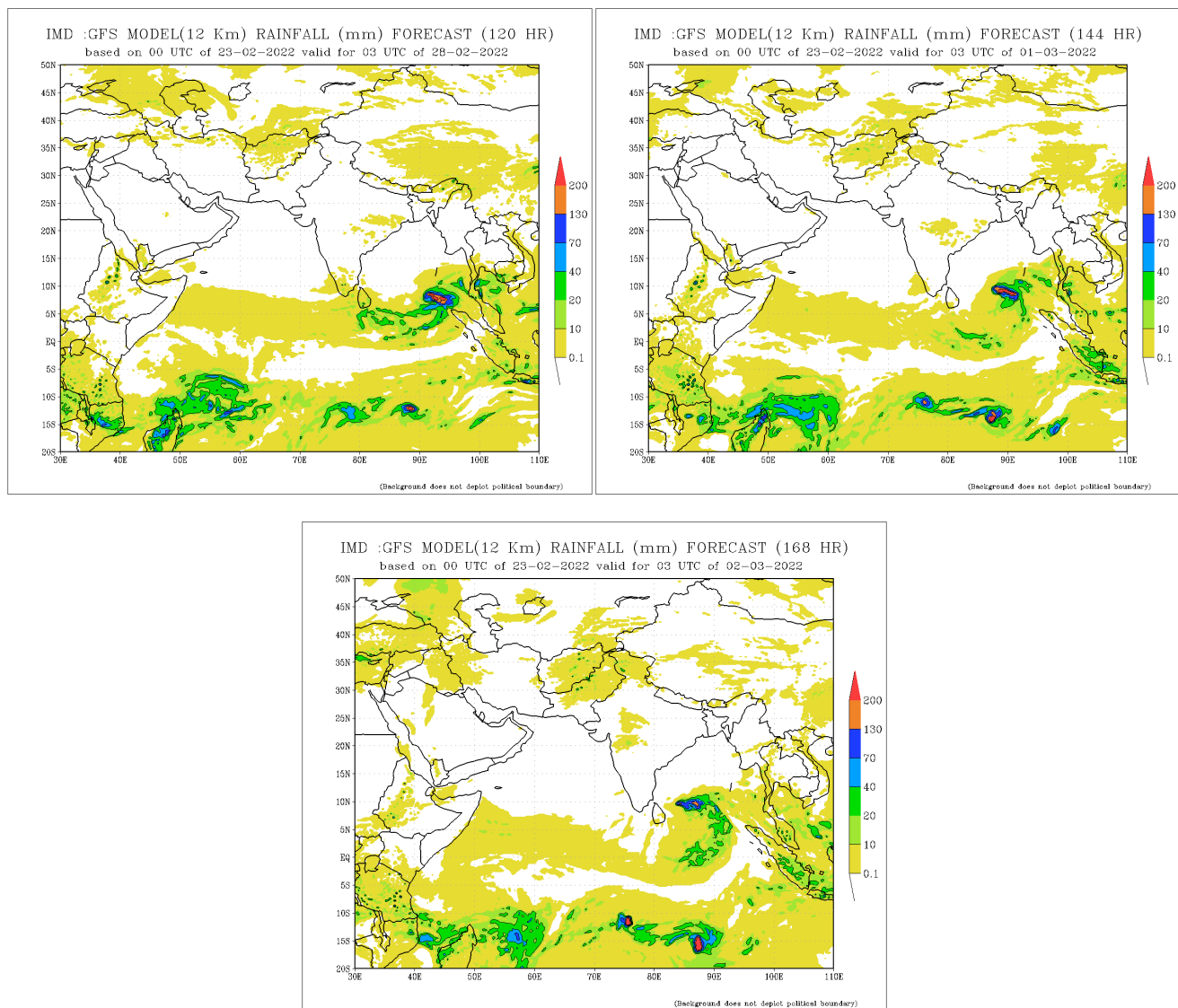


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IMD :GFS MODEL(12 Km) RAINFALL (mm) FORECAST (96 HR)
based on 00 UTC of 23-02-2022 valid for 03 UTC of 27-02-2022

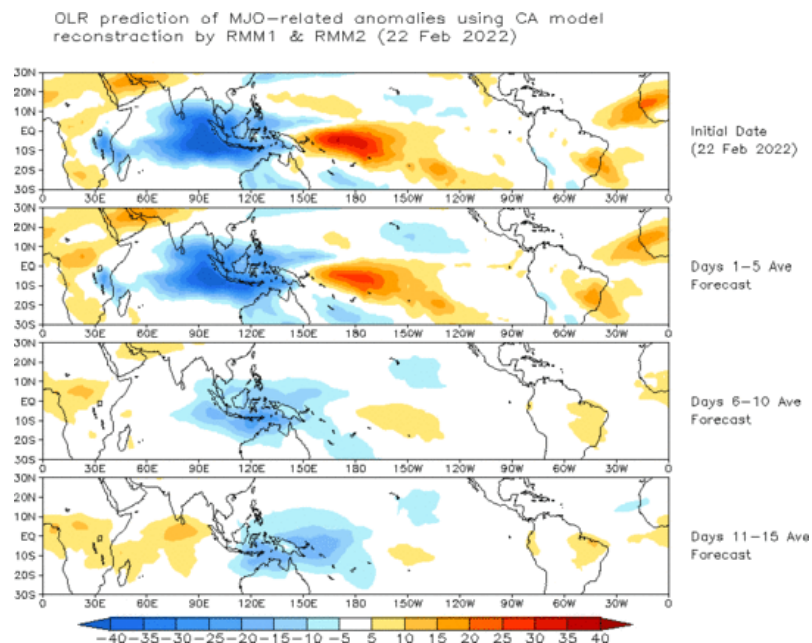


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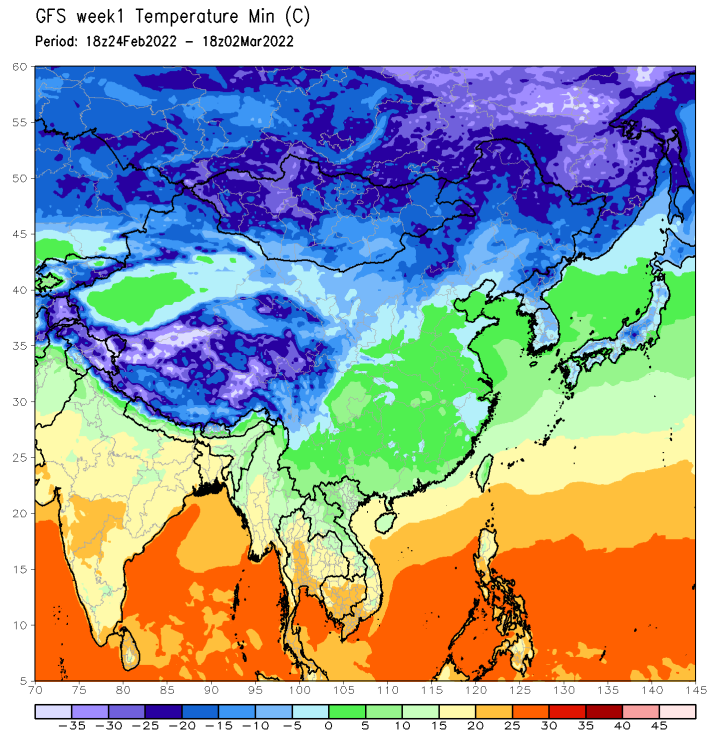
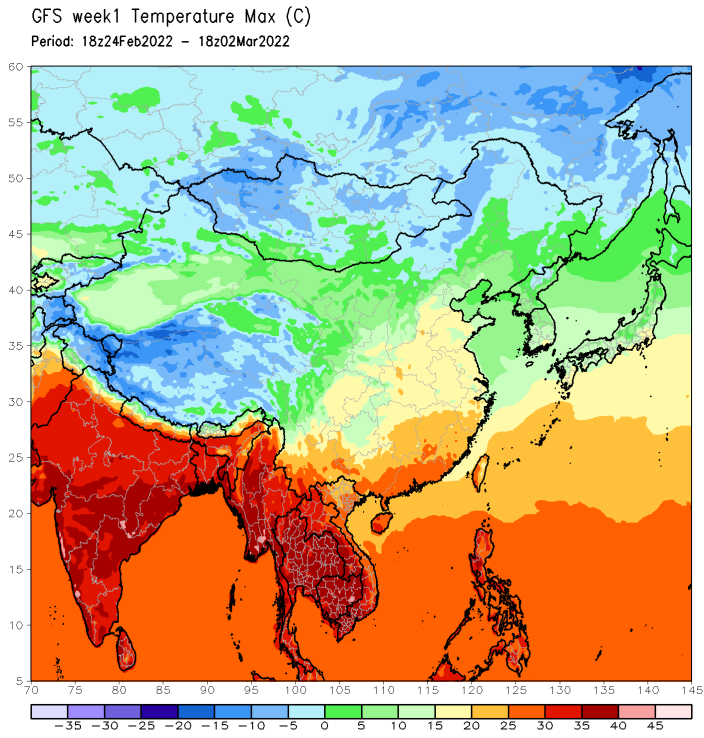
Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

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.



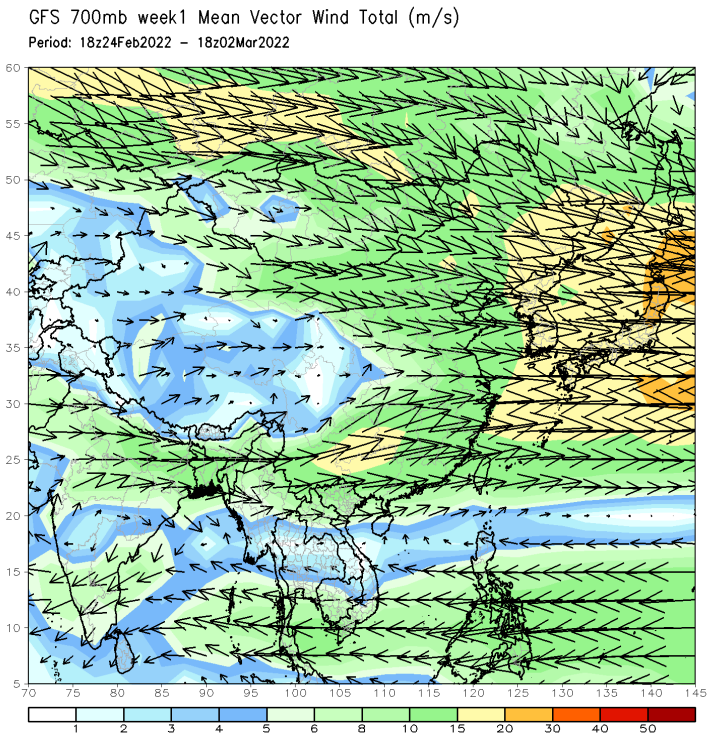
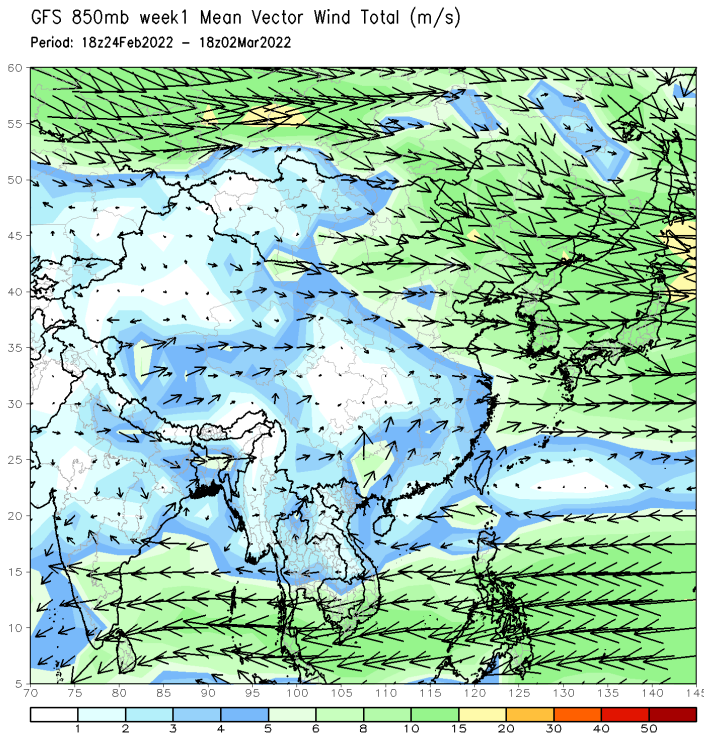
Weekly Temperature Forecast

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



Weekly Wind Forecast

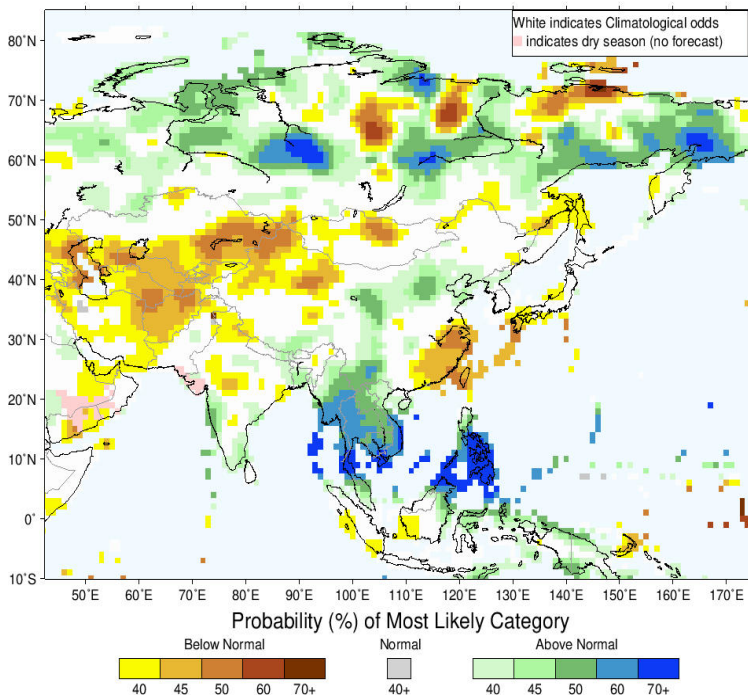
Weekly mean vector wind total prediction from the GFS model at 850 mb (left) and 700 mb (right) levels. (from NOAA CPC)



Seasonal Rainfall and Temperature Forecast

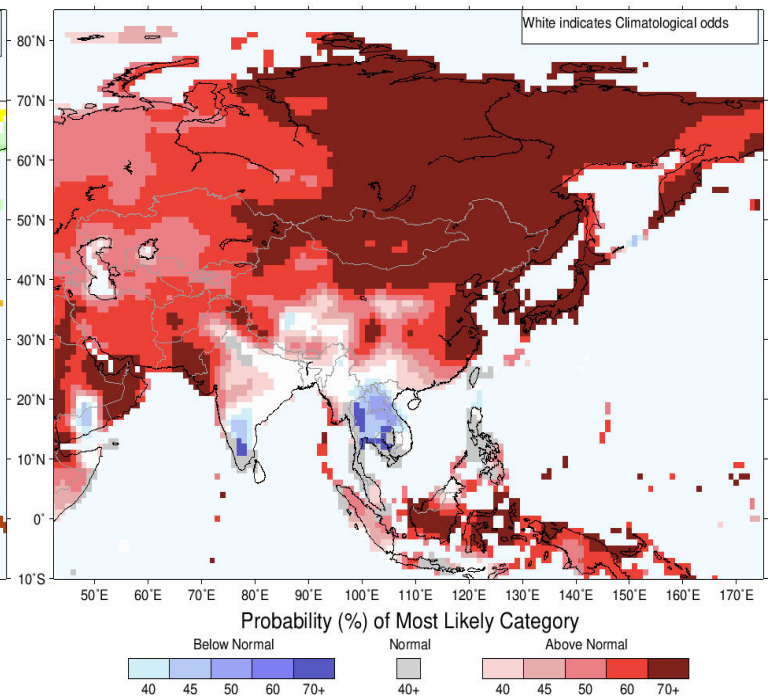
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant 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 March–April–May 2022, Issued February 2022



Precipitation Forecast

IRI Multi-Model Probability Forecast for Temperature for March–April–May 2022, Issued February 2022



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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