



सत्यमेव जयते



Ministry of Earth Sciences (MoES)
India Meteorological Department
Welcomes You All for the Press Release
of

**Updated Seasonal outlook for hot weather season (April to June) 2025
and Monthly Outlook for April 2025 for the Rainfall and Temperature**

31 March 2025



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INDIA METEOROLOGICAL DEPARTMENT



Monthly Rainfall March 2025

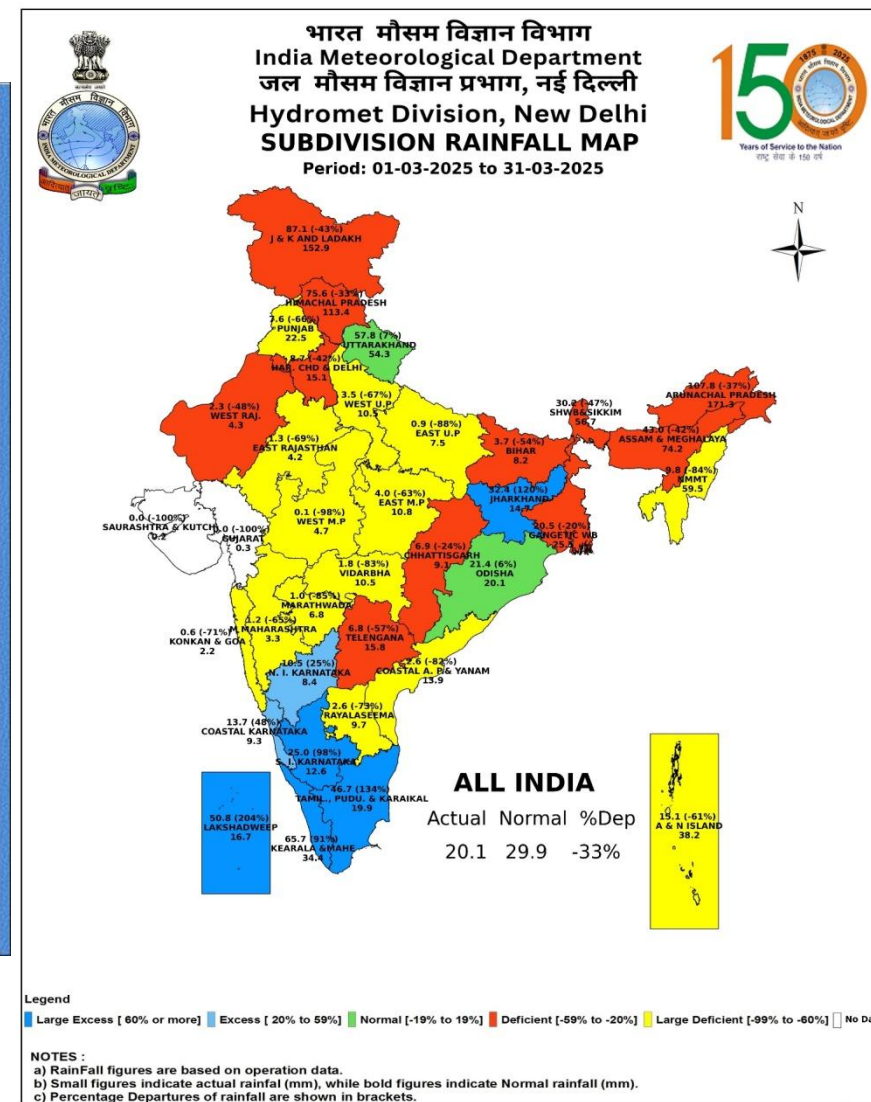
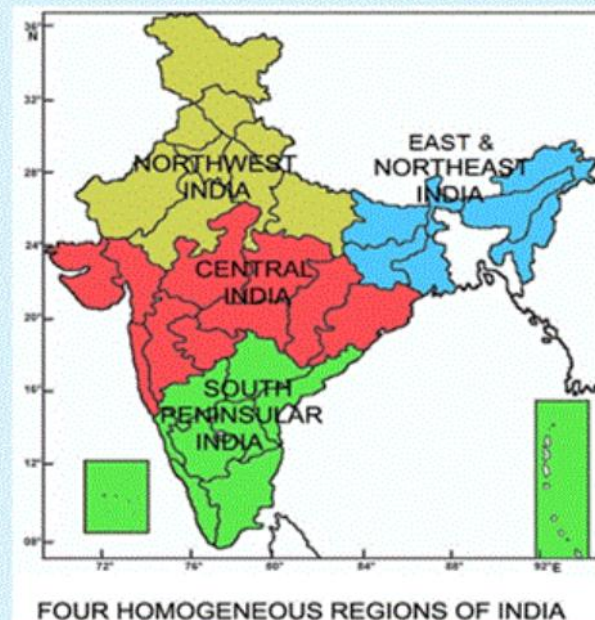
पर्जन्य आंकड़े - मानसून पूर्व ऋतु २०२५

RAINFALL STATISTICS - PRE-MONSOON 2025

MARCH 2025	1-Mar	TO	31-Mar
REGION	ACTUAL	NORMAL	% DEP
COUNTRY AS A WHOLE	20.1	29.9	-32.6
NORTHWEST INDIA	28.1	47.9	-41.3
EAST & NORTHEAST INDIA	36.7	59.7	-38.6
CENTRAL INDIA	4.7	7.8	-39.3
SOUTH PENINSULA	20.7	15.5	33.6



(वास्तविक समय के आंकड़ों पर आधारित)
(Based on real time data)

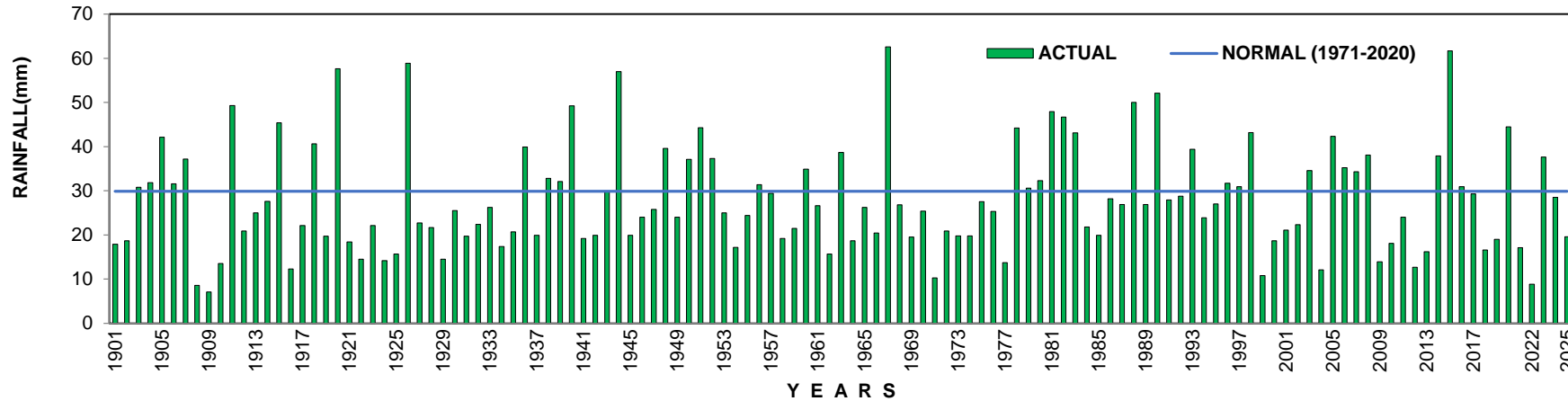


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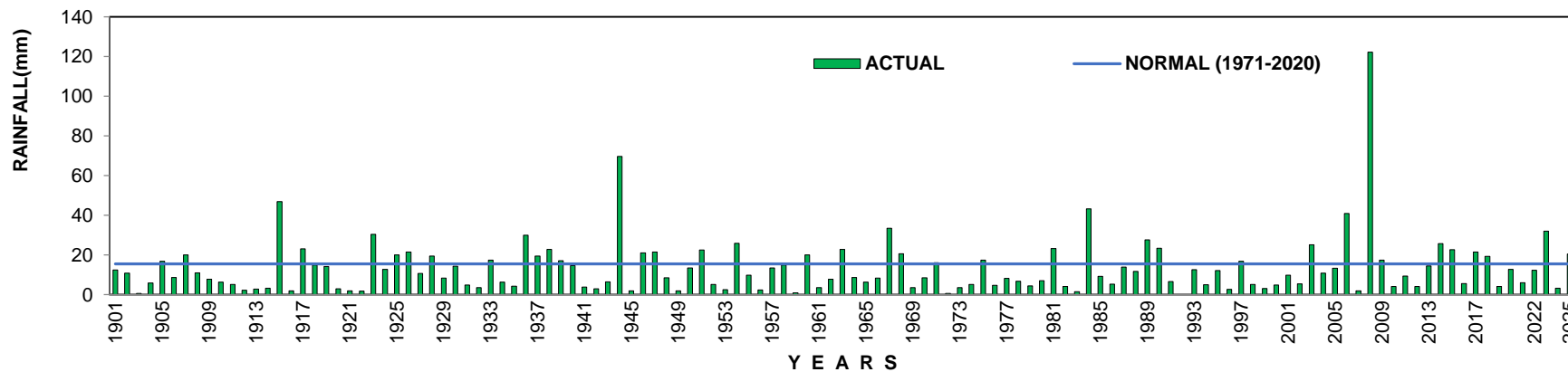
Rainfall (All India, South Peninsular India) during March 2025

Area Weighted Rainfall over All India For MARCH (1901-2025)



Rainfall over All India (20.1 mm) till 31st March was 27th lowest since 1901 and was 10th lowest since 2001

Area Weighted Rainfall over South Peninsular India For MARCH (1901-2025)

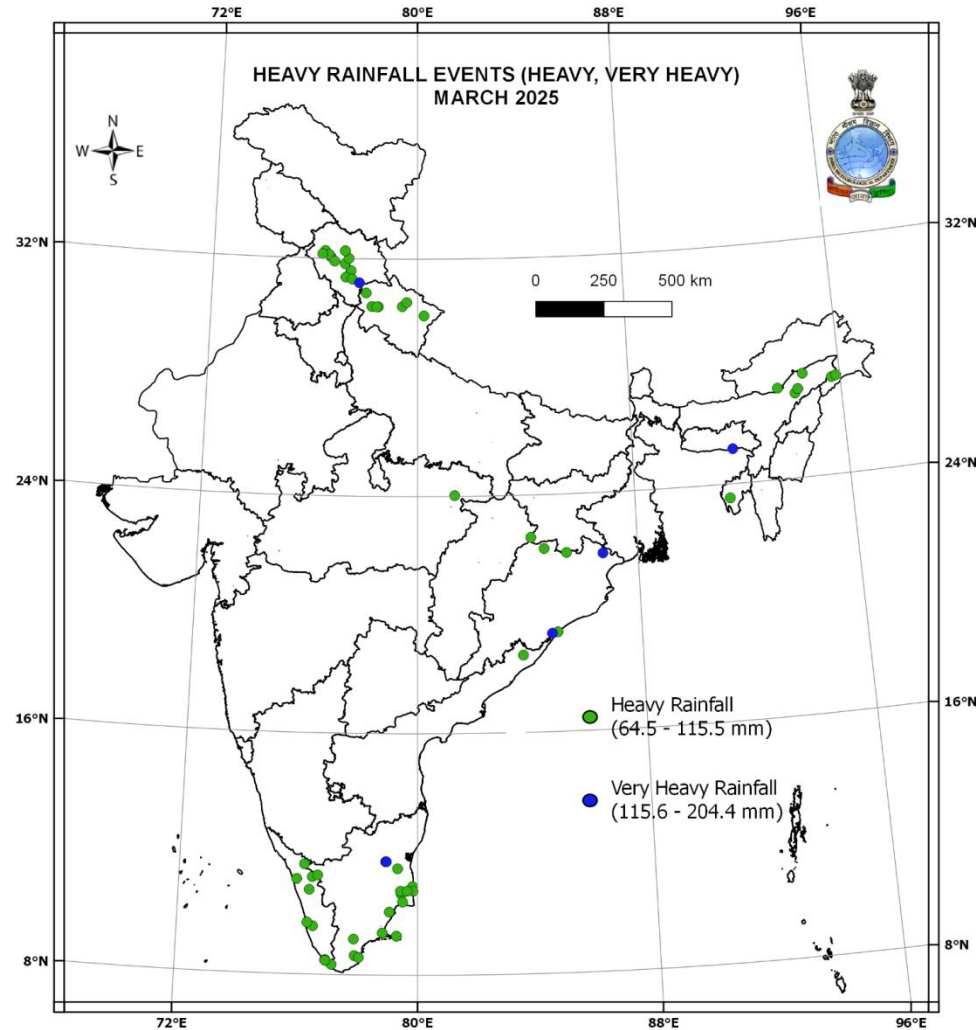


Rainfall over South Peninsular India (20.7 mm) till 31st March was 24th highest since 1901 and was 8th highest since 2001



Heavy Rainfall Events occurred in March 2025

Location of Heavy Rainfall events occurred March 2025



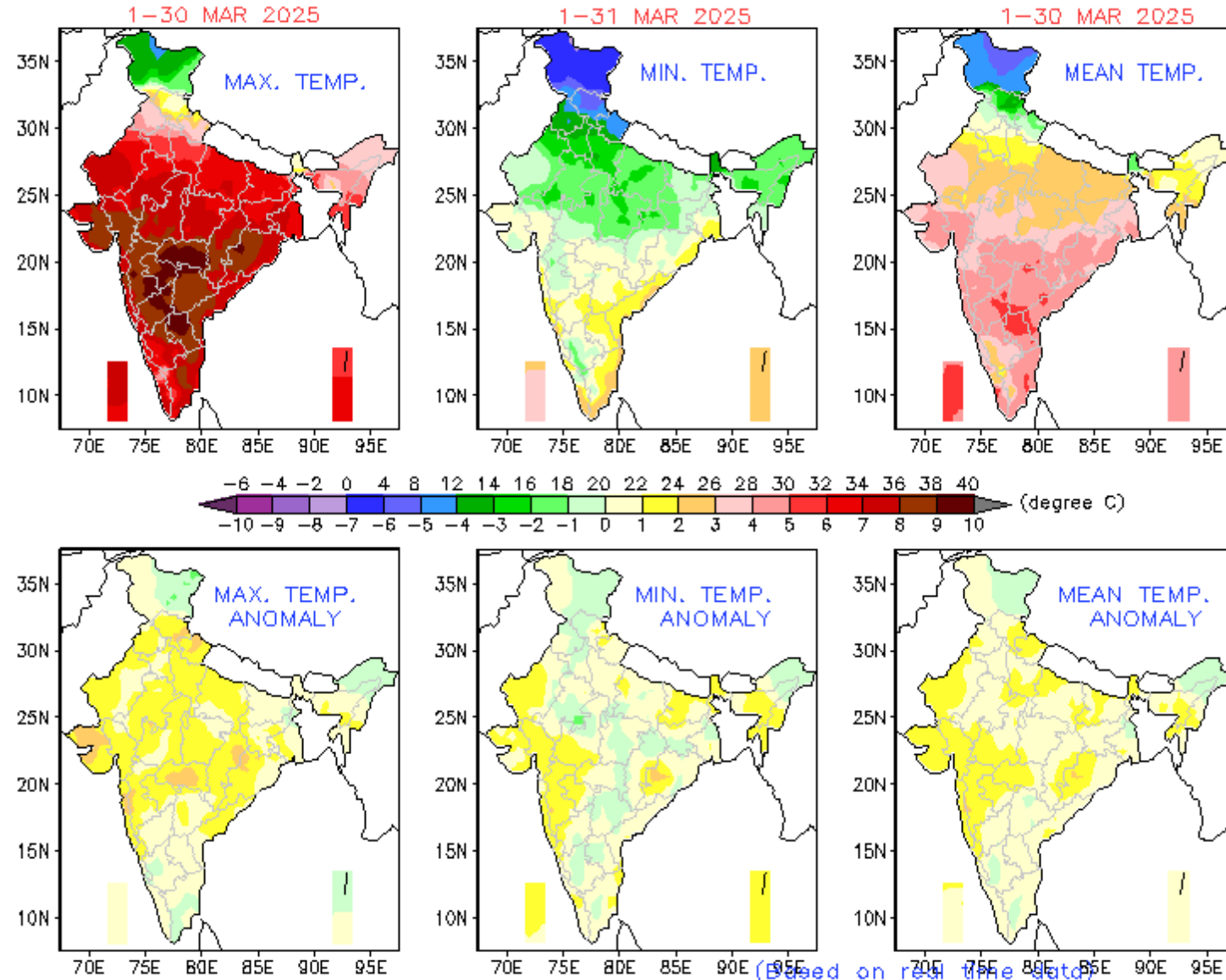
Number of very Heavy/Ext. Heavy Rainfall events occurred in the month of March during last 5 years.

YEAR	Rainfall Category	Number of stations reported Events
2021	Heavy (64.5 to 115.5)	13
	V. Heavy (115.6 to 204.5)	1
	Ext Heavy (more than 204.5)	0
2022	Heavy (64.5 to 115.5)	13
	V. Heavy (115.6 to 204.5)	4
	Ext Heavy (more than 204.5)	2
2023	Heavy (64.5 to 115.5)	100
	V. Heavy (115.6 to 204.5)	5
	Ext Heavy (more than 204.5)	0
2024	Heavy (64.5 to 115.5)	58
	V. Heavy (115.6 to 204.5)	6
	Ext Heavy (more than 204.5)	0
2025	Heavy (64.5 to 115.5)	60
	V. Heavy (115.6 to 204.5)	6
	Ext Heavy (more than 204.5)	0



Temperature during March 2025

(TEMPERATURE & ITS ANOMALY FOR THE MONTH TILL DATE)



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Temperatures during March 2025 for all India and homogeneous regions with its top ranks since 1901

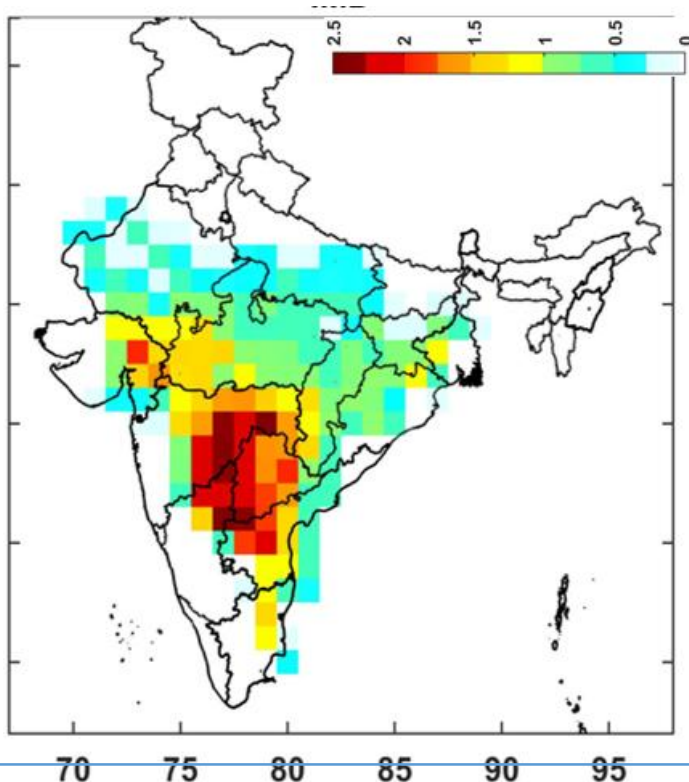
MAR 2025		Max Temp (°C)	Min Temp (°C)	Mean Temp (°C)
ALL INDIA	ACTUAL	32.65	18.32	25.48
	NORMAL	31.70	17.71	24.71
	ANOMALY	0.95	0.61	0.78
	Rank since 1901	14	12	11
NORTHWEST INDIA	ACTUAL	28.86	13.59	21.22
	NORMAL	27.64	13.37	20.51
	ANOMALY	1.21	0.22	0.72
	Rank since 1901	19	28	22
EAST & NORTHEAST INDIA	ACTUAL	30.39	17.79	24.09
	NORMAL	29.86	16.94	23.40
	ANOMALY	0.53	0.85	0.69
	Rank since 1901	34	7	15
CENTRAL INDIA	ACTUAL	36.03	20.00	28.01
	NORMAL	34.73	19.10	26.92
	ANOMALY	1.30	0.89	1.10
	Rank since 1901	11	8	8
SOUTH PENNINSULAR INDIA	ACTUAL	35.03	22.78	28.91
	NORMAL	34.60	22.27	28.44
	ANOMALY	0.43	0.51	0.47
	Rank since 1901	10	9	6

Note : Values are rounded off to nearest two decimal



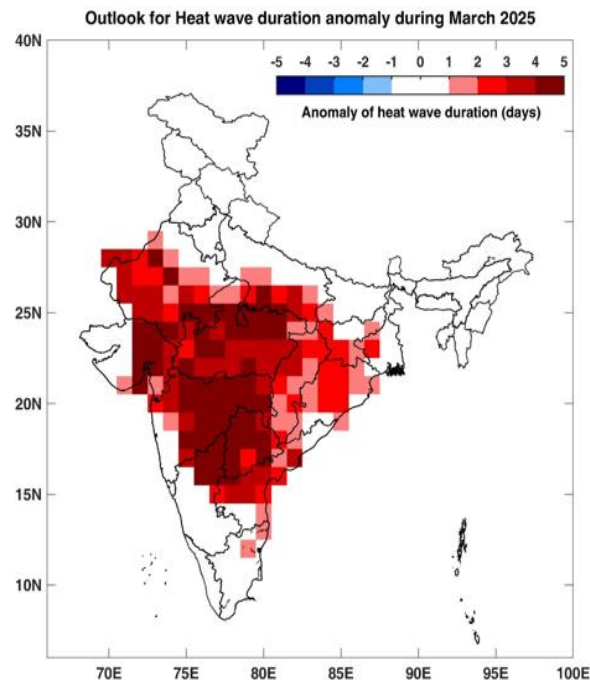
Forecast vs Observed of Heat wave during March 2025

Climatology of Heatwave Days

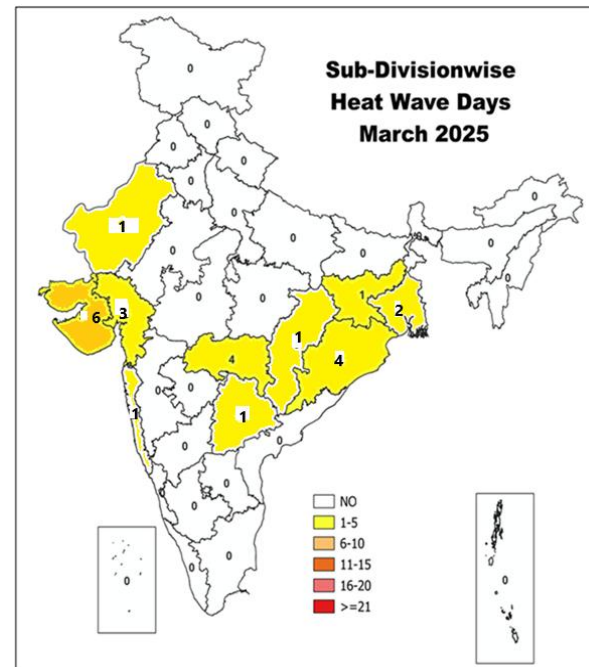


- Forecast heat wave days: Above normal heatwave days over Rajasthan, Vidarbha, Gujarat, Madhya Pradesh, Maharashtra, adjoining Uttar Pradesh, south Jharkhand, adjoining West Bengal, Odisha, Chhattisgarh, Telangana, Andhra Pradesh, and parts of north interior Karnataka

Forecast of HW Days

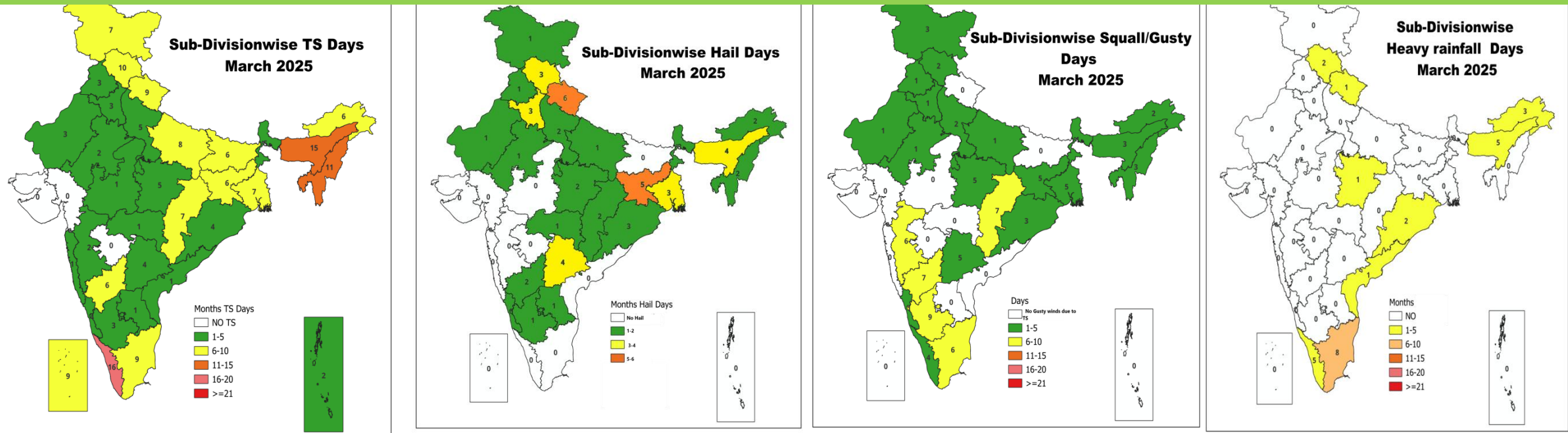


Observed Heat wave Days



- Observed Heat Wave days : Heat wave was mainly observed over Western India during 10-15 March and east Central India during and 15-18 March. Above normal heatwave days observed Gujarat and Odisha. 3-6 days of heat wave in different parts of these sub-Divisions

Western Disturbances, Heavy rainfall and TS related severe weather during March 2025



- Four Active WDs impacted NW and Eastern India(2-5, 12-17, 18-22 and 23-27 March). Each of these WDs caused longer wet spell of RA/Snow lasting for about 3-5 days over the Western Himalayan Region.
- ✓ Also, these WDs triggered Thunderstorm and accompanied hazards like hailstorm and wind, lightning over these areas.
- ✓ In the rear sector of these WDs, Stronger northwesterly winds prevailed for 2-4 days.
- ✓ Colder day temp across IGP region due to such stronger wind conditions(upto 25-35 gusting 45kmph during 4-7, 17-20 March and 27-29 March).
- ✓ Wet spell over East central India during 18-23 March, 2025- **Moderate to severe thunderstorm reported mainly in Odisha, Gangetic West Bengal, Jharkhand and Chhattisgarh accompanied with hailstorm over these areas during most of the days.** The spell was mainly due to north-south lower level wind convergence over the region and westerly trough in middle and upper troposphere.
- ✓ **An intense Hail Storm Event occurred in Mayurbhanj District, Odisha in Bisoi and Bangiriposhi blocks during 0720 and 0830 pm of 20 March 2025 with very big size Hail stone with estimated Diameter of 6cm and weight of 300-500 grams causing widespread damage.**

An intense Hail Storm Event occurred in Mayurbhanj District, Odisha in Bisoi and Bangiriposhi blocks during 0720 and 0830 pm of 20 March 2025 with very big size Hail stone with estimated Diameter of 6cm and weight of 300-500 grams causing widespread damage



LEGEND:

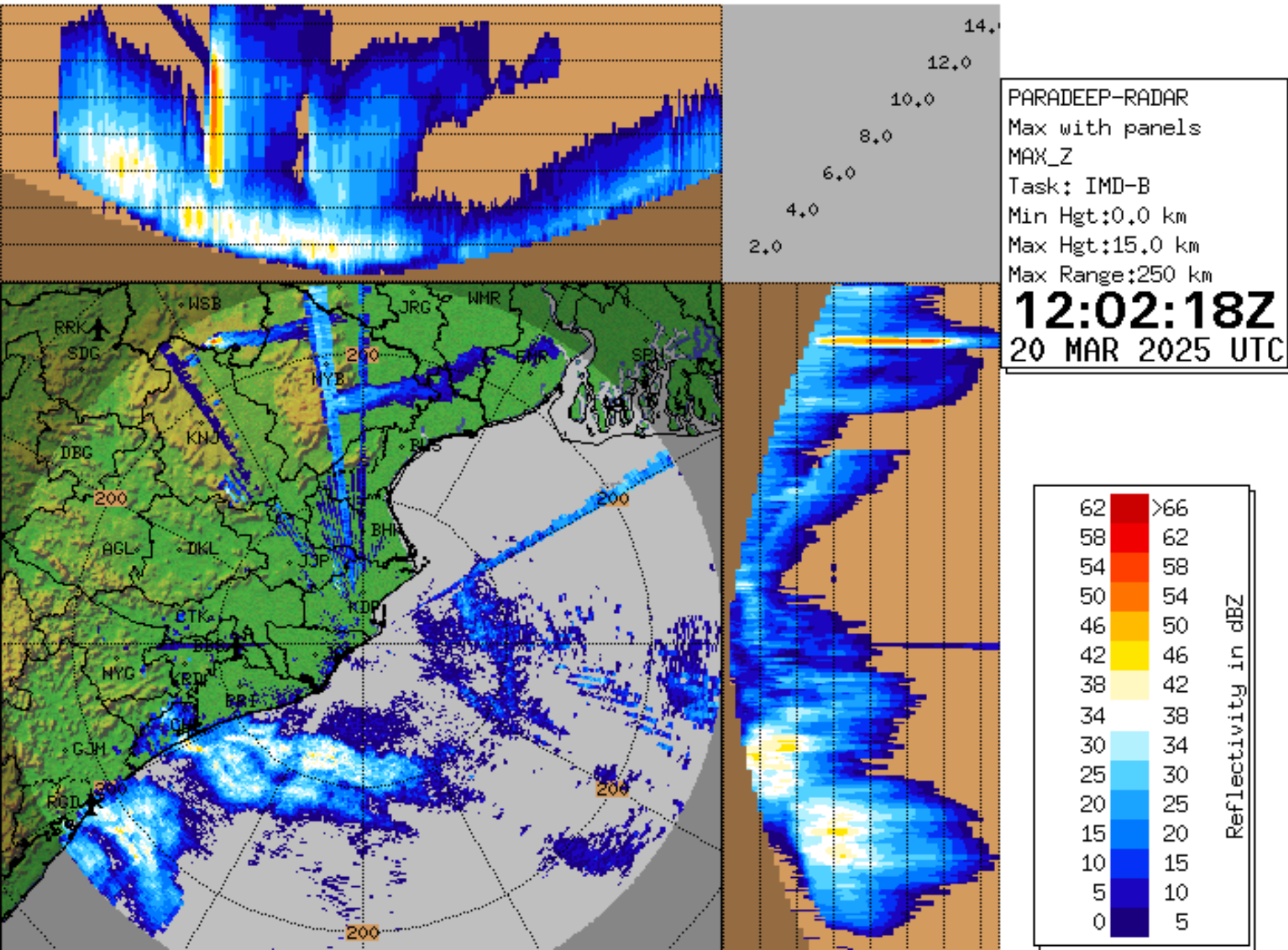
BLUE AREA : AFFECTED AREA BY HAIL STORMS

RED AREA : MOST AFFECTED AREA BY HAILSTORMS



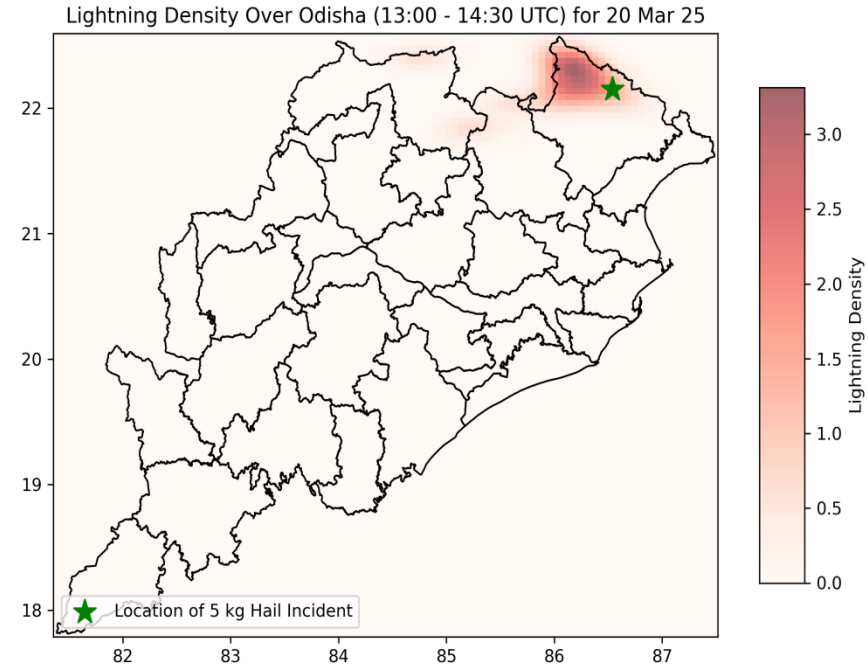
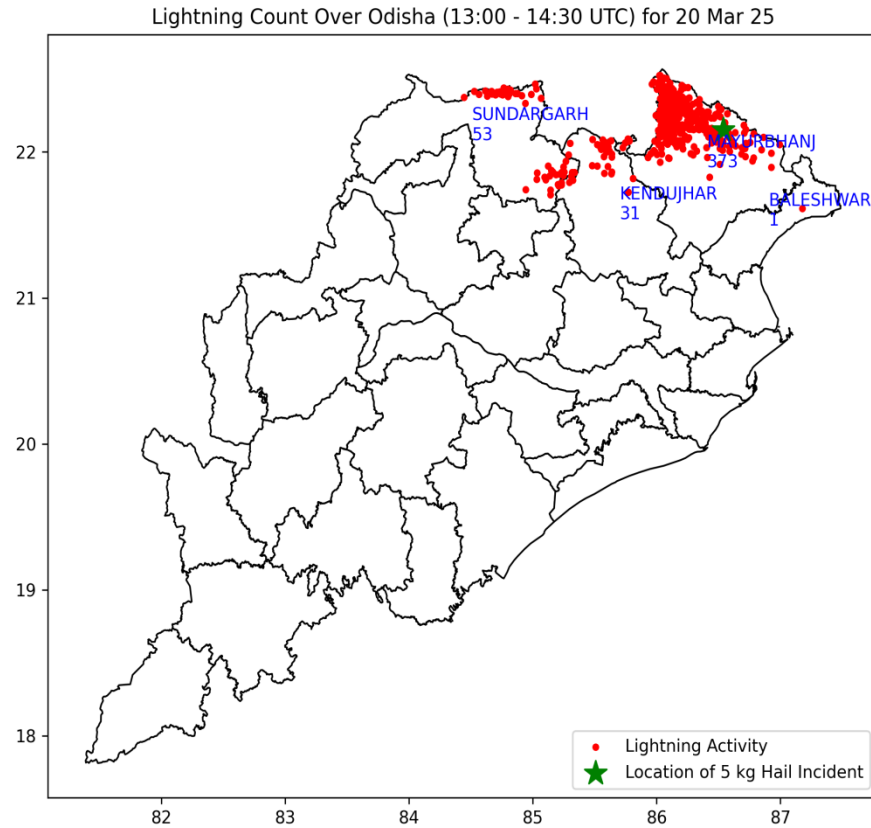
- The event was due to north-south lower level wind convergence over the region and





Animation from DWR
Pradeep which
captured the **unique**
Hail Storm Event
in
Mayurbhanj
District, Odisha
(Bisoi and
Bangiriposhi
Blocks during 0720
and 0830pm–
Estimated Diameter
of 6cm)

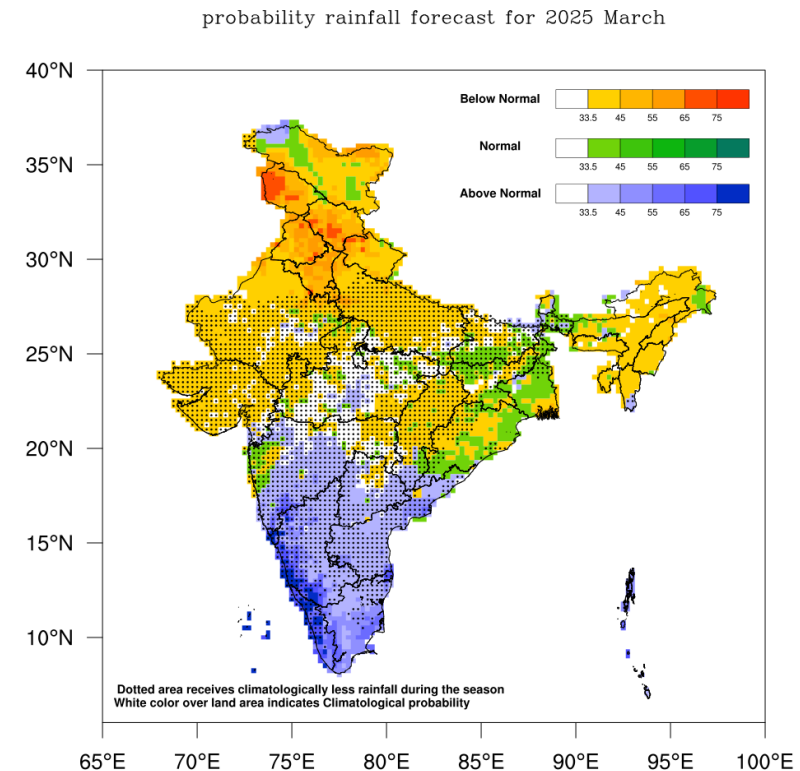
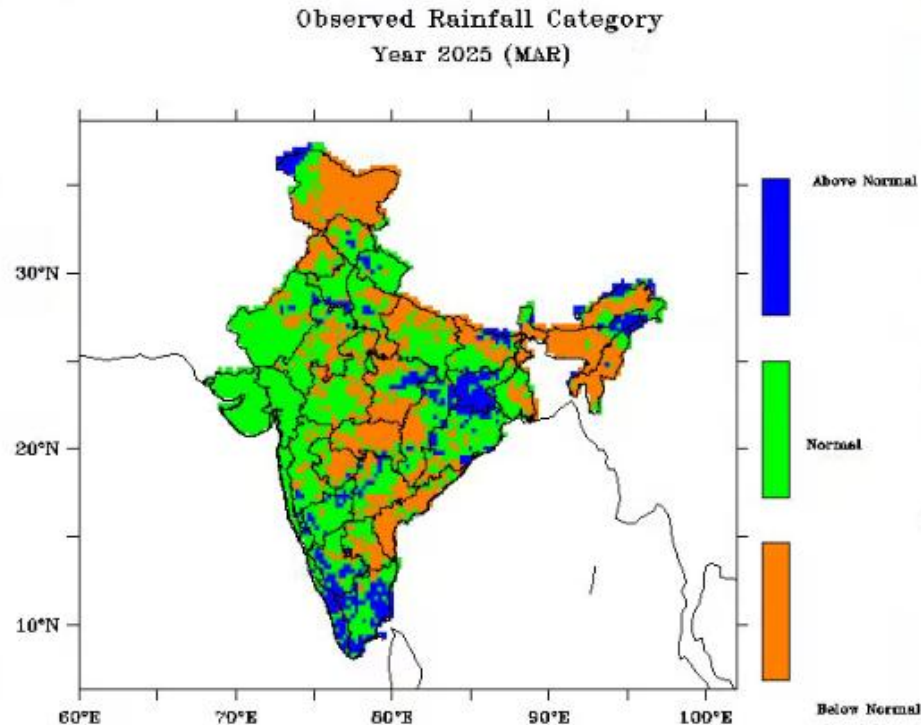
Observed Lightning Activity During 18:30 hrs IST to 2000 hrs IST of 20 March 25



**Latitude and Longitude of Hail Incident Lat: 22.15 deg N , Lon: 86.54 deg E
(Collected from Local People of Mayurbhanj District)**

Observed Rainfall Category

Rainfall forecast for March 2025 (issued on 28 February 2025)

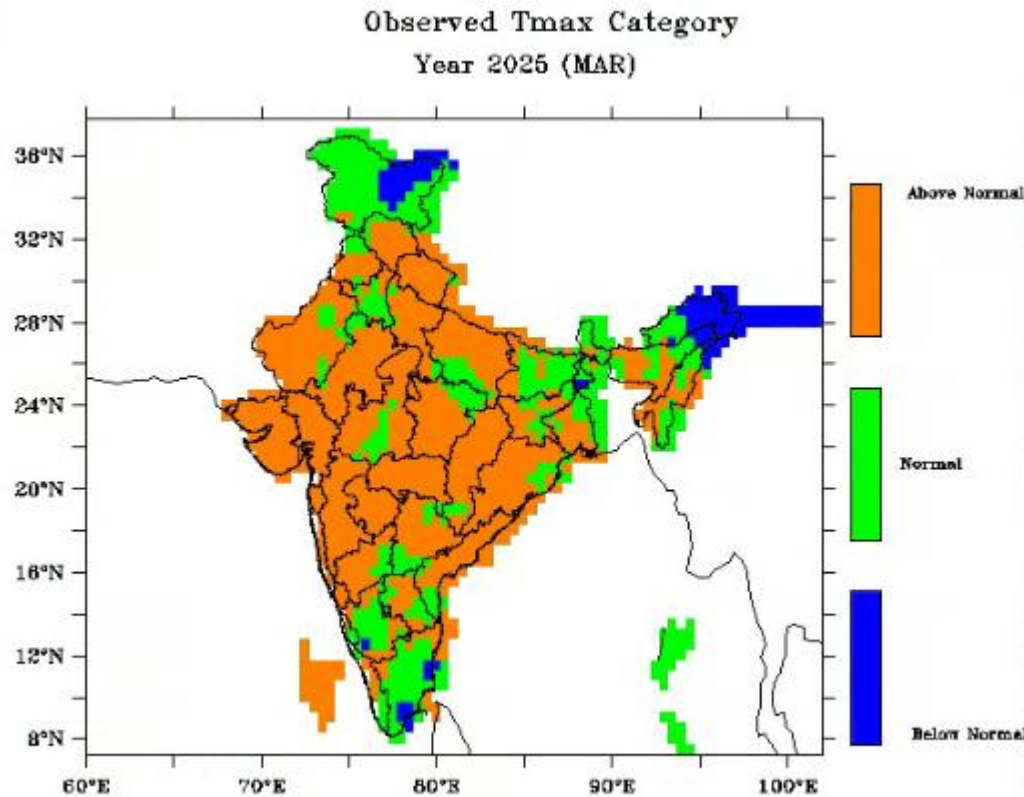


- ❖ Above-normal to normal rainfall received over many areas of the South Peninsular India. The March Rainfall outlook correctly indicates normal to above-normal rainfall over south Peninsular India and Eastern India

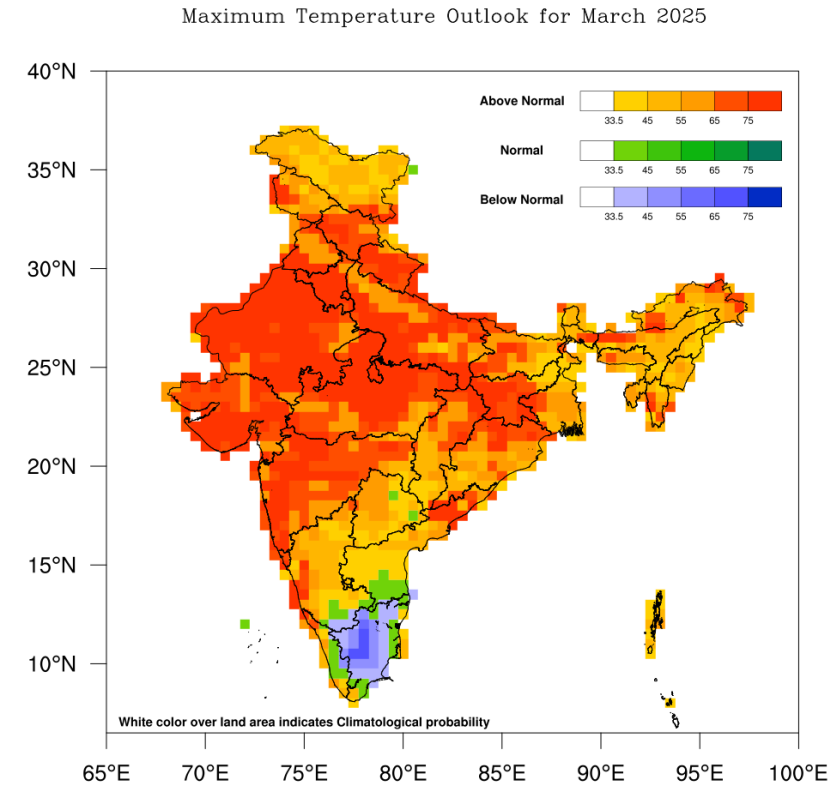


Verification of March 2025 Temperature (Tmax) forecast

Observed Temperature (Tmax) Category



Maximum Temperature forecast for March 2025 (issued on February 2025)

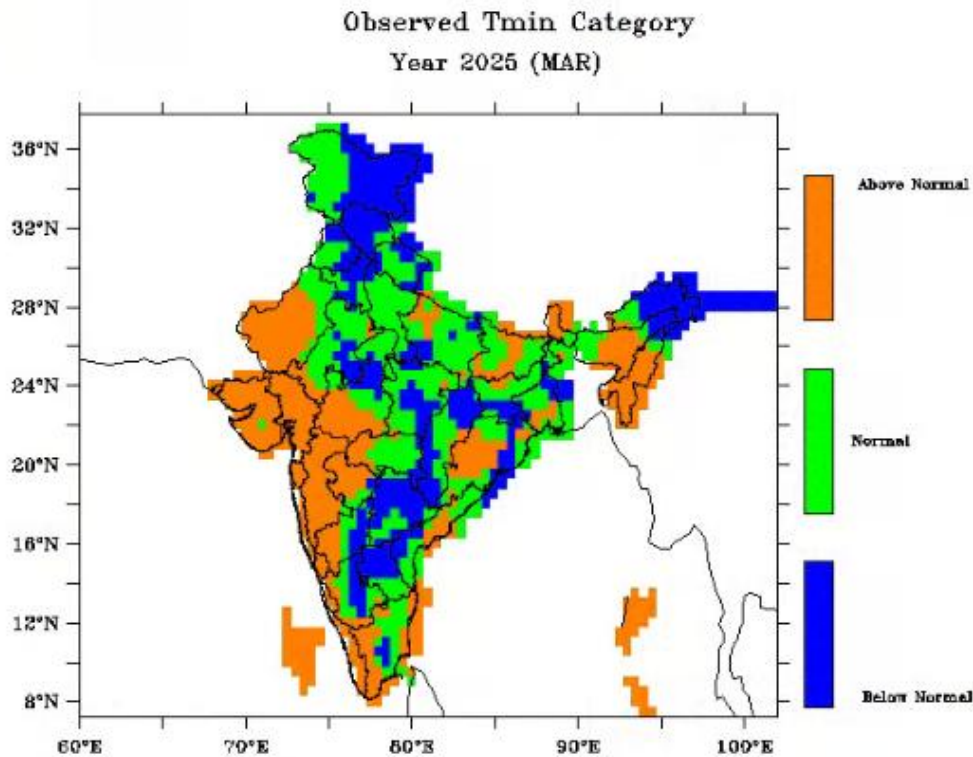


- ❖ Normal to above normal Maximum Temperature was experienced over most parts of the country except some regions over the South Peninsular India, northwest and Northeast India. Below normal maximum temperature was observed over some regions over NE India, NW India and Peninsular India.
- ❖ The comparison indicates that the Maximum Temperature outlook matched well over many regions of the country.

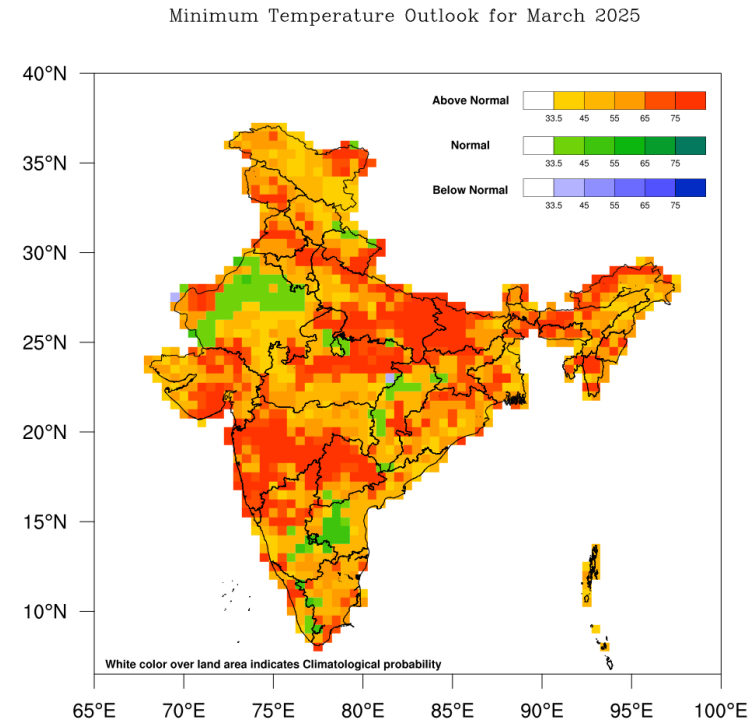


Verification of March 2025 Temperature (Tmin) forecast

Observed Temperature (Tmin) Category



Minimum Temperature forecast for March 2025 (issued on 28 February 2025)

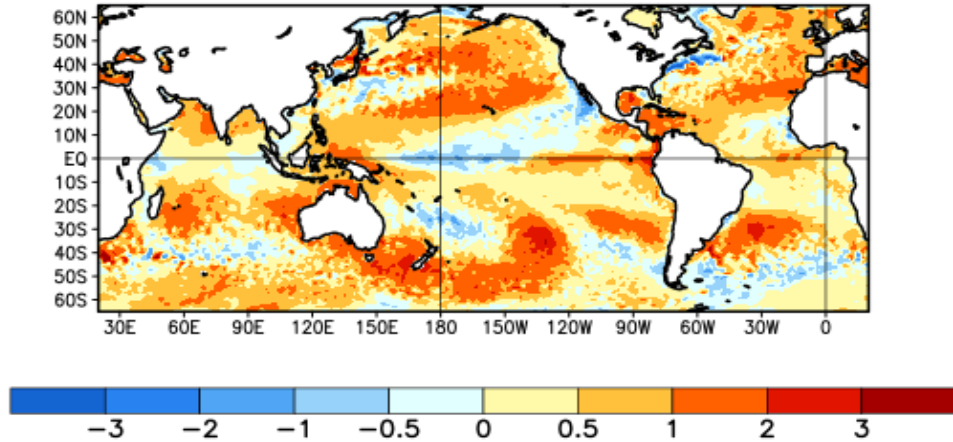


- ❖ Normal to below normal Minimum temperature was experienced over many parts of the country except some areas over Central India, Peninsular India and NE India where it was above normal.
- ❖ The comparison indicates that the above-normal Minimum Temperature outlook matched over some regions of Central, Peninsular and NE India.



Latest Global SST Departures (°C) and ENSO Conditions over Pacific

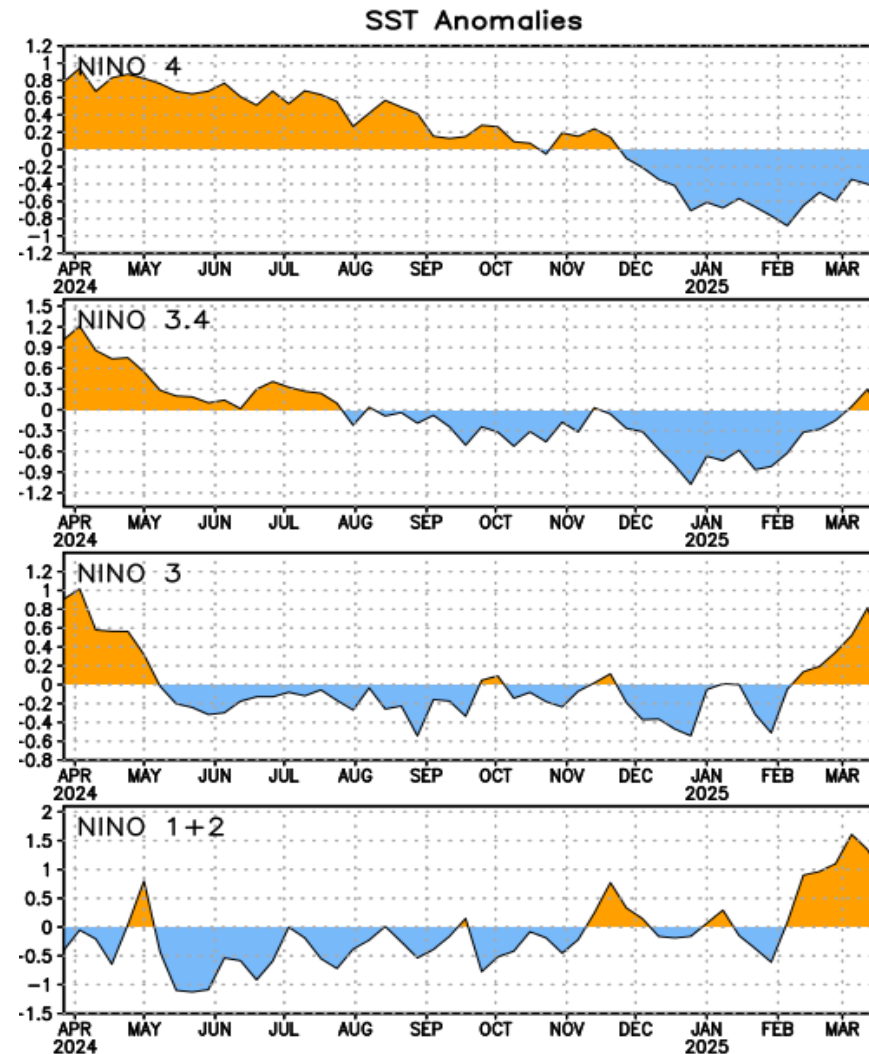
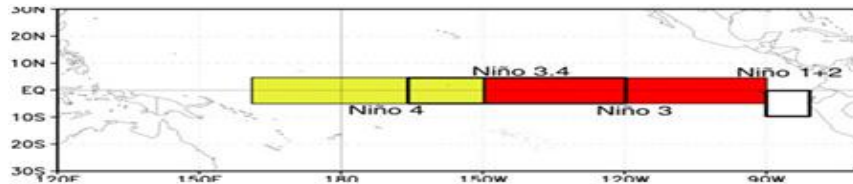
Average SST Anomalies
23 FEB 2025 – 22 MAR 2025



The latest weekly SST
departures are:

Niño 4	-0.5°C
Niño 3.4	-0.1°C
Niño 3	0.3°C
Niño 1+2	0.9°C

Data source
CPC, USA



Data source
CPC, USA

Equatorial SSTs were above average in the eastern and far western Pacific Ocean and in most of the Atlantic Ocean. Below-average SSTs were evident in the central Pacific Ocean and in the far western Indian Ocean.

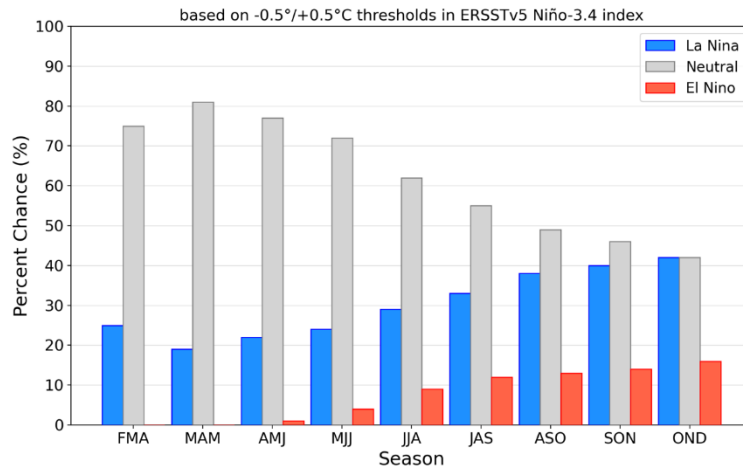


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Latest ENSO & IOD Forecast: March 2025

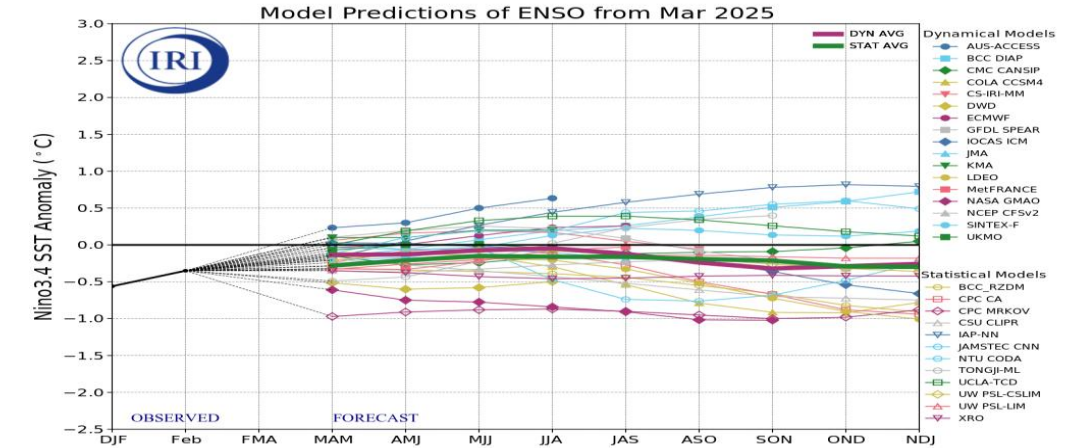
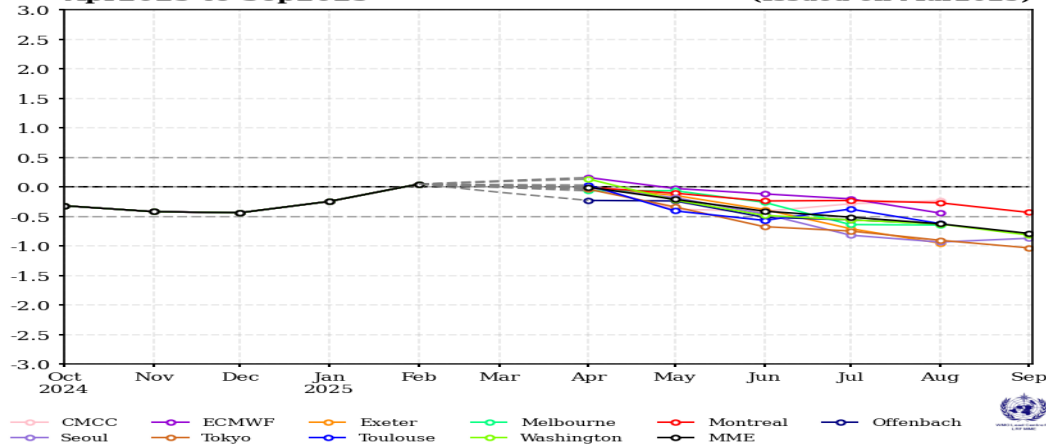
Official NOAA CPC ENSO Probabilities (issued March 2025)



ENSO

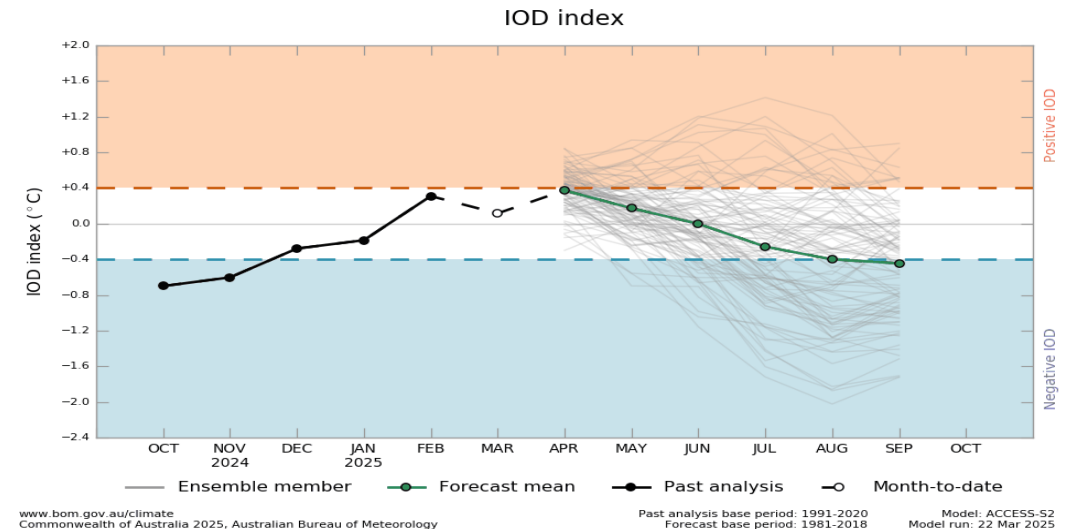
A transition to ENSO-neutral most likely during April 2025 (75% chance) and is favored to persist through the Northern Hemisphere summer 2025.

Forecast of DMI(the Indian Ocean Dipole Mode Index)
Apr2025 to Sep2025
(Issued on Mar2025)



Most models favour ENSO-neutral to prevail into the Northern Hemisphere fall 2025.

IOD



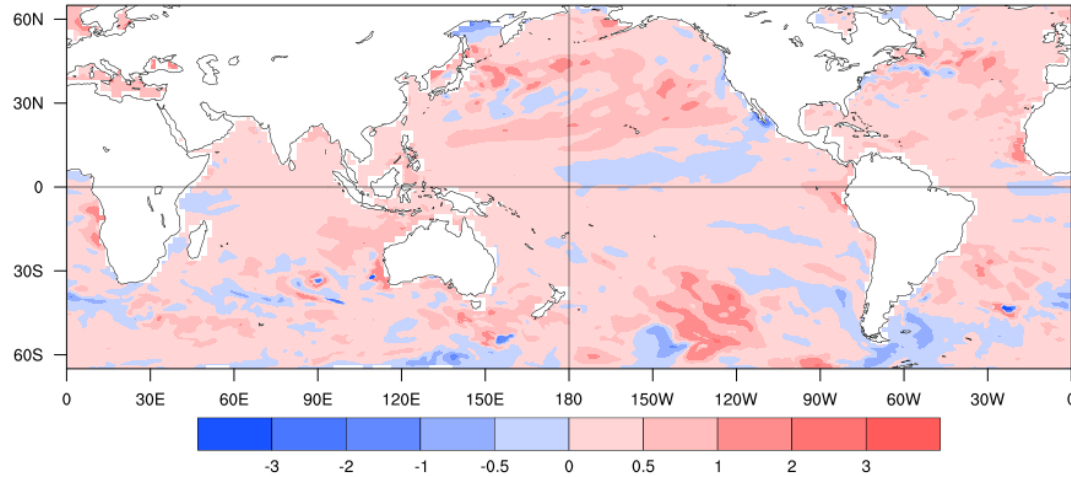
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ENSO Forecast - MMCFS: March IC

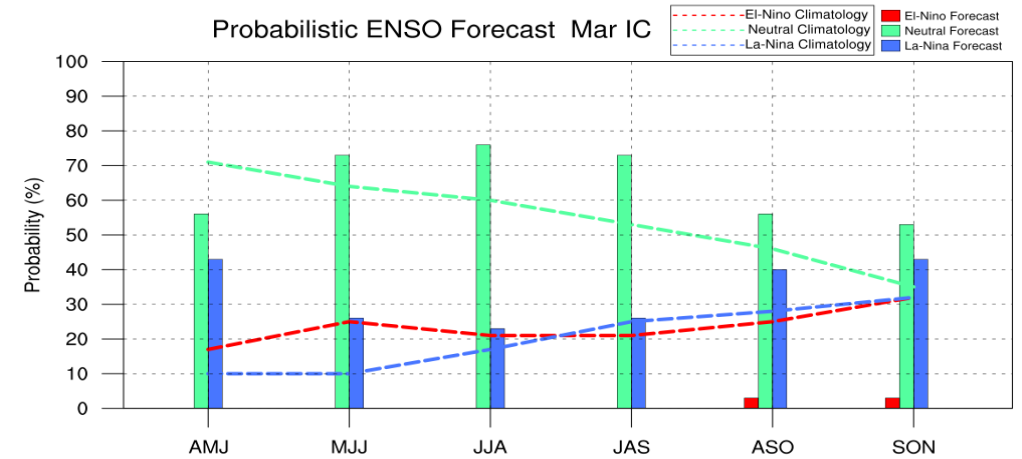
SST Forecast: April to June 2025

MMCFS SST Anomaly Forecast for AMJ:Mar IC 2024
AMJ 2024

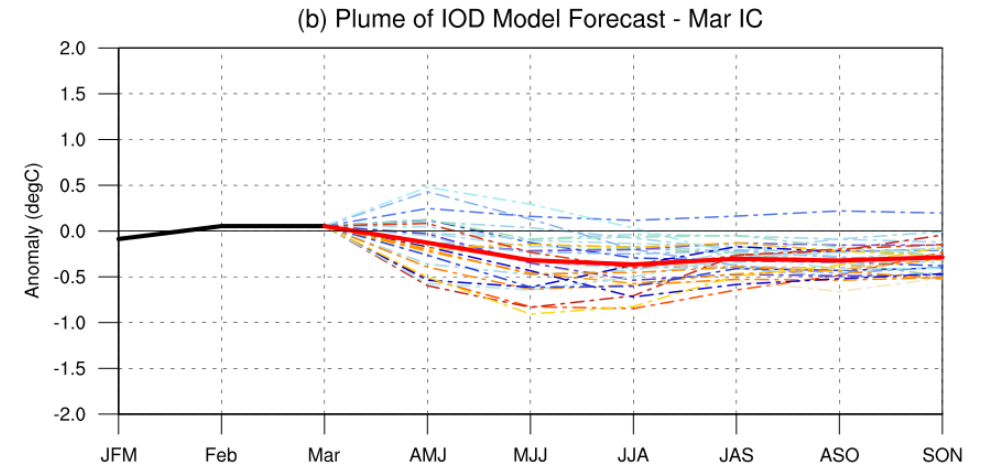


MMCFS forecast indicates highest probability for ENSO Neutral condition during April to June Season.

Probability of Nino 3.4 PDF Corrected Model Forecast – March IC



Plume of Nino 3.4 PDF Corrected Model Forecast – March IC



31-Mar-25

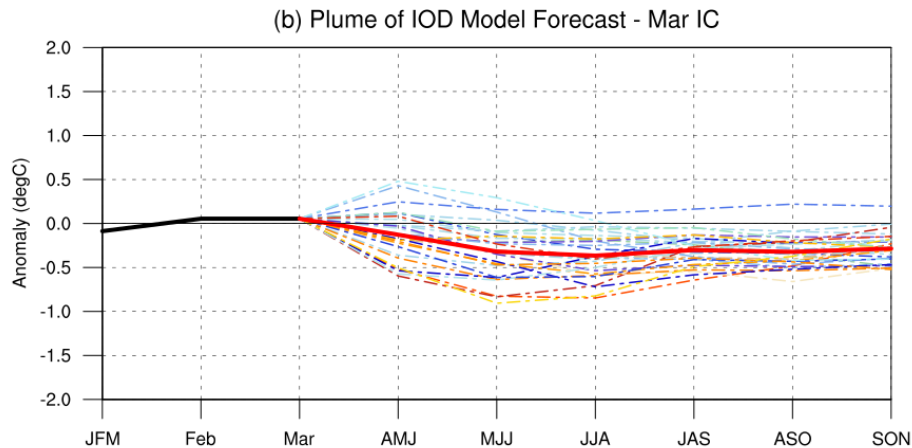
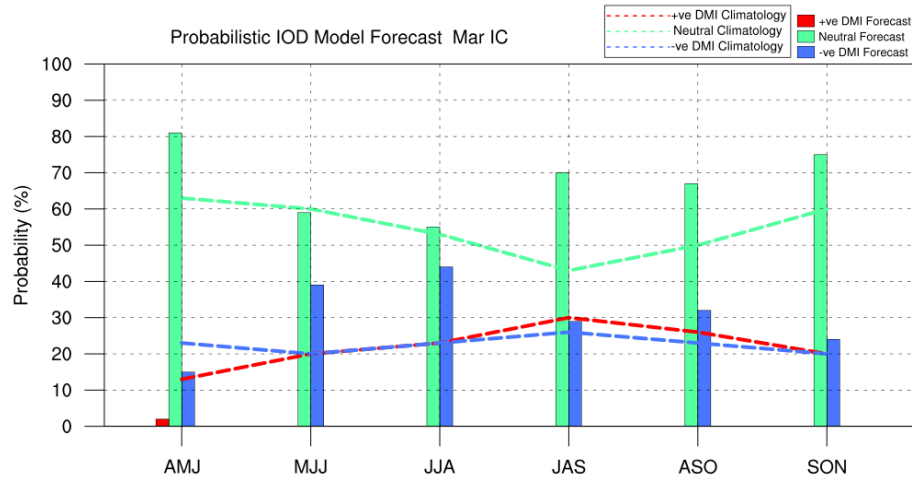


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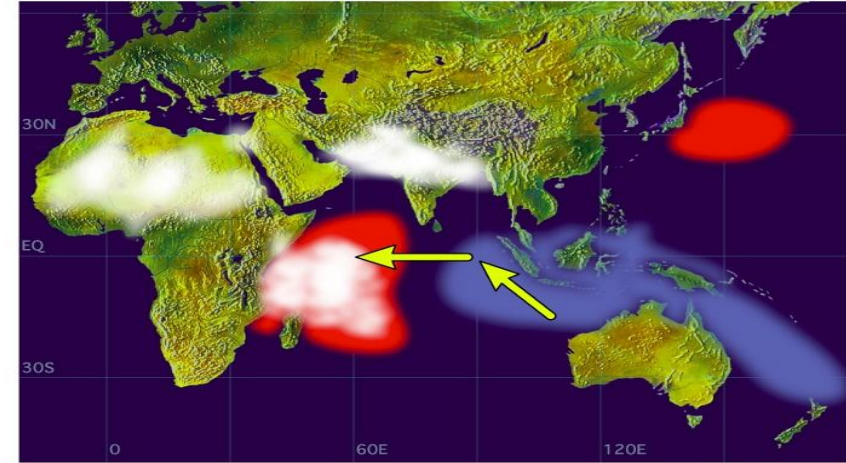


Indian Ocean Dipole Forecast: March 2025

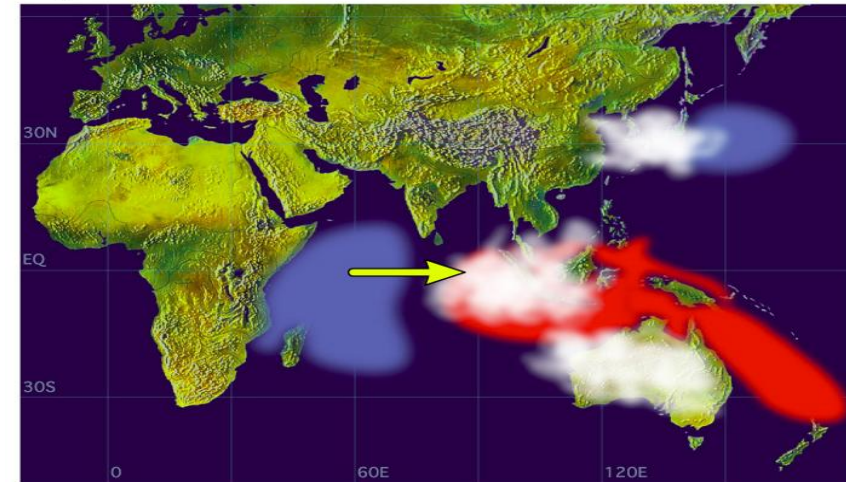
MMCFS Forecast: March IC



Positive Dipole Mode



Negative Dipole Mode



The latest MMCFS forecast indicates neutral IOD conditions are likely to continue during upcoming season.

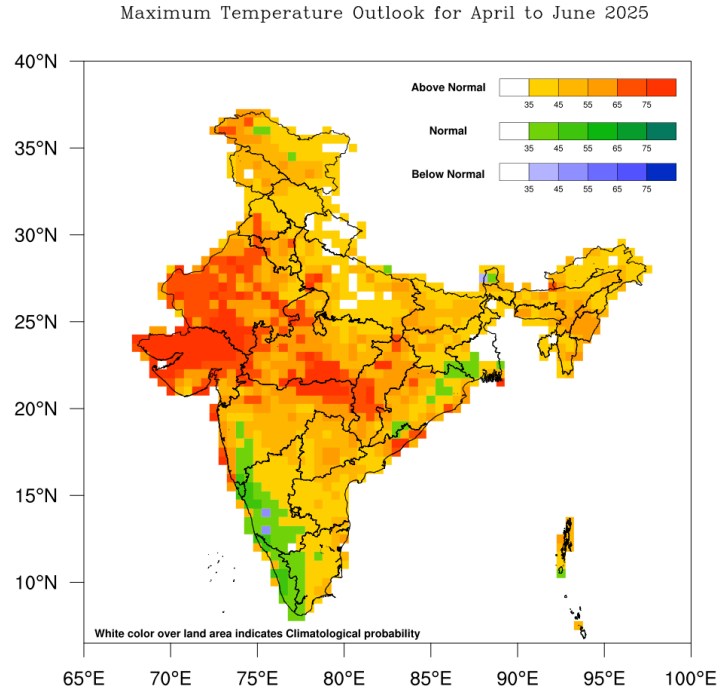


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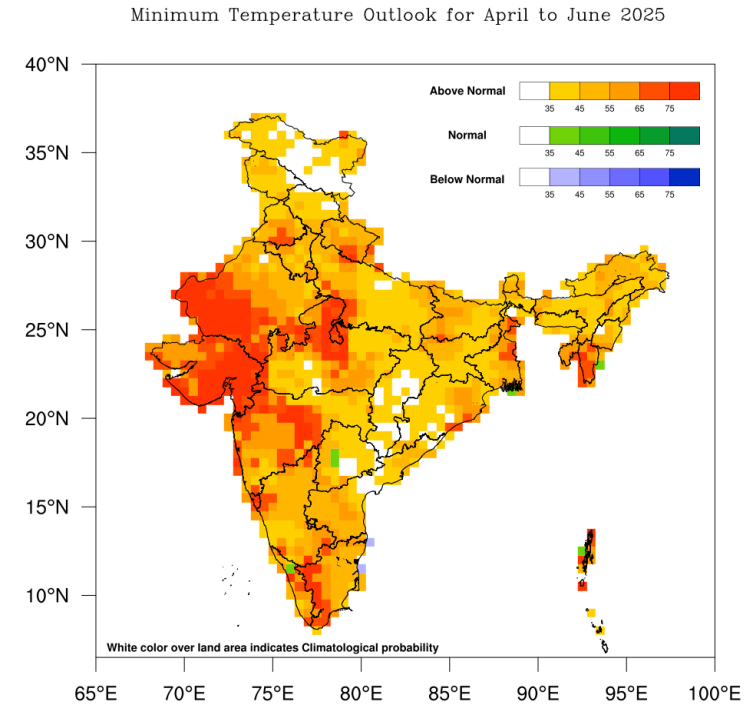


Temperature Outlook for April to June 2025 Season

Maximum Temperature



Minimum Temperature



During 2025 hot weather season (April to June (AMJ)), above-normal maximum temperatures are very likely over most parts of the country, except some parts of west peninsular India and isolated regions of east-central and east India where normal maximum temperatures are very likely.

During the season (AMJ), above-normal minimum temperatures are likely over most parts of the country.

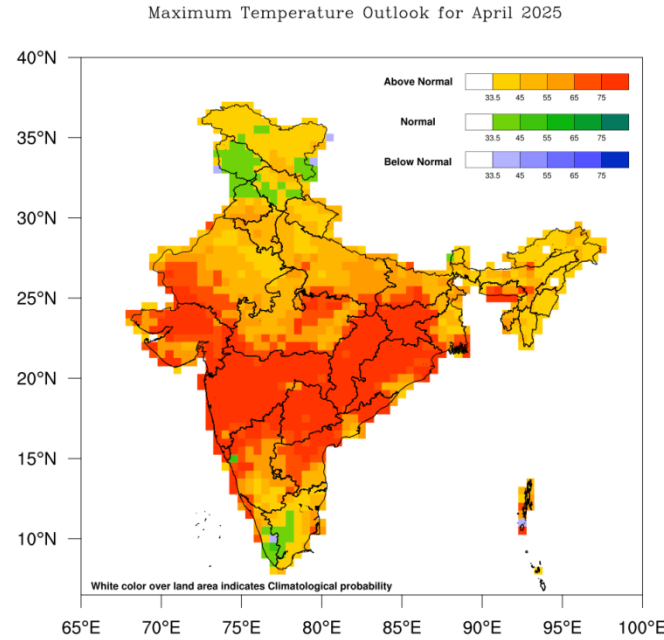


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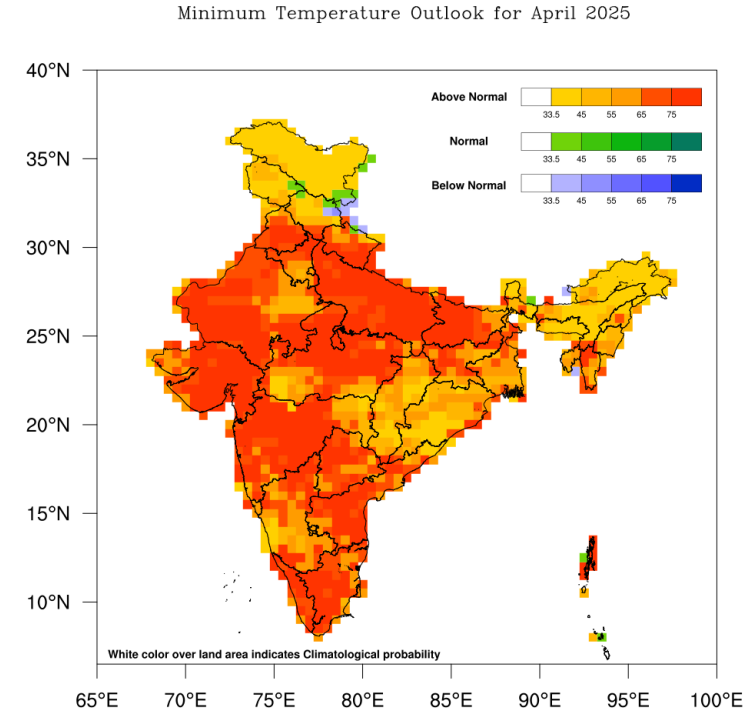


Monthly Temperature Outlook for April 2025

Maximum Temperature



Minimum Temperature



For the month of April 2025, above-normal maximum temperatures are likely over most parts of the country except some parts of extreme south peninsular India and northwest India, where normal maximum temperatures are likely.

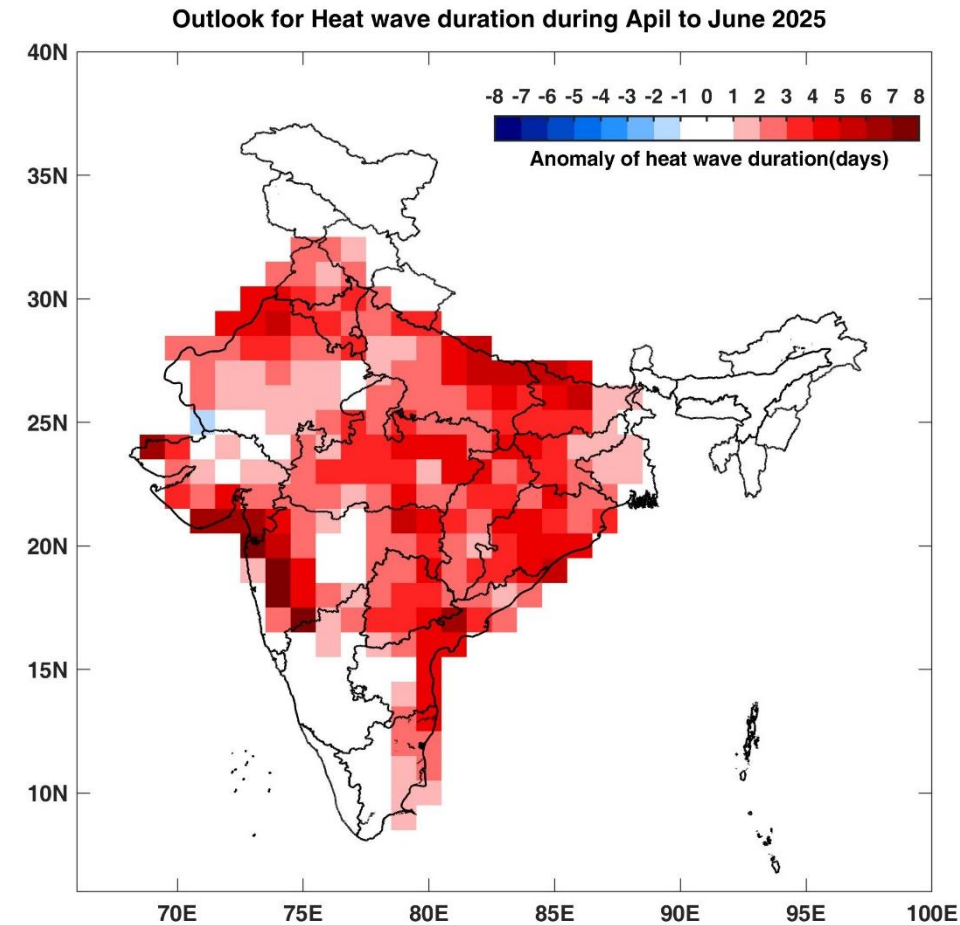
Above-normal minimum temperatures are very likely over most parts of India, except some isolated pockets over northwest and northeast India where normal to below-normal minimum temperatures are likely during April 2025.



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Heat wave outlook for April to June season 2025 based on the Multi Model Ensemble Forecasting System.



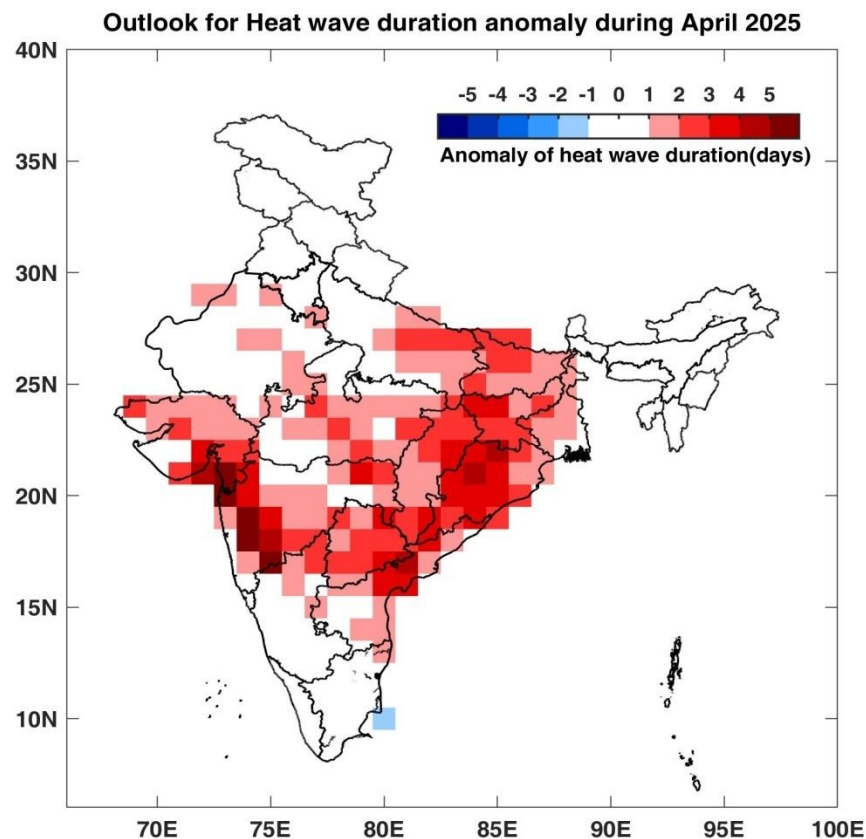
During April to June (AMJ) hot weather season, above-normal number of heatwave days are likely over most parts of the north & east peninsula, central India, east India, and plains of northwest India.

Above-normal heatwave days are expected over Rajasthan, Gujarat, Haryana, Punjab, Madhya Pradesh, Maharashtra, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Odisha, Chhattisgarh, Telangana, Andhra Pradesh, and northern parts of Karnataka & Tamil Nadu during April-June 2025

Probability forecast of the Heatwave events during April to June 2025 season over India. The probabilities were derived using the MME forecast prepared from a group of coupled climate models.



Heat wave outlook for April 2024 based on the Multi Model Ensemble Forecasting System.



During April 2025, above-normal number of heatwave days are likely over most parts of east and central India and adjoining peninsular India.

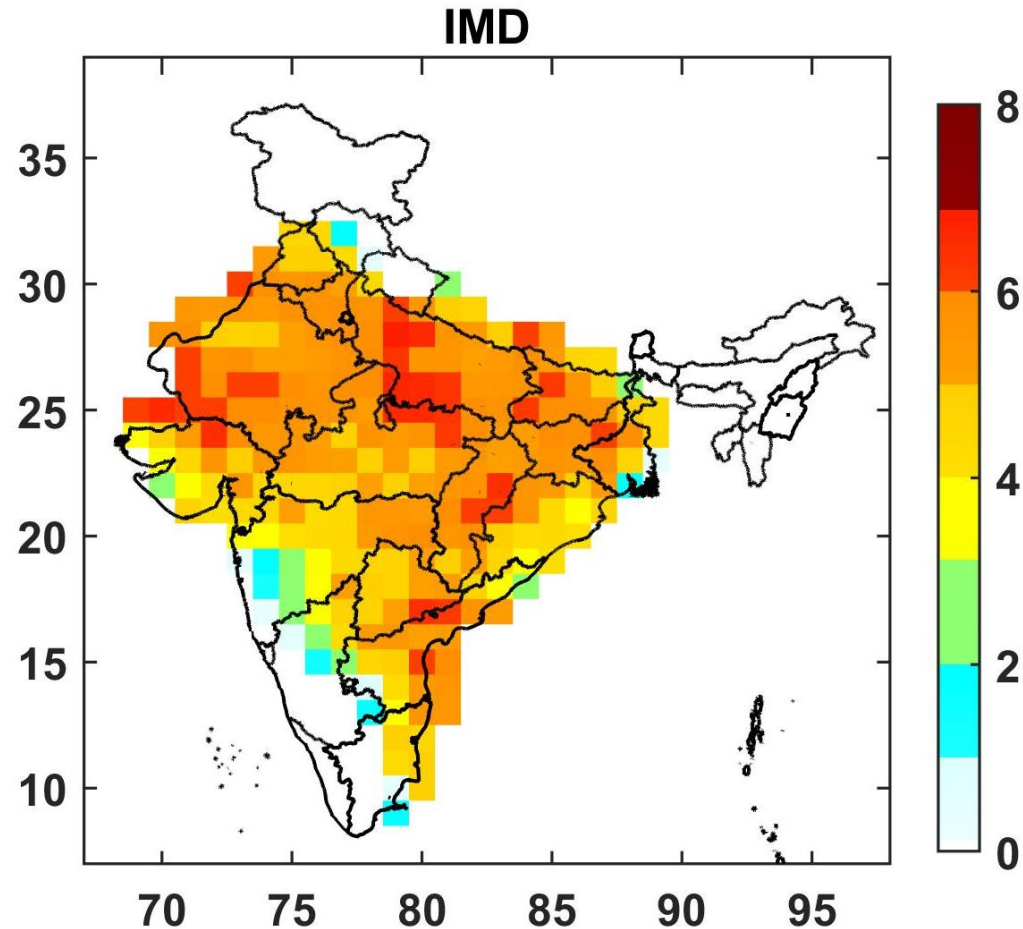
Above-normal heatwave days are expected over Gujarat, Madhya Pradesh, Maharashtra, east Uttar Pradesh, Jharkhand, West Bengal, Odisha, Chhattisgarh, Telangana, Andhra Pradesh, and northern parts of Karnataka during April 2025

Probability forecast of the Heatwave events during April 2025 over India. The probabilities were derived using the MME forecast prepared from a group of coupled climate models.

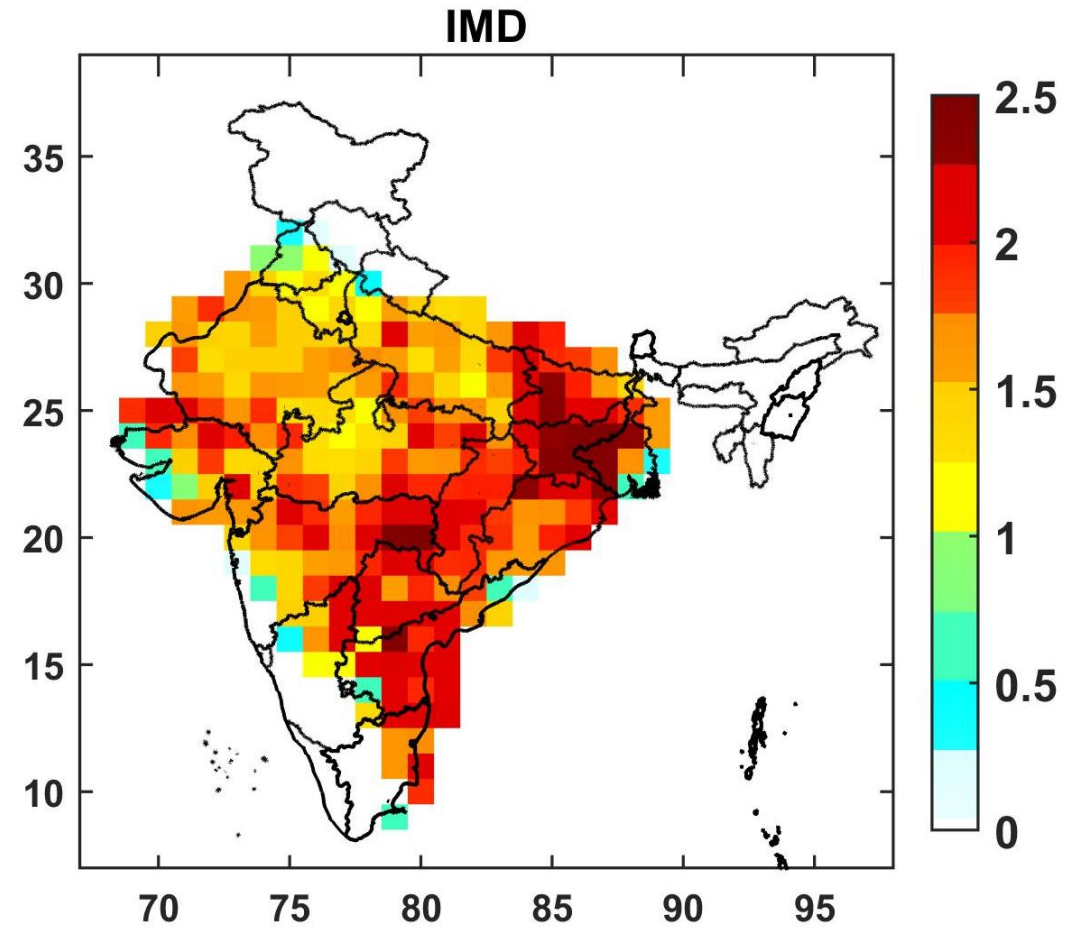


Heatwave Climatology (period 1993-2016)

Climatology of Heat Wave Duration (in days) for April to June (AMJ) season



Climatology of Heat Wave Duration (in days) for April Month (period 1993-2016)

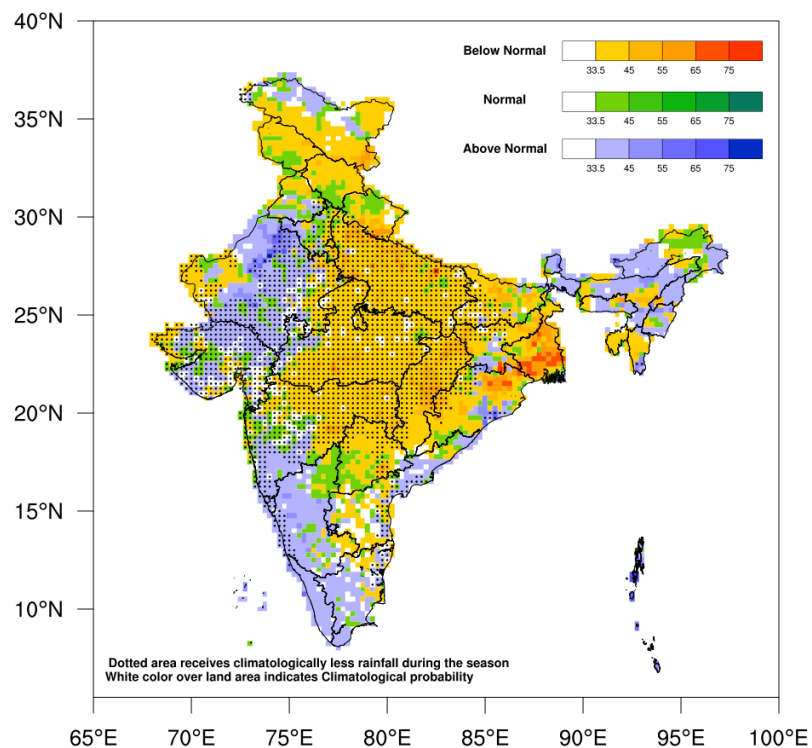


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Monthly Rainfall Probabilistic Forecast for April 2025

probability rainfall forecast for 2025 April



The rainfall averaged over North India is most likely to be normal (88-112% of Long Period Average (LPA)) during April, 2025.

The LPA of rainfall over North India and the country as a whole during April based on data from 1971-2020 is 39.2 mm.

Normal to above-normal rainfall is likely over many parts of northwest India, westcentral India, peninsular India, and northeast India. Below normal rainfall is likely in the rest of the country.

Probability forecast of tercile categories* (below normal, normal and above normal) for the April 2025 rainfall over India. The figure illustrates the most likely categories as well as their probabilities. The white shaded areas within the land area represent climatological probabilities. The probabilities were derived using the MME forecast prepared from a group of coupled climate models. (*Tercile categories have equal climatological probabilities, of 33.33% each).

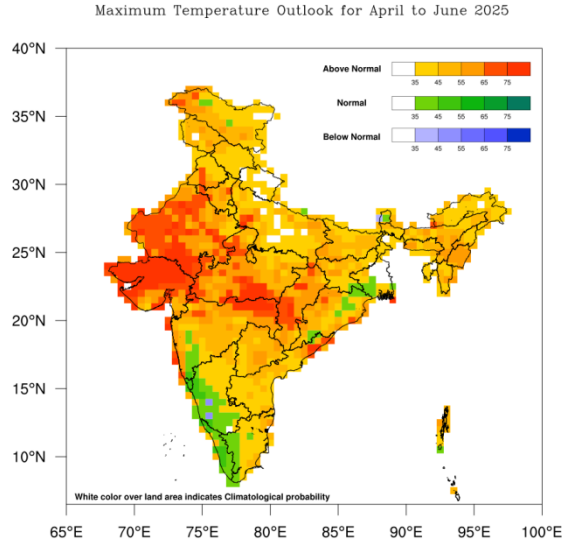


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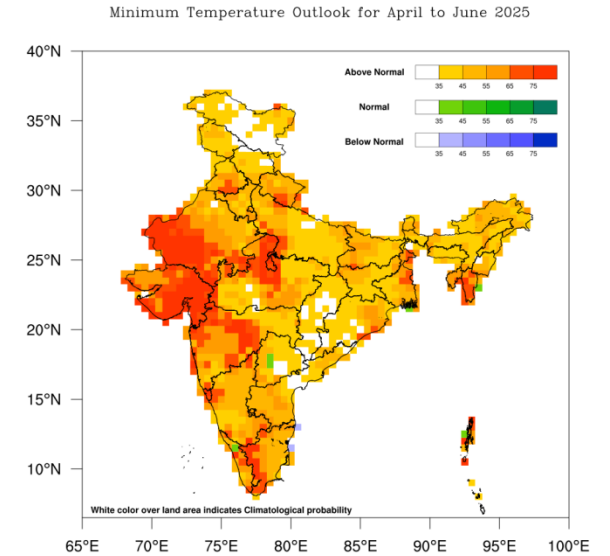
न्यूनतम एवं अधिकतम तापमान अप्रैल से जून (एएमजे/AMJ) 2025 के लिए संभाव्य पूर्वानुमान

अधिकतम तापमान



❖ 2025 के गर्म मौसम की ऋतु (अप्रैल से जून (एएमजे)) के दौरान, देश के अधिकांश भागों में सामान्य से अधिक अधिकतम तापमान रहने की संभावना है, सिवाय पश्चिमी प्रायद्वीपीय भारत के कुछ भागों और पूर्व-मध्य तथा पूर्वी भारत के कुछ क्षेत्रों के, जहां सामान्य अधिकतम तापमान रहने की संभावना है।

न्यूनतम तापमान

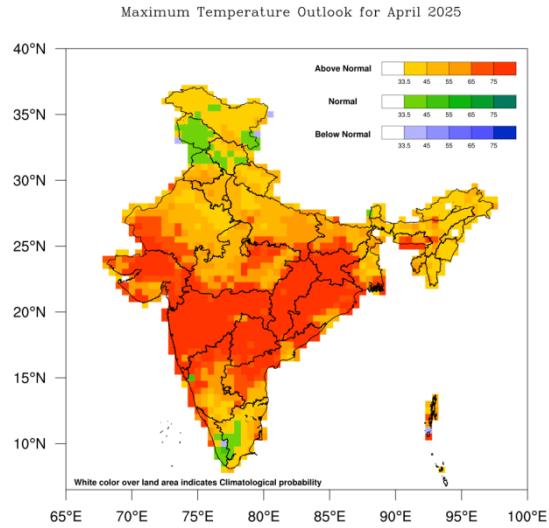


❖ ऋतु (अप्रैल मई जून/एएमजे) के दौरान, देश के अधिकांश भागों में सामान्य से अधिक न्यूनतम तापमान रहने की संभावना है, सिवाय उत्तर-पश्चिम भारत के कुछ इक्का-दुक्का इलाकों को छोड़कर, जहाँ सामान्य न्यूनतम तापमान रहने की संभावना है।



न्यूनतम एवं अधिकतम तापमान अप्रैल 2025 के लिए संभाव्य पूर्वानुमान

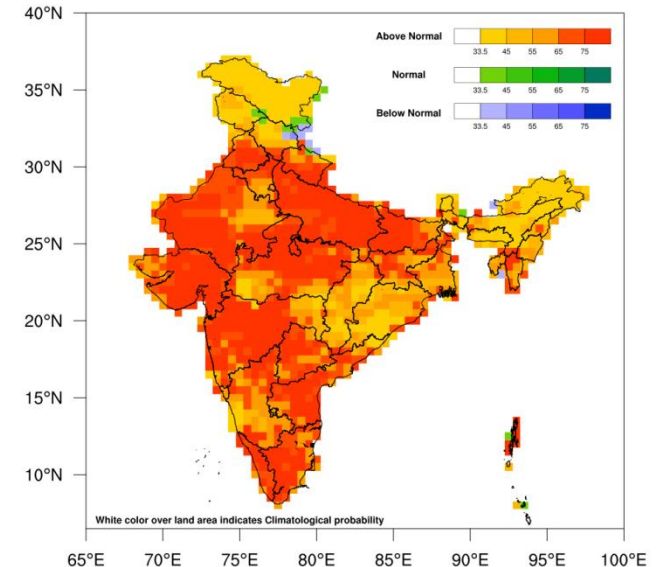
अधिकतम तापमान



❖ अप्रैल 2025 के महीने में, देश के अधिकांश हिस्सों में सामान्य से अधिक अधिकतम तापमान रहने की संभावना है, सिवाय दक्षिण प्रायद्वीपीय भारत और उत्तर-पश्चिम भारत के कुछ हिस्सों को छोड़कर, जहाँ सामान्य अधिकतम तापमान रहने की संभावना है।

न्यूनतम तापमान

Minimum Temperature Outlook for April 2025



❖ •भारत के अधिकांश भागों में सामान्य से अधिक मासिक न्यूनतम तापमान रहने की संभावना है, केवल उत्तर-पश्चिम और उत्तर-पूर्व भारत के कुछ इक्का-दुक्का इलाकों को छोड़कर, जहाँ अप्रैल 2025 के दौरान सामान्य से लेकर सामान्य से नीचे न्यूनतम तापमान रहने की संभावना है।

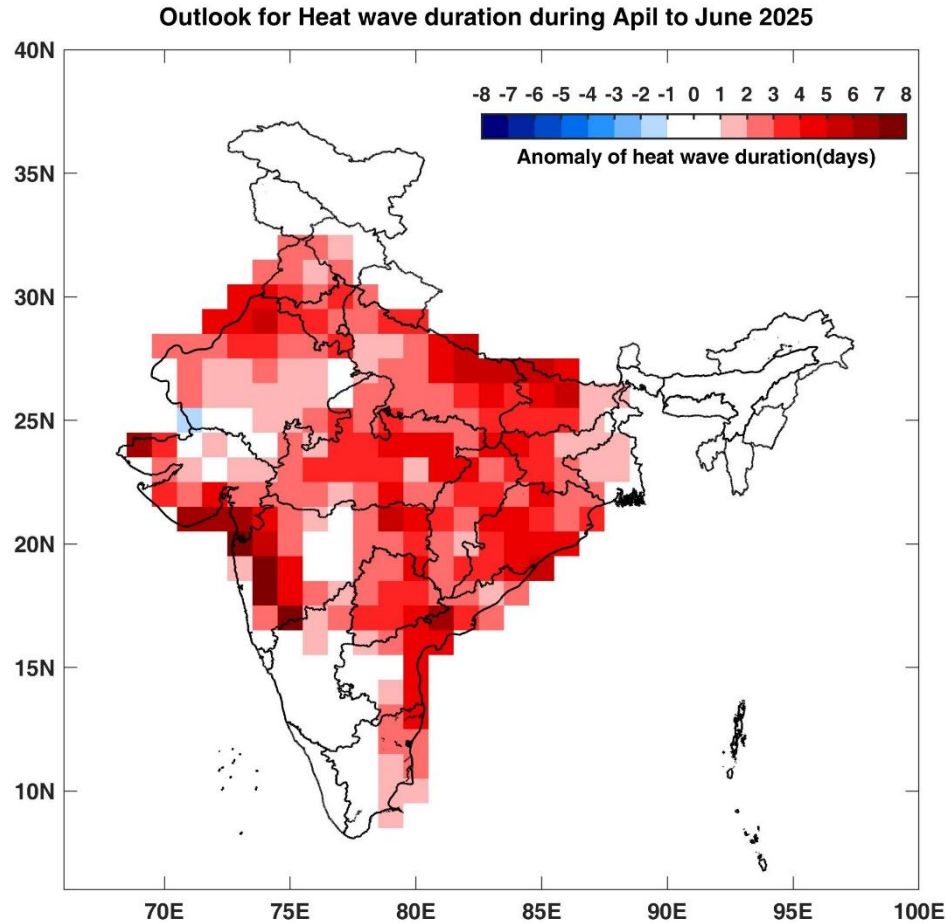


भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT



गर्म मौसम की ऋतु (अप्रैल से जून) 2025 के लिए उष्ण लहर / हीट वेव का आउटलुक

अप्रैल से जून 2025 के सीज़न के लिए हीटवेव घटनाओं का संभावित पूर्वानुमान।

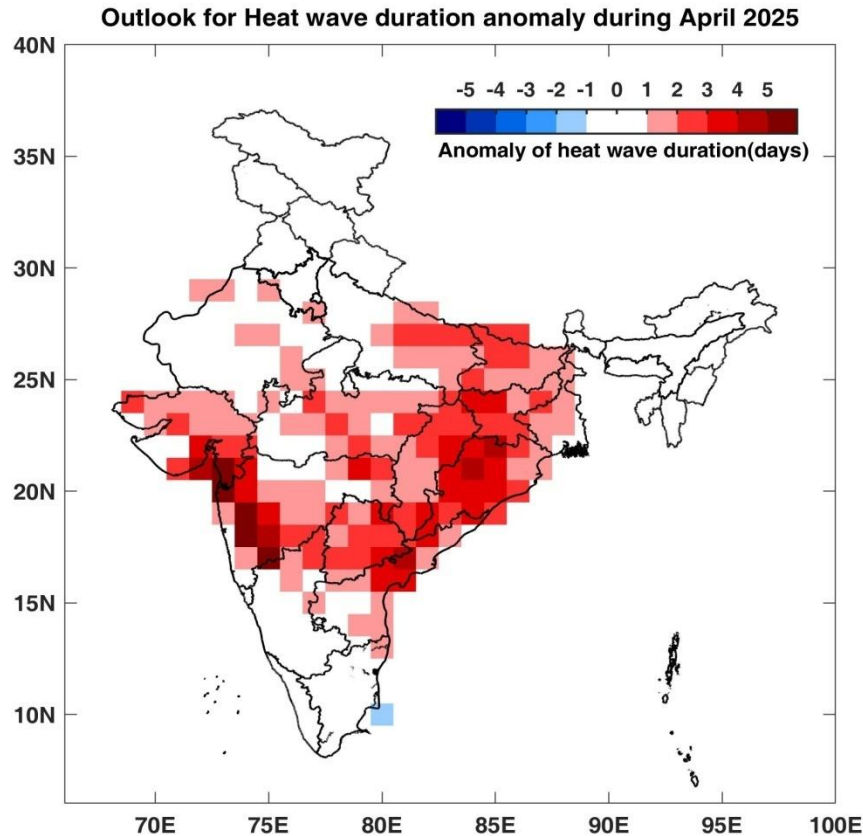


अप्रैल से जून 2025 सीज़न के लिए देश भर में हीटवेव दिनों की संख्या के लिए विसंगति (सामान्य से विचलन) पूर्वानुमान चित्र 3ए में दिखाया गया है। एएमजे गर्म मौसम ऋति के दौरान, दक्षिण प्रायद्वीप, मध्य भारत, पूर्वी भारत और उत्तर-पश्चिम भारत के मैदानी इलाकों के अधिकांश हिस्सों में सामान्य से अधिक हीटवेव दिन होने की संभावना है।



अप्रैल 2025 के महीने के लिए उष्ण लहर / हीट वेव का आउटलुक

अप्रैल 2025 के महीने के लिए हीटवेव घटनाओं का संभावित पूर्वानुमान।



अप्रैल 2025 के लिए देश भर में हीटवेव दिनों की संख्या के लिए विसंगति पूर्वानुमान चित्र 3बी में दिखाया गया है। अप्रैल 2025 के दौरान प्रायद्वीपीय भारत से सटे पूर्वी और मध्य भारत के अधिकांश हिस्सों में सामान्य से अधिक संख्या में हीटवेव/ उष्ण लहर दिन होने की संभावना है।।



भारत मौसम विज्ञान विभाग
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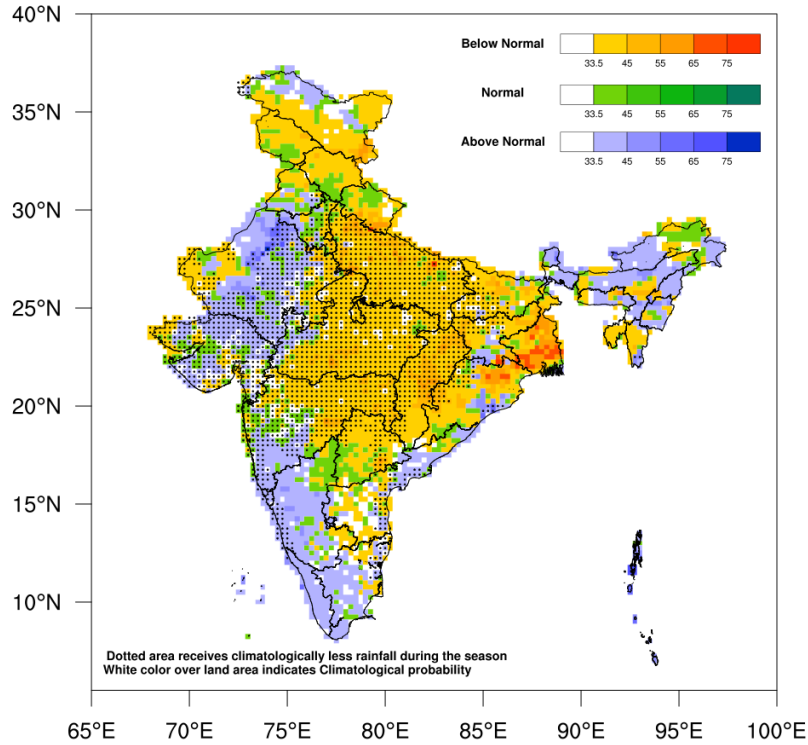
अप्रैल 2025 के दौरान वर्षा का संभाव्य पूर्वानुमान

❖ अप्रैल 2025 के दौरान पूरे देश में मासिक वर्षा भी सामान्य (एलपीए का 88-112%) रहने की संभावना है।

❖ 1971 से 2020 तक के आंकड़ों के आधार पर अप्रैल के दौरान देश भर में बारिश का दीर्घावधि औसत/एलपीए लगभग 39.3 मिमी है।

❖ पूर्वानुमान बताता है कि उत्तर-पश्चिम भारत, प्रायद्वीपीय भारत और उत्तर-पूर्व भारत के कई हिस्सों और पश्चिम-मध्य भारत के कुछ हिस्सों में सामान्य से लेकर सामान्य से अधिक वर्षा होने की संभावना है। देश के बाकी हिस्सों में सामान्य से नीचे वर्षा होने की संभावना है।

probability rainfall forecast for 2025 April



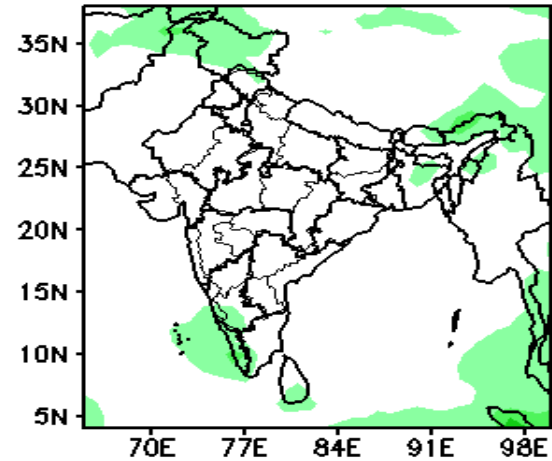
अप्रैल 2025 के दौरान भारत में होने वाली वर्षा के लिए टर्सिल श्रेणियों* (सामान्य से नीचे, सामान्य और सामान्य से अधिक) का संभाव्यता पूर्वानुमान। यह आंकड़ा सबसे संभावित श्रेणियों के साथ-साथ उनकी संभावनाओं को भी दर्शाता है। मानचित्र में दिखाया गया बिंदीदार क्षेत्र जलवायु विज्ञान के अनुसार फरवरी के दौरान बहुत कम वर्षा प्राप्त करता है और भूमि क्षेत्रों के भीतर सफ़ेद छायांकित क्षेत्र जलवायु विज्ञान संबंधी संभावनाओं को दर्शाते हैं (*टर्सिल श्रेणियों की जलवायु विज्ञान संबंधी संभावनाएँ समान हैं, प्रत्येक की 33.33% हैं)।



IMD's predicted week-wise weekly mean rainfall and anomaly (MME) for 4 weeks (27 March to 24 April, 2025)

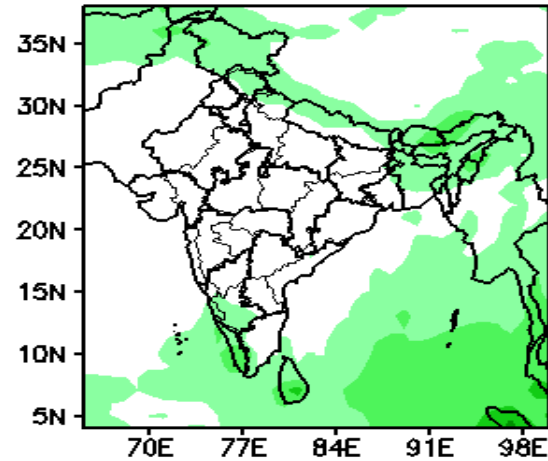
Forecast Rainfall (mm/day)

(Week1:00Z27Mar-00Z03Apr)

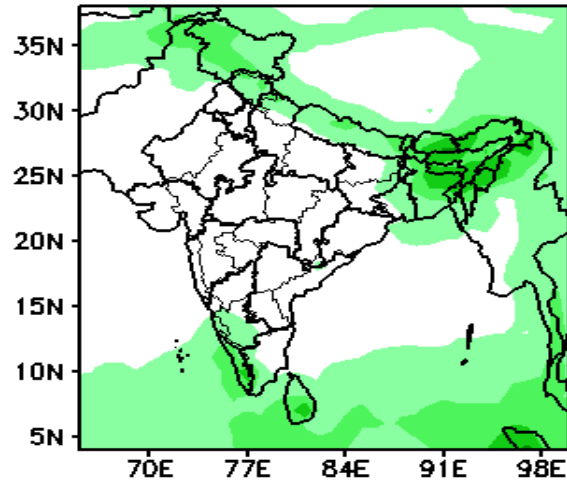


(00Z=0530 hrs IST)

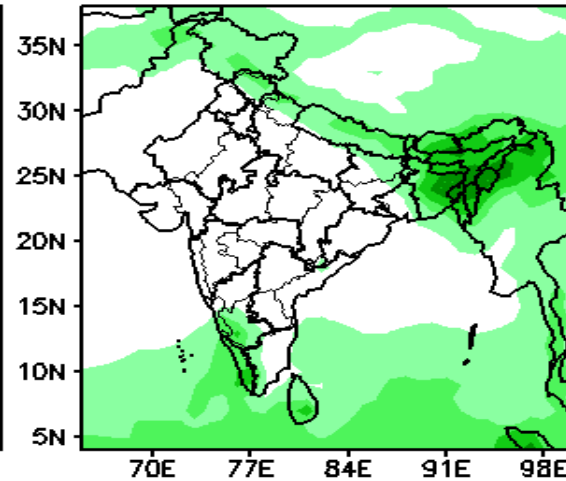
(Week2:00Z03Apr-00Z10Apr)



(Week3:00Z10Apr-00Z17Apr)

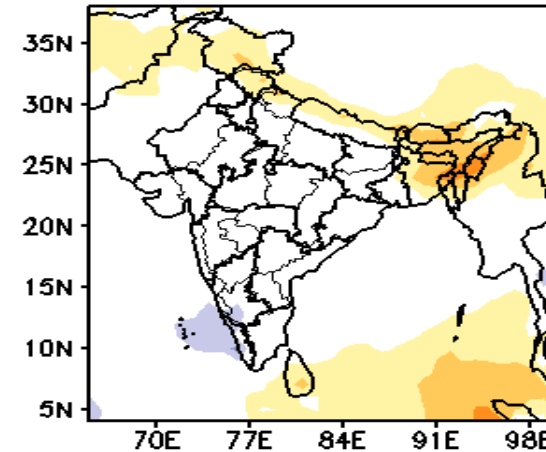


(Week4:00Z17Apr-00Z24Apr)

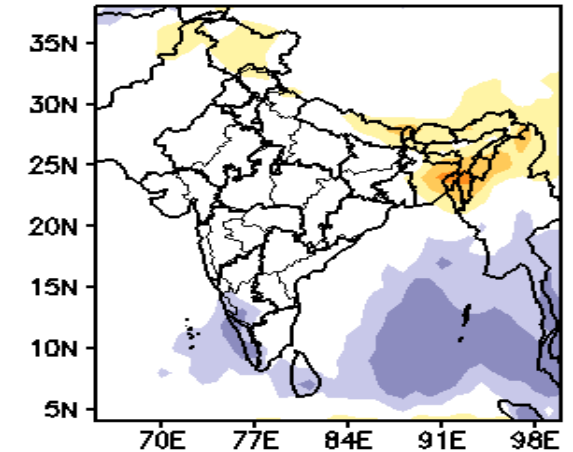


Forecast Rainfall Anomaly (mm/day) (00Z=0530 hrs IST)

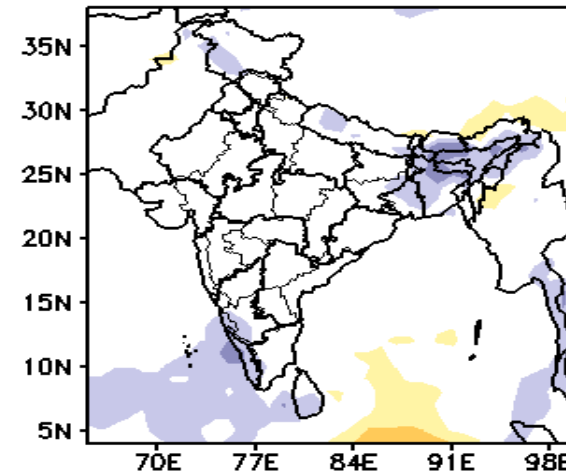
(Week1:00Z27Mar-00Z03Apr)



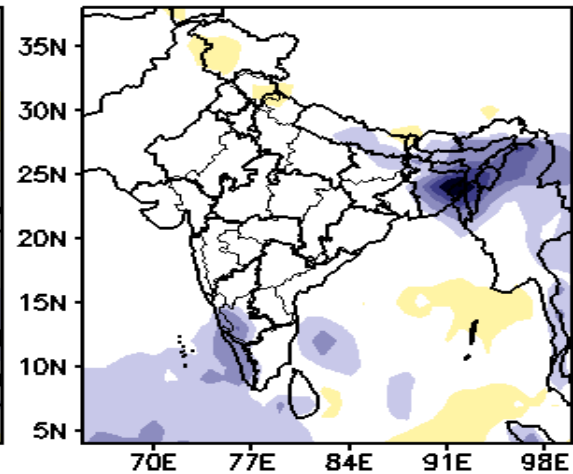
(Week2:00Z03Apr-00Z10Apr)



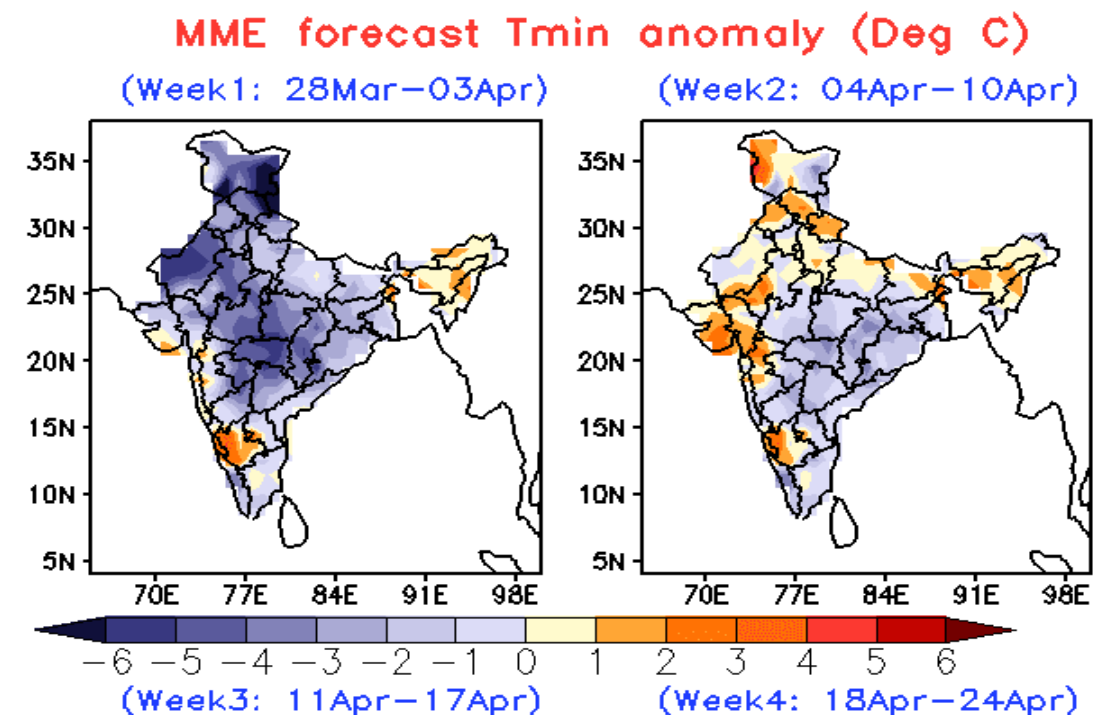
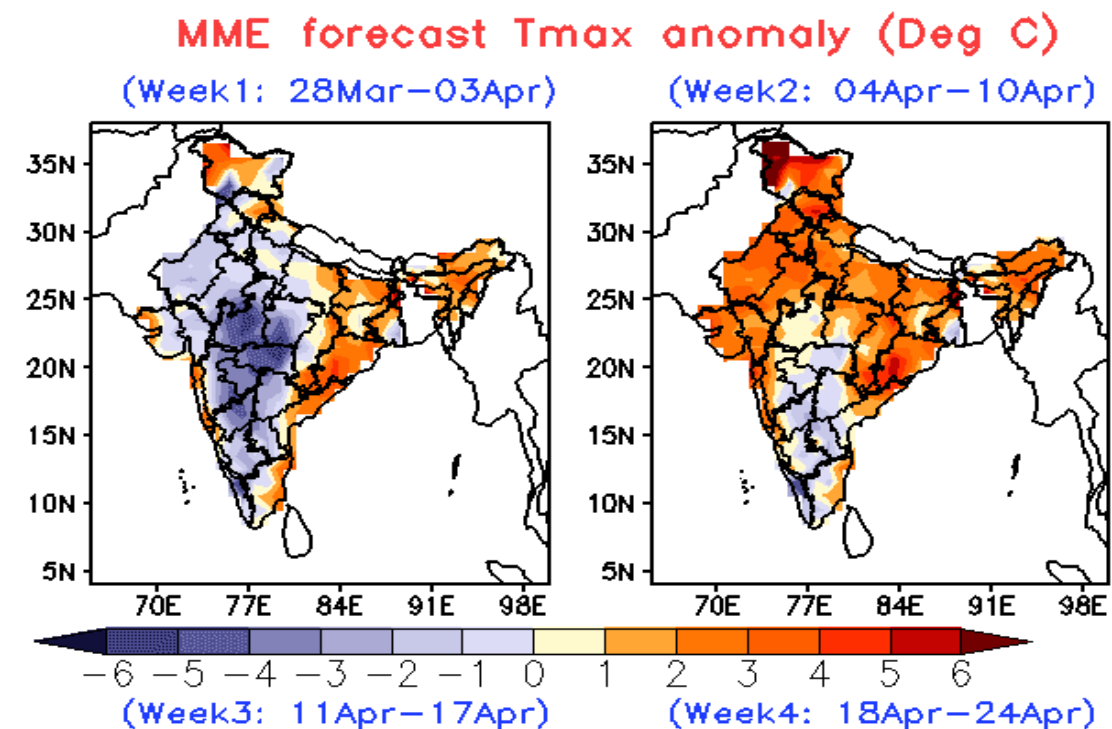
(Week3:00Z10Apr-00Z17Apr)



(Week4:00Z17Apr-00Z24Apr)



redicted week-wise Max and Minimum Temperature deviations from Normal temperatures for 4 (28 March to 24 April, 2025)





Thank you



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