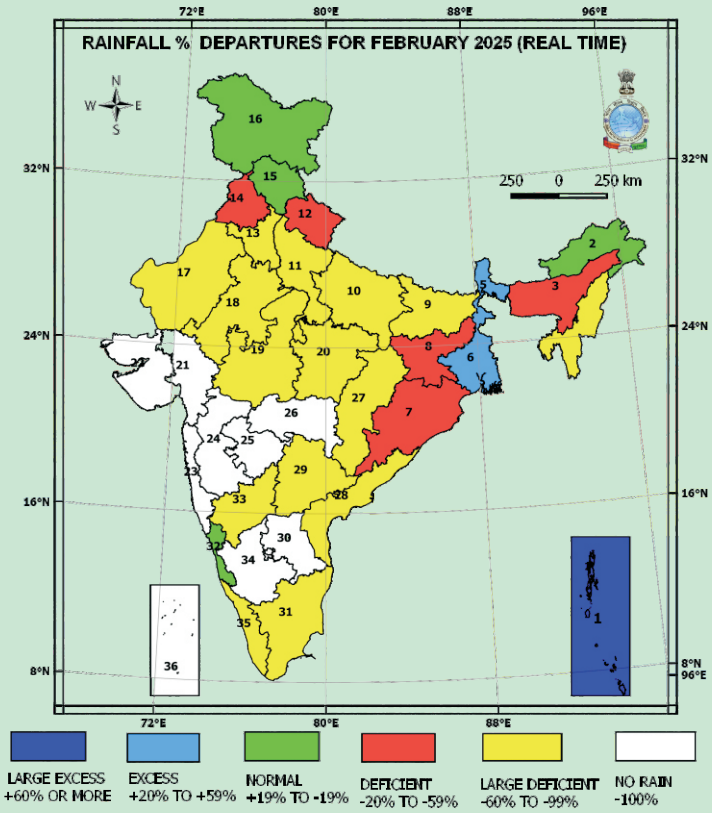
भारत सरकार / GOVERNMENT OF INDIA
पृथ्वी विज्ञान मंत्रालय / MINISTRY OF EARTH SCIENCES
पृथ्वी प्रणाली विज्ञान संगठन / EARTH SYSTEM SCIENCE ORGANIZATION
भारत मौसम विज्ञान विभाग / INDIA METEOROLOGICAL DEPARTMENT

भारत का जलवायु नैदानिक बुलेटीन
CLIMATE DIAGNOSTICS BULLETIN OF INDIA

फरवरी 2025
FEBRUARY 2025

वास्तविक समय के आंकडो पर आधारित विश्लेषण
NEAR REAL - TIME ANALYSES



द्वारा जारी : जलवायु निगरानी एवं प्रागुक्ती समूह
ISSUED BY : Climate Monitoring & Prediction Group

फरवरी, २०२५ (सारांश)

माह की विशेषताएँ

प्रमुख बिंदु :

पुरे भारत का माध्य तापमान (२२.०६^{0}से) १९०१ से सबसे अधिक रहा | अधिकतम तापमान (२९.१० ^{0}से) १९०१ से दूसरा सबसे अधिक रहा और न्युनतम तापमान (१५.०२^{0}से) १९०१ से सबसे अधिक रहा | मध्य भारत का अधिकतम तापमान (३२.५६^{0}से) १९०१ से दुसरा सबसे अधिक रहा | मध्य भारत का न्यूनतम तापमान (१६.७२^{0}से) १९०१ से सबसे अधिक रहा | दक्षिण प्रायद्वीप का अधिकतम तापमान (३३.२४^{0}से) १९०१ से सबसे अधिक रहा | पूर्व और उत्तर पूर्व भारत का न्युनतम तापमान (१४.०७^{0}से) १९०१ से दुसरा सबसे अधिक रहा | उत्तर पश्चिम भारत का न्युनतम तापमान (९.९३^{0}से) १९०१ से चौथा सबसे अधिक रहा | पुरे देश में बारिश की मात्रा फरवरी महीने के दौरान एल.पी.ए. का ७०% थी |

शीत लहर/कोहरे की स्थितियां :

फ़रवरी माह में शीत लहर / कोहरे जैसी स्थितियां नहीं दिखाई दिए |

वर्षा की विशेषताएँ :

पुरे देश में बारिश की मात्रा फरवरी महीने के दौरान एल.पी.ए. का ७० % थी | ३६ मौसम उप मंडलों में सें १ उप मंडल में सामान्य से अधिक, २ उप मंडलों में अधिक,४ में सामान्य, ५ में सामान्य से कम, १५ उप मंडलों में सामान्य से काफी कम वर्षा हुई, ९ उप मंडलों में बिलकुल वर्षा नहीं हुई (आकृति १)| तालिका १ में फरवरी २०२५ के उप मंडल वार वर्षा के आंकड़े (मि मी) में दर्शाए गए है | आकृति २(ए) में माह के दौरान देश के विभिन्न भाग में हुई वर्षा (मि मी) दर्शाई गयी है | आकृति २(बी) में माह के दौरान देश के विभिन्न भाग में हुई वर्षा विसंगति (मि मी) दर्शाई गयी है | आकृति ३ में महीने के दौरान पुरे भारत और चार समरूप क्षेत्रों में दैनिक वर्षा भिन्नता दर्शाती है |

आकृति ४ में वर्ष १९५१ से अब तक के सम्पूर्ण भारत और चार समरूपी क्षेत्रों की क्षेत्र भारित वर्षा श्रृंखला दर्शाई गई है | माह की वर्षा भारत के दक्षिण प्रायद्वीप मे (एल.पी.ए. का १८%), उत्तर पश्चिम भारत में (एल.पी.ए. का ८३%), मध्य भारत में (एल.पी.ए. का १७%), तथा पूर्व और उत्तर पूर्व भारत में (एल.पी.ए. का ७९%) रही |

तालिका २ में माह के दौरान २४ घंटों में हुई भारी (६४.५ से ११५.५ मिमी तक), अति भारी (११५.६ से २०४.४ मिमी तक) या अत्यधिक भारी (>= २०४.५ मिमी या अधिक) वर्षा वाले स्टेशनों की सुची दर्शाई गयी है | आकृति ५ में भारी,अति भारी और अत्यधिक भारी वर्षा वाले स्टेशन दर्शाए गए है |

मानकीकृत वर्षण सूचकांक (एस.पी.आई.) :

मानकीकृत वर्षण सूचकांक अनावृष्टि मापने का एक सूचकांक है जो केवल वर्षा पर आधरित होता है | यह सूचकांक शुष्क स्थिति में ऋणात्मक और आ र्द्र स्थिति में धनात्मक होता है | जब शुष्क या आर्द्र मौसम की स्थिति अधिक भीषण होती है, तब सूचकांक अधिक ऋणात्मक या धनात्मक होता है | आकृति ६ (ए,बी,सी) में फरवरी २०२५, जनवरी २०२५ - फरवरी २०२५ (२ माह के संचित) तथा जुन २०२४ - फरवरी २०२५ (९ माह के संचित) मानकीकृत वर्षण सूचकांक दर्शाए गए हैं |

फरवरी माह के दौरान असाम और मेघालय, उप हिमालयीन पश्चिम बंगाल और सिक्किम, हिमाचल प्रदेश, गुजरात राज्य और कोंकण और गोवा के कुछ भाग में चरम आर्द्र/ प्रचंड आर्द्र स्थितियां रही, जबकि असाम और मेघालय के कुछ भाग में चरम शुष्क/प्रचंड शुष्क स्थितियां रही |

दाब : आकृति ७ (ए) तथा ७ (बी) क्रमशः माध्य समुद्र सतह दाब तथा इसकी विसंगति दर्शाते है | अधोरेखा द्वारा ऋणात्मक मान दर्शाए गए हैं |

पवन : आकृति ८ (ए) तथा ८ (बी), ९ (ए) तथा ९ (बी), १० (ए) तथा १० (बी) में क्रमशः पवन का ८५०,५०० और २५० एच. पी.ए. स्तरों पर माध्य परिसंचरण स्वरुप तथा इसकी विसंगति को दर्शाता है |

वेग विभव तथा धारा कृत्य (वेलोसिटी पोटेंशियल और स्ट्रीम फंक्शन) :

आकृति ११ (ए) तथा ११ (बी), में २५० एच. पी.ए. स्तर पर माध्य वेग विभव तथा इसकी विसंगति को दर्शाया गया है | इसी प्रकार आकृति १२ (ए) तथा १२ (बी) में माध्य धारा कृत्य तथा इसकी विसंगति को दर्शाते हैं | अधोरेखा द्वारा ऋणात्मक मान दर्शाए गए हैं |

बहिर्गामी दिर्घतरंग विकिरण (ओ.एल.आर.) :

भारत के क्षेत्रों तथा आसपास की बहिर्गामी दिर्घतरंग विकिरण (वाट/वर्ग मीटर) आकृति १३ में दर्शायी गयी हैं |

तापमान : माध्य मासिक अधिकतम तथा न्यूनतम तापमान विसंगति आकृति १४ (ए) तथा आकृति १४ (बी) में दर्शाई गयी हैं |

उष्ण दिनों / शीत रात्रियों का प्रतिशत :

आकृति १५(ए) तथा आकृति १५(बी) में अधिकतम (न्युनतम) तापमान जब ९०वें (१० वें) परसेंटाइल से अधिक(कम) वालों दिनों का प्रतिशत दर्शाया गया हैं | आकृति १६ में पूरे देश में फरवरी माह के १९७१ से अब तक के औसत तापमान दर्शाए गए हैं | ५ वर्ष के चल औसत भी दर्शाए गए हैं | इस वर्ष के जनवरी माह का माध्य तापमान १९.०२^{0}से (तापमान विसंगति ०.९८^{0}से) रहा | आकृति १७(ए) तथा आकृति १७(बी) में चारों समरूपी क्षेत्रों के वर्ष १९७१ से अब तक के फरवरी माह के दौरान रहे अधिकतम और न्यूनतम तापमानों की श्रुंखला दर्शाई गई हैं | आकृति १८(ए) तथा आकृति १८(बी) में महीने के दौरान पुरे भारत और चार समरूपी क्षेत्रों में दैनिक अधिकतम और न्युनतम तापमान विसंगतियों की श्रुंखला दर्शाई है | तालिका ३ मे माह के दौरान की तापमान विसंगति दर्शाई गयी है |

निम्न दाब प्रणालियां : इस माह कोई निम्न दाब क्षेत्र नहीं बने |

हिन्द एवं प्रशांत महासागरों पर समुद्री सतह तापमान विसंगति :

आकृति १९ उष्ण कटिबंधीय हिन्द एवं प्रशांत महासागरों पर समुद्री सतह तापमान विसंगती दर्शाता है |

दक्षिणी दोलन सुचकांक तथा प्रशांत समुद्री सतह तापमान सुचकांक :

दक्षिणी दोलन सुचकांक (तालिका ४) इस माह के दौरान धनात्मक (०.९) रहा |

एम्.एम्.सी.एफ.एस. एन्सो पूर्वानुमान :

आकृति २० आने वाले ऋतूओं के लिए का एम्.एम्.सी.एफ.एस. एन्सो पूर्वानुमान दर्शाता है |

आपत्कालीन मौसम घटनाए : आकृति २१ आपत्कालीन मौसम घटनाए दर्शाता है |

FEBRUARY-2025
MAIN FEATURES OF THE MONTH

Highlights:

In February 2025, over the country, the mean temperature was 22.06^{o}C with an anomaly of 1.36^{o}C and it was the highest since 1901. The maximum temperature during February 2025 was the 2nd highest (29.10ºC with an anomaly of 1.52ºC) after the year 2023(29.44ºC) and the minimum temperature was the highest (15.02ºC with an anomaly of 1.20ºC) since 1901.

Among the four homogeneous regions, over Central India, the maximum temperature was the 2nd highest (32.56ºC with an anomaly of 2.03ºC) after the year 2023(32.59ºC) and the minimum temperature was the highest (16.72ºC with an anomaly of 1.73ºC) since 1901. Over South Peninsular India the maximum temperature was the highest (33.24ºC with an anomaly of 1.11ºC) since 1901. Over East & Northeast India the minimum temperature was the 2nd highest (14.07ºC with an anomaly of 1.41ºC) after the year 2016(14.34ºC) and over Northwest India it was the 4th highest (9.93ºC with an anomaly of 0.99ºC) after the years 2006(10.84ºC), 2023(10.33ºC) and 2015(10.05ºC) since 1901

Rainfall realized over the country as a whole was 70% of its LPA during the month**.**

Cold Wave / Fog conditions:

Cold wave/foggy conditions were mostly absent across northern and Indo Gangetic plains during the month.

Rainfall Features:

During the February 2025, rainfall realized over the country as a whole was 70% of its LPA. Most of the sub divisions received large deficient/deficient/no rainfall except a few like Arunachal Pradesh, Sub Himalayan West Bengal & Sikkim, Gangetic West Bengal, Jammu & Kashmir & Ladakh, Himachal Pradesh, Coastal Karnataka and Andaman & Nicobar Islands which received large excess/excess/normal rainfall.

During the month, out of 36 meteorological subdivisions, one subdivision (Andaman & Nicobar islands) received large excess rainfall, 2 received excess rainfall, 4 received normal rainfall, 5 received deficient rainfall, 15 received large deficient rainfall and 9 subdivisions did not receive any rain (Fig.1). Table 1 shows the subdivision-wise rainfall statistics (mm) for February 2025.

Fig. 2(a) shows the spatial pattern of rainfall (mm) received during the month. Parts of Arunachal Pradesh, Sub-Himalayan West Bengal & Sikkim, Uttarakhand, Jammu & Kashmir & Ladakh, Himachal Pradesh and Andaman & Nicobar islands received more than 100 mm rainfall.

Fig. 2(b) shows the spatial pattern of rainfall anomaly (mm) during the month. Rainfall anomaly was negative over most parts of the country, except Arunachal Pradesh, Sub Himalayan West Bengal & Sikkim, Uttarakhand, Jammu & Kashmir & Ladakh, Himachal Pradesh and Andaman & Nicobar Islands. Rainfall anomaly of more than 50 mm was observed over parts of Arunachal Pradesh, Sub Himalayan West Bengal & Sikkim, Jammu & Kashmir & Ladakh and Himachal Pradesh. A magnitude of negative rainfall anomaly of more than 25 mm was observed over parts of Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura and West Uttar Pradesh.

Fig 3 shows the daily variation of the rainfall over the country as a whole and four homogeneous regions during the February 2025. Fig. 4 shows the area weight averaged rainfall series for February

over all India and four homogeneous regions since 1951. Rainfall realized over all India was 70% of its LPA.

Rainfall over homogeneous regions of northwest India, northeast India, central India and south peninsular India was 83%, 79%, 17% and 18% of its LPA respectively.

Table 2 gives the list of stations that received heavy (64.5 mm to 115.5 mm), very heavy (115.6 mm to 204.4 mm) and extremely heavy (>=204.5mm) rainfall in 24 hours during the month. Fig. 5 depicts stations that received heavy (64.5 to 115.5 mm) and very heavy (115.6 mm to 204.4 mm) and extremely heavy (>=204.5mm) rainfall during February 2025.

Some stations received highest 24-hour record rainfall. A list of stations is given below with their previous record and date.

24 hour record rainfall				
STATION NAME	**NEW RECORD (mm)#**	**DATE (FEBRUARY2025)**	**PREVIOUS RECORD (mm)**	**DATE**
BATOTE	163.7	28-02-2025	161.6	19-02-2003
BHUNTAR	113.2	28-02-2025	84.0	28-02-2007
CAR NICOBAR	100	26-02-2025	94.4	29-02-2008
ITANAGAR	46.4	11-02-2025	32.1	19-02-2019
KANGRA (A)	74	28-02-2025	67.9	08-02-2019
MANDI	57.4	28-02-2025	50.1	08-02-1992
TEHRI	73	28-02-2025	67.6	09-02-2010

Based on Real Time available data

Standardized Precipitation Index:

The Standardized Precipitation Index (SPI) is an index used for measuring drought and is based only on precipitation. This index is negative for dry and positive for wet conditions. As the dry or wet conditions become more severe, the index becomes more negative or positive respectively. Fig. 6 (a, b, c) give the SPI values for February 2025, January-February 2025 (2 months cumulative) and June 2024 - February 2025 (nine months cumulative) respectively.

During February, extremely wet/severely wet conditions were observed over parts of Assam & Meghalaya, S. H. West Bengal & Sikkim, Himachal Pradesh, Gujarat state and Konkan & Goa, while extremely dry/severely dry conditions were observed over parts of Assam & Meghalaya.

Cumulative SPI values of the past two months indicate extremely wet/severely wet conditions over parts of Assam & Meghalaya, Saurashtra & Kutch and Tamil Nadu, while extremely dry/severely dry conditions were observed over parts of Assam & Meghalaya, S.H.West Bengal & Sikkim, Jharkhand, Uttar Pradesh state, Jammu & Kashmir and Ladakh, East Madhya Pradesh and Chhattisgarh.

Cumulative past nine months' SPI values indicate extremely wet/severely wet conditions over parts of Nagaland, Manipur, Mizoram & Tripura, S.H.West Bengal & Sikkim, Odisha, Uttar Pradesh state, Haryana, Chandigarh & Delhi, Rajasthan state, West Madhya Pradesh, Gujarat state, Konkan & Goa, Madhya Maharashtra, Chhattisgarh, Telangana, Tamil Nadu, Coastal Karnataka and South Interior Karnataka, while extremely dry/severely dry conditions were observed over parts of Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Jharkhand, Bihar, Uttar Pradesh state, Punjab, Himachal Pradesh, Jammu & Kashmir and Ladakh, Marathawada, Chhattisgarh and Kerala.

Pressure & Wind:

Figs. 7(a) & 7(b) show the February 2025 mean sea level pressure & its anomaly respectively. The pressure anomaly was positive over most parts of the country, except some northwestern parts and some isolated places of south peninsula. The positive pressure anomaly was within the range of 0 to 1.0 hPa over most parts of the country.

Figs. 8(a) & 8(b), 9(a) & 9(b), and 10(a) & 10 (b) shows the mean circulation patterns and their anomalies at 850, 500 & 250 hPa levels respectively. At 850 hPa level, an anomalous anticyclonic circulation was seen over central India and adjoining Arabian sea. This anomalous anticyclonic circulation persisted at 500 hPa level also. At 250 hPa level, an anomalous northerlies prevailed over central and south peninsula and a cyclonic circulation prevailed over north Bay of bengal and adjoining east and northeast India.

Velocity Potential & Stream Function:

Figs. 11(a) & 11(b) show the 250 hPa mean Velocity Potential & its anomaly. Similarly, Figs. 12(a) & 12(b) show the mean stream function & its anomalies at 850 hPa level. Negative values are indicated by dashed lines. Anomaly in the velocity potential at 250 hPa level was positive throughout the country. Anomaly in the stream function at 850 hPa level was also positive over most parts of the country except, some isolated places of Northeast India.

Outgoing Longwave Radiation (OLR):

OLR anomaly (W/m^2) during February 2024 over the Indian region and neighborhood is shown in Fig. 13. OLR anomaly was positive over most parts of the country and both the seas, except parts of northwest and west-central India. OLR anomaly was within the range of $\pm$10 W/m^2 over the entire country and both seas.

Temperature:

The maximum temperature was above normal over most parts of the country, except some parts of East & Northeast India (Fig. 14a). Maximum temperature anomaly was more than 3^oC over parts of Jharkhand, Chhattisgarh and Odisha. Maximum temperature anomaly was more than 2^oC over parts of Jammu, Kashmir & Ladakh, Uttarakhand, Rajasthan state, Uttar Pradesh state, Haryana, Chandigarh & Delhi, Gujarat state, Jharkhand, Chhattisgarh, Odisha, Maharashtra state, Goa state and Coastal Andhra Pradesh & Yanam. Maximum temperature anomaly was less than -1^oC over parts of Sikkim state, Arunachal Pradesh and Assam state.

The minimum temperature was above normal over most parts of the country, except some parts of east and northeast India, southern south peninsular India, Lakshadweep and Andaman & Nicobar Islands (Fig. 14b). The minimum temperature anomaly was more than 3^oC over parts of northern Gujarat region and Bihar. The minimum temperature anomaly was more than 2^oC over parts of Punjab, Rajasthan state, Gujarat state, West Madhya Pradesh, Madhya Maharashtra, Marathawada, North Interior Karnataka, Bihar, West Bengal state and Odisha. Minimum temperature anomaly was less than -1^oC over parts of East Uttar Pradesh, Tamil Nadu, Puducherry & Karaikal and South Interior Karnataka.

Some stations recorded the highest maximum and lowest minimum temperature for the month. A list of stations is given below with their previous record and date.

Highest Maximum				
STATION NAME	**NEW RECORD (^{0}C)#**	**DATE (FEBRUARY 2025)**	**PREVIOUS RECORD (^{0}C)**	**DATE**
BAPATLA	35.4 @	04-02-2025	35.4	28-02-2009
KANNUR	39	24-02-2025	38.8	20-02-2016
KOCHI (CIAL)	37.6	27-02-2025	37.4	25-02-2004
KOTTAYAM	38.6	27-02-2025	38.5	28-02-2024
MINICOY	34.0 @	24-02-2025	34.0	21-02-2024
VALLABH VIDYANAGAR	38.5	26-02-2025	37.9	28-02-2024
Lowest Minimum				
STATION NAME	**NEW RECORD (^{0}C)#**	**DATE (FEBRUARY 2025)**	**PREVIOUS RECORD (^{0}C)**	**DATE**
CHICKMAGALUR	10.6	01-02-2025	11.1	24-02-1990

@ Indicates equals previous record # Based on Real Time available data

Percentage of Warm days/Cold nights:

Figs. 15(a) &15(b) show the percentage of days when the maximum (minimum) temperature was more (less) than the 90th (10th) percentile. Over parts of Odisha, Chhatisgarh, Madhya Maharashtra, Marathawada, Vidarbha, North Interior Karnataka, Lakshdweep, some isolated places over Coastal Andhra Pradesh and Rayalaseema maximum temperature was greater than 90th percentile for more than 50% of the days of the month. For minimum temperature no such significant distribution was observed.

Fig.16 shows the mean temperature time series for the country as a whole for February since 1971. Five year moving average values are also shown. The mean temperature for the month this year over the country as a whole was 22.06 ^{o}C with an anomaly of 1.36^{o}C and the highest since 1901. Among the four homogeneous regions, the mean temperature over Central India was the highest (24.64ºC with an anomaly of 1.88ºC) and Northwest India was the 5th highest (17.07ºC with an anomaly of 1.42ºC) after the years 2023(17.90ºC), 2006(17.74ºC), 1960(17.25ºC) and 2021(17.21ºC) since 1901.

Fig. 17(a) & 17(b) show, the maximum and minimum temperature series respectively for the country as a whole and the four homogeneous regions during February since 1971. Both the maximum and minimum temperatures were above normal over all the homogeneous regions and country as a whole. In February 2025, among the four homogeneous regions, over Central India, the maximum temperature was the 2nd highest (32.56ºC with an anomaly of 2.03ºC) after the year 2023(32.59ºC) and the minimum temperature was the highest (16.72ºC with an anomaly of 1.73ºC) since 1901. Over South Peninsular India the maximum temperature was the highest (33.24ºC with an anomaly of 1.11ºC) since 1901. Over East & Northeast India the minimum temperature was the 2nd highest (14.07ºC with an anomaly of 1.41ºC) after the year 2016(14.34ºC) and over Northwest India it was the 4th highest (9.93ºC with an anomaly of 0.99ºC) after the years 2006(10.84ºC), 2023(10.33ºC) and 2015(10.05ºC) since 1901.

Over the country as a whole, the maximum temperature during February 2025 was the 2nd highest (29.10ºC with an anomaly of 1.52ºC) after the year 2023(29.44ºC) and the minimum temperature was the highest (15.02ºC with an anomaly of 1.20ºC) since 1901.

Fig. 18(a) and 18(b) show the daily variation of maximum and minimum temperature anomalies respectively over all India and four homogeneous regions during February 2025. Table 3 gives temperature anomalies over India and four homogeneous regions during February 2025.

The maximum temperature was above normal by equal or more than 5^0C over some stations of Central India and minimum temperature was above normal by equal or more than 5^0C over some stations of Northwest India, east India and Central India for many days during the month. The following tables give the list of stations and number of days (frequency) for which maximum and minimum temperatures were above normal by equal or more than 5^0C (compared to 1991-2020 normal) for equal or more than five days during the month.

MAXIMUM TEMPERATURE	
STATION	**FREQUENCY**
JHARSUGUDA	9
SAMBALPUR	6
AMBIKAPUR	8
PENDRA	8
PBO RAIPUR	5

MINIMUM TEMPERATURE	
STATION	**FREQUENCY**
CONTAI	7
BALASORE	5
CHANDBALI	6
PATNA (A)	6
AGRA	7
ALIGARH	4
AMRITSAR	7
BARMER	6
DEESA	6

Low-Pressure Systems:

No intense low-pressure systems formed during the month.

SST anomaly over the Indian & Pacific Oceans:

Fig.19 shows the anomaly in sea surface temperature over the tropical Indian and Pacific Oceans. During February 2025 sea surface temperatures (SSTs) were positive in the eastern and far western Pacific Ocean. Negative SSTs were evident in the central Pacific Ocean. Positive SSTs were observed in the Northern Arabian Sea and North Bay of Bengal.

SOI and Pacific SST Index:

SOI (Table 4) was positive (0.9) during the month. Sea surface temperature anomalies were within normal range over all the NINO regions in the Pacific Ocean.

Fig. 20 shows the Monsoon Mission Coupled Forecast System (MMCFS) model output forecast for ENSO conditions for the coming seasons. Over the equatorial Pacific Ocean, sea surface temperatures (SSTs) are above average in the eastern and far western Pacific Ocean. Below-average SSTs were evident in the central Pacific Ocean. The El Niño-Southern Oscillation (ENSO) is transitioning from weak La Niña conditions to an ENSO-neutral state. The neutral ENSO conditions are expected to persist in the coming month, with a transition to ENSO-neutral likely occurring between March and May 2025.

Significant Weather Events for February 2025:

During February, total 12 persons reportedly claimed dead, one injured. The details of casualties given below, which are based on real time media reports and other state government agencies.

Fig. 21 shows significant weather events during the month (based on real-time media reports).

Snowfall: Total 8 persons reportedly claimed dead during February, because of Snow avalanche. The details of the area effected by the events are summarized and given in the table below;

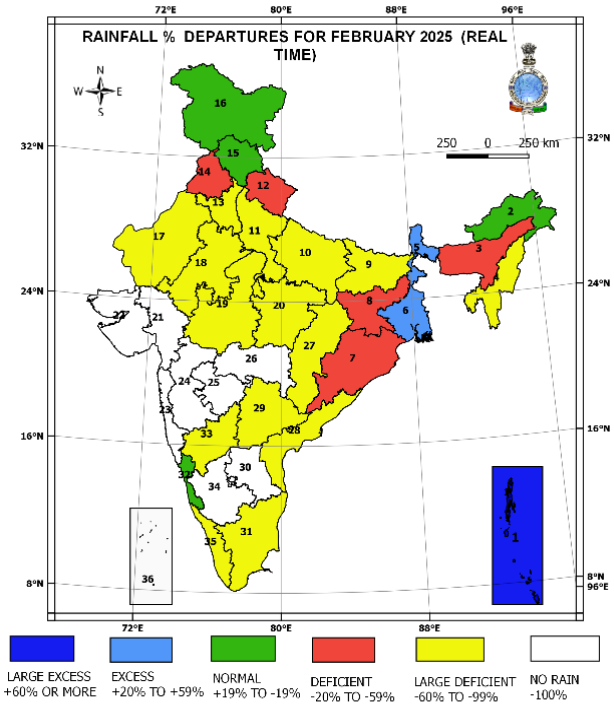
DATE	DEATH	INJURED	MISSING	LIVESTOCK	DISTRICT (STATE/UT) AFFECTED
28 Feb.	8				Chamoli (Uttarakhand)

Floods and Heavy Rains: Total 4 persons reportedly claimed dead and one injured during February, because of Floods and Heavy Rains. The details of the area affected by the events are summarized and given in the table below;

DATE	DEATH	INJURED	MISSING	LIVESTOCK	DISTRICT (STATE/UT) AFFECTED
27 Feb.	3				Reasi, Udhampur (Jammu and Kashmir)
28 Feb.	1	1			Kangra (Himachal Pradesh)

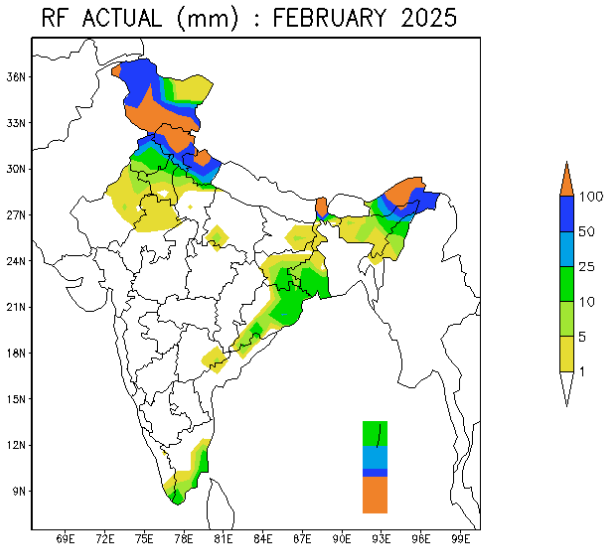
While, Kullu (Himachal Pradesh) district also affected due to Floods and Heavy Rains and Udhampur (Jammu and Kashmir) district due to Extreme Rain.

Hailstorm: Extensive damage to wheat, mustard crops in more than 30 villages in Jind (Haryana) district on 20 Feb reported.



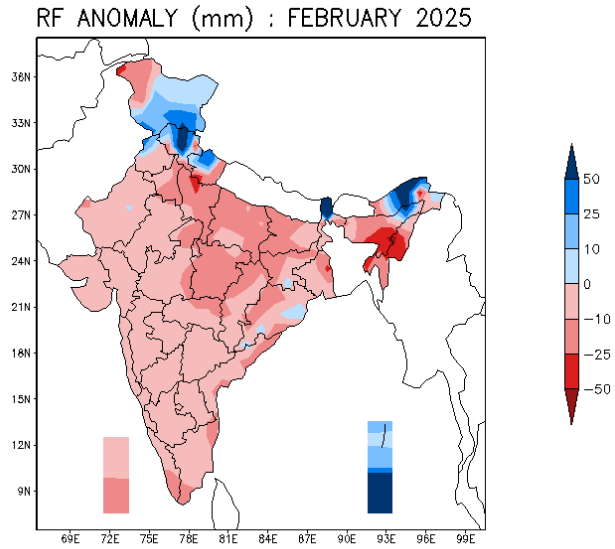
आकृती १: फरवरी २०२५ के लिए वर्षा का उपमंडल वार प्रतिशत विचलन

FIG. 1: SUBDIVISIONWISE RAINFALL PERCENTAGE DEPARTURE FOR FEBRUARY 2025



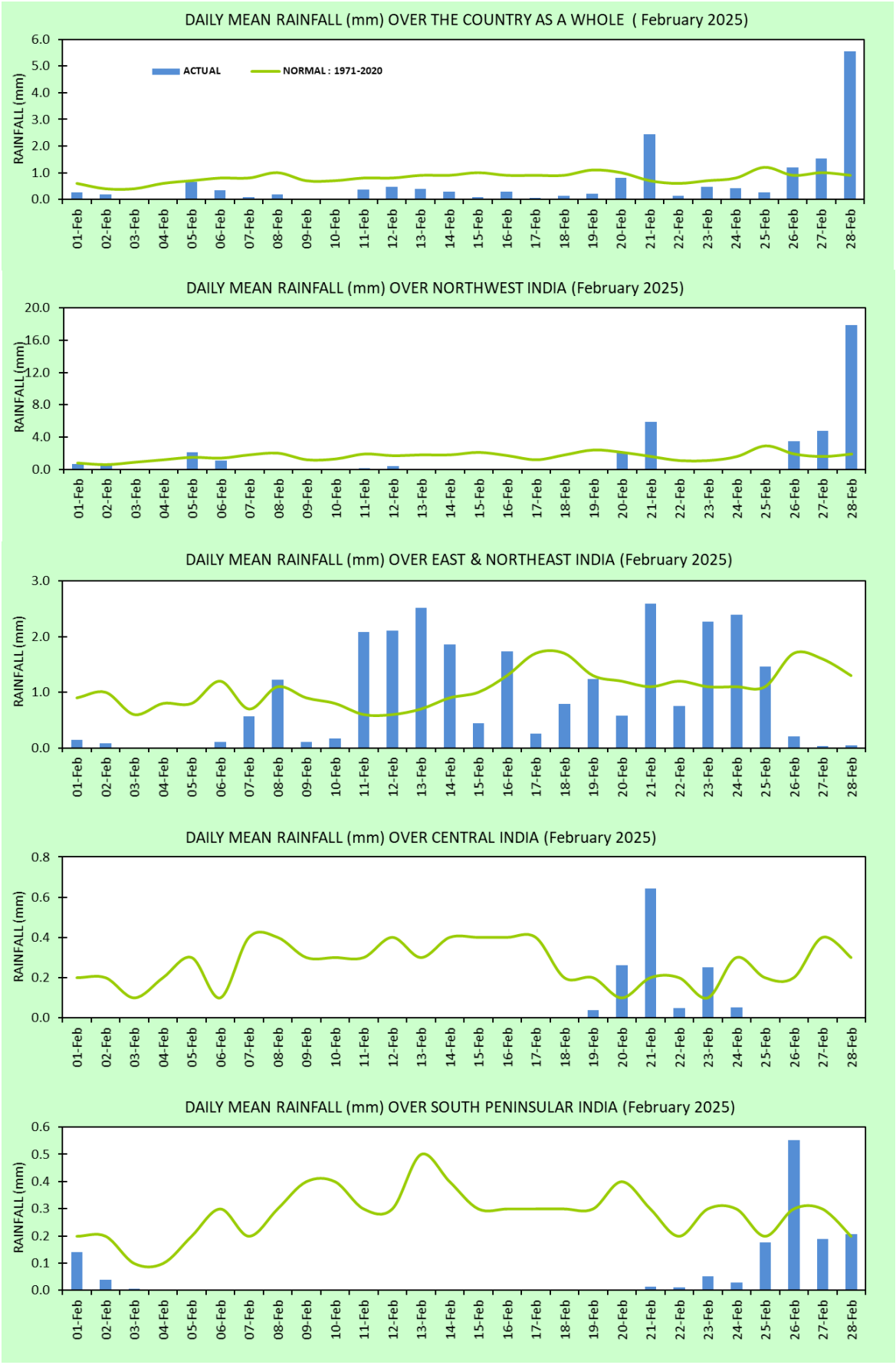
आकृती २(ए): फरवरी २०२५ वर्षा (मिमी)

FIG. 2(a): MONTHLY RAINFALL (mm) FOR FEBRUARY 2025



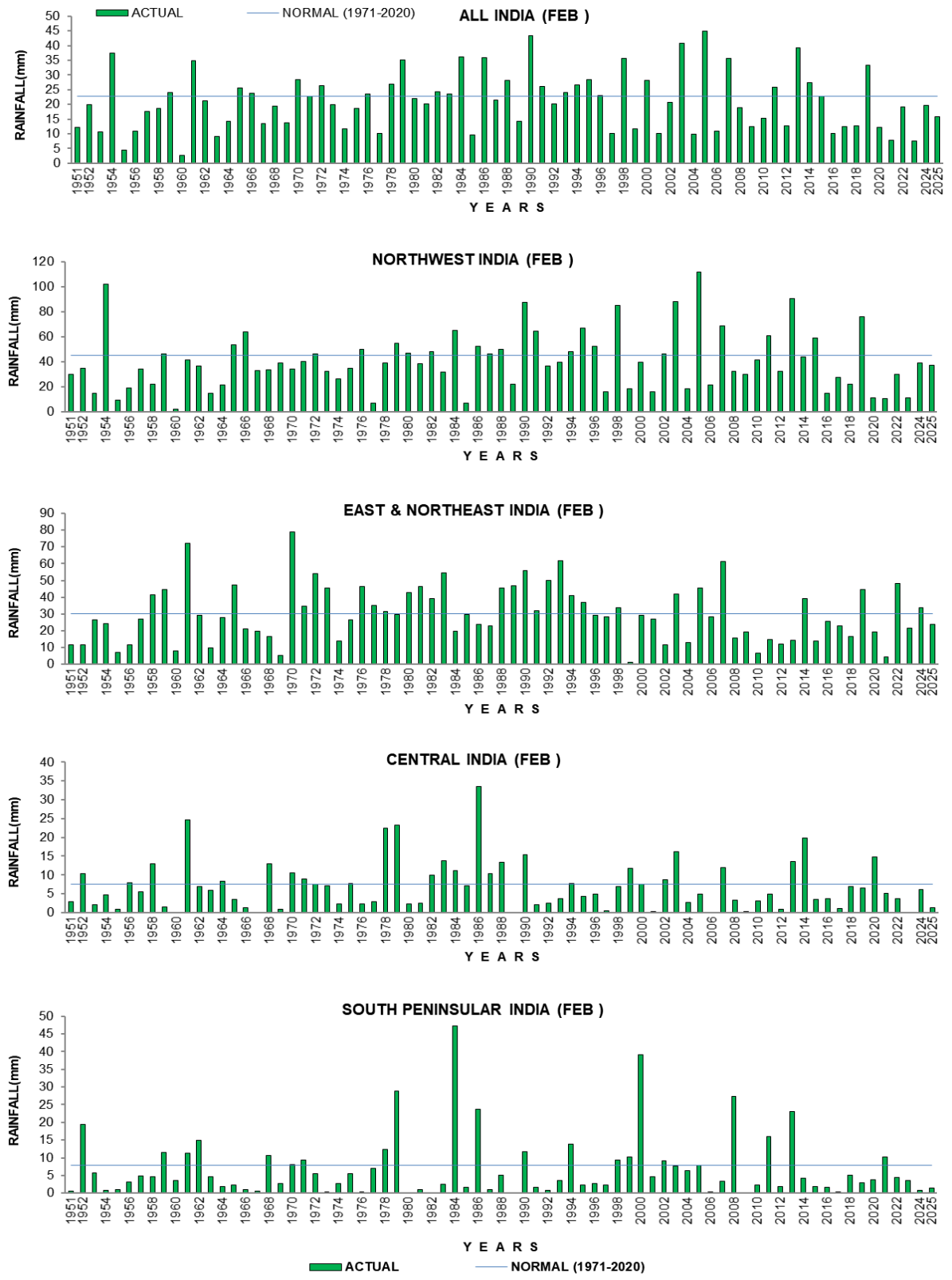
आकृती २(बी): फरवरी २०२५ वर्षा विसंगति (मिमी)

FIG. 2(b): MONTHLY RAINFALL ANOMALY (mm) FOR FEBRUARY 2025



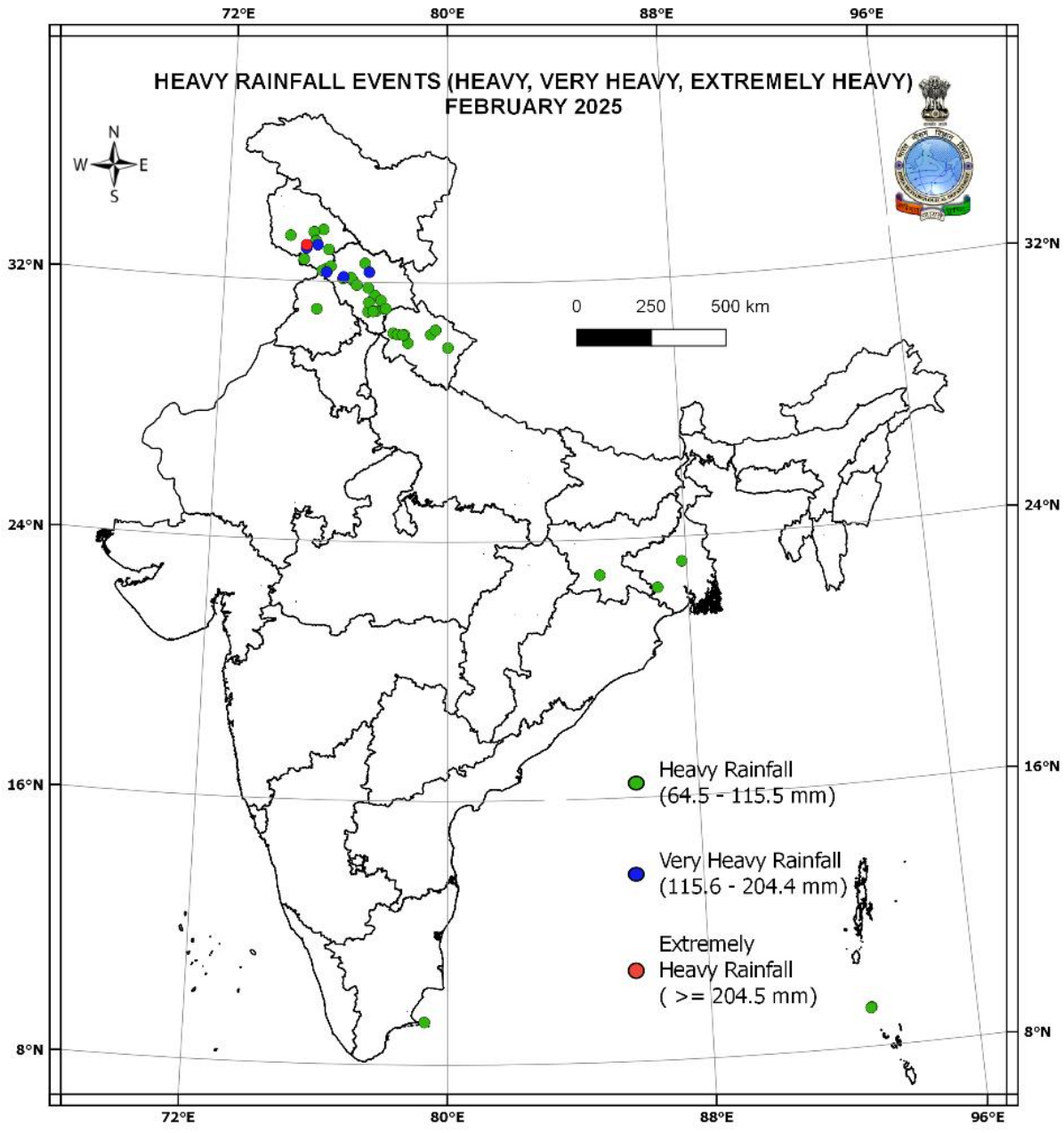
आकृती ३: फरवरी २०२५ के दौरान अखिल भारतीय और चार सजातीय क्षेत्रों में वर्षा की दैनिक भिन्नता

FIG. 3: DAILY VARIATION OF RAINFALL OVER ALL INDIA AND FOUR HOMOGENEOUS REGIONS DURING FEBRUARY 2025



आकृती ४: १९५१-२०२५ की अवधि के दौरान फरवरी माह के लिए पुरे भारत और चार समरूप क्षेत्रों में क्षेत्र भारित वर्षा की समय श्रृंखला

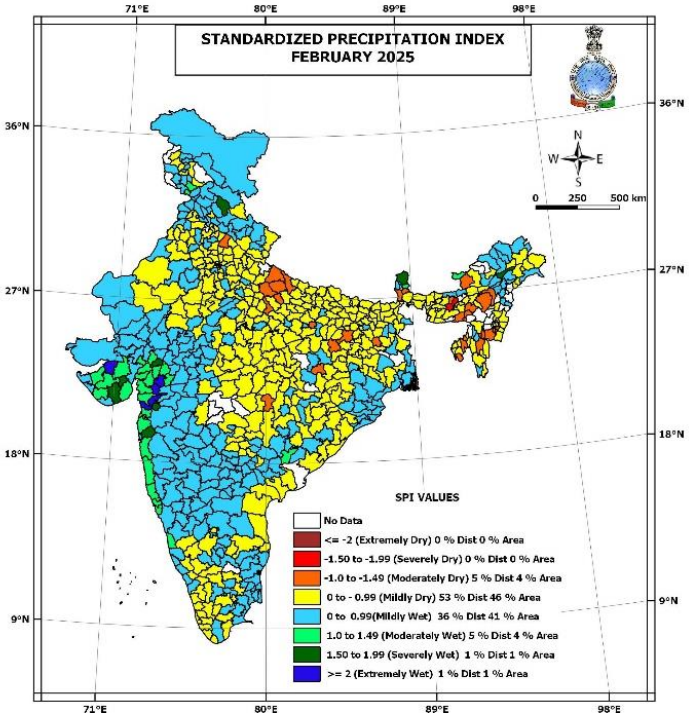
FIG. 4: TIME SERIES OF AREA-WEIGHT AVERAGED RAINFALL OVER ALL INDIA AND FOUR HOMOGENEOUS REGIONS FOR FEBRUARY (1951 - 2025)



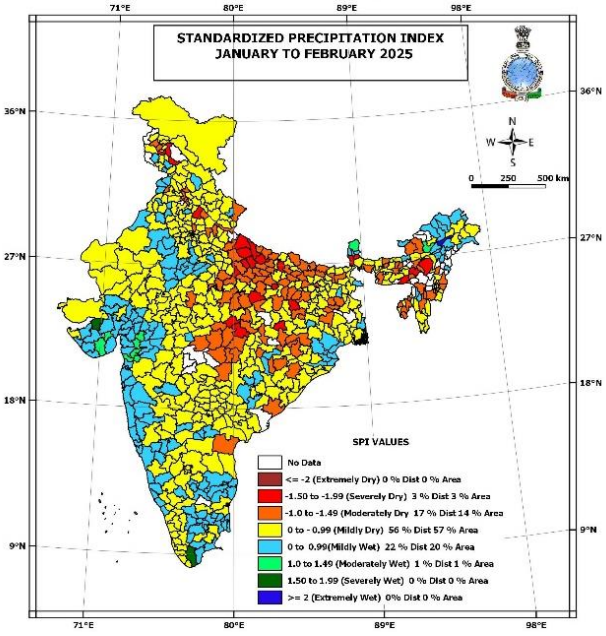
आकृती ५: फरवरी २०२५ के दौरान भारी वर्षा प्राप्त करने वाले स्टेशन

FIG. 5: STATIONS WHICH RECEIVED HEAVY RAINFALL DURING FEBRUARY 2025

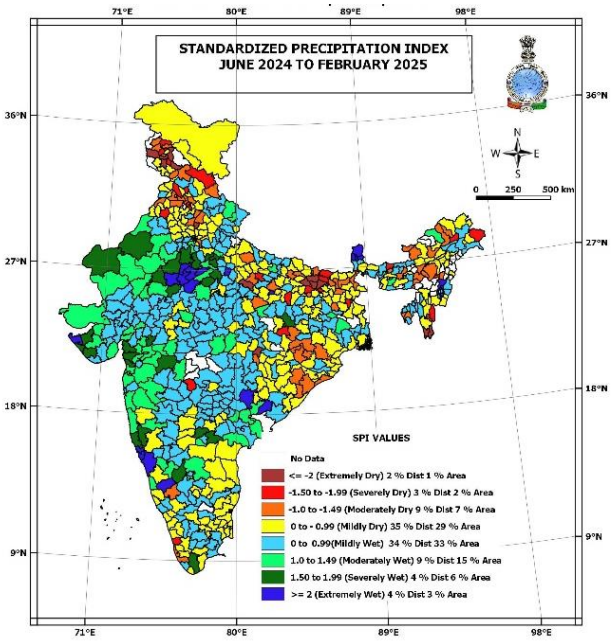
(a) FEBRUARY 2025



(b) JANUARY- FEBRUARY 2025



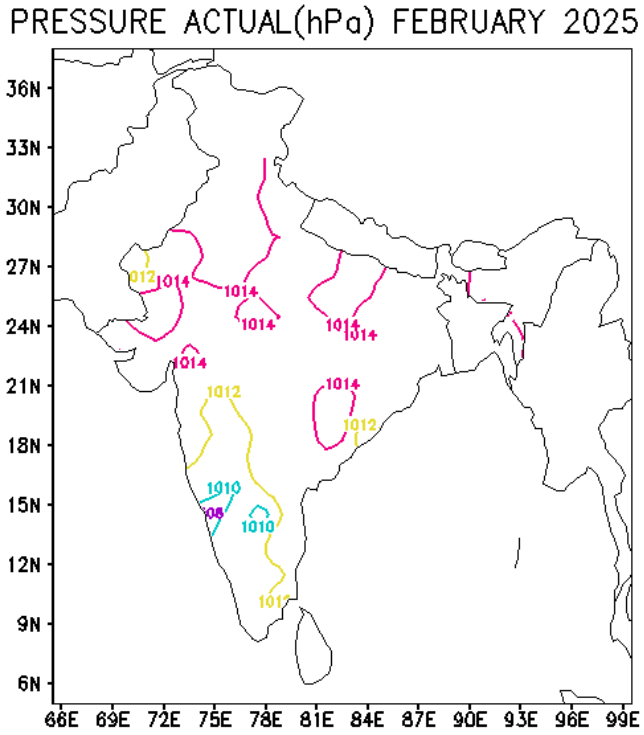
(c) JUNE 2024 – FEBRUARY 2025



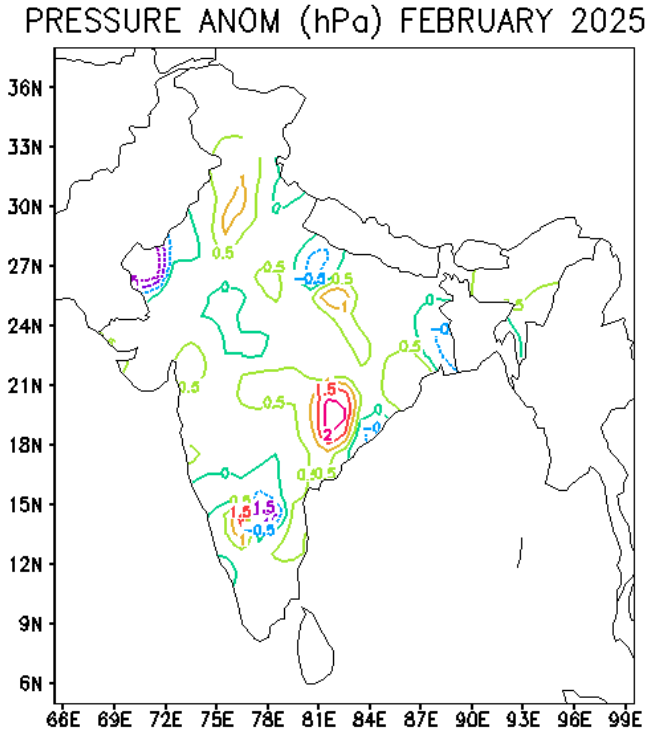
आकृती ६: मानकीकृत वर्षण सूचकांक (एसपीआई)
(ए) फरवरी (एक महीना) (बी) जनवरी से फरवरी (दों महीने)
(सी) जुन २०२४ से फरवरी २०२५ (नौ महीने)

FIG. 6: STANDARDIZED PRECIPITATION INDEX (SPI) FOR
(a) FEBRUARY (ONE MONTH) (b) JANUARY - FEBRUARY (TWO MONTHS)
(c) JUNE 2024 - FEBRUARY 2025 (NINE MONTHS)

(a) MEAN SEA LEVEL PRESSURE (MSLP)



(b) MSLP Anomaly

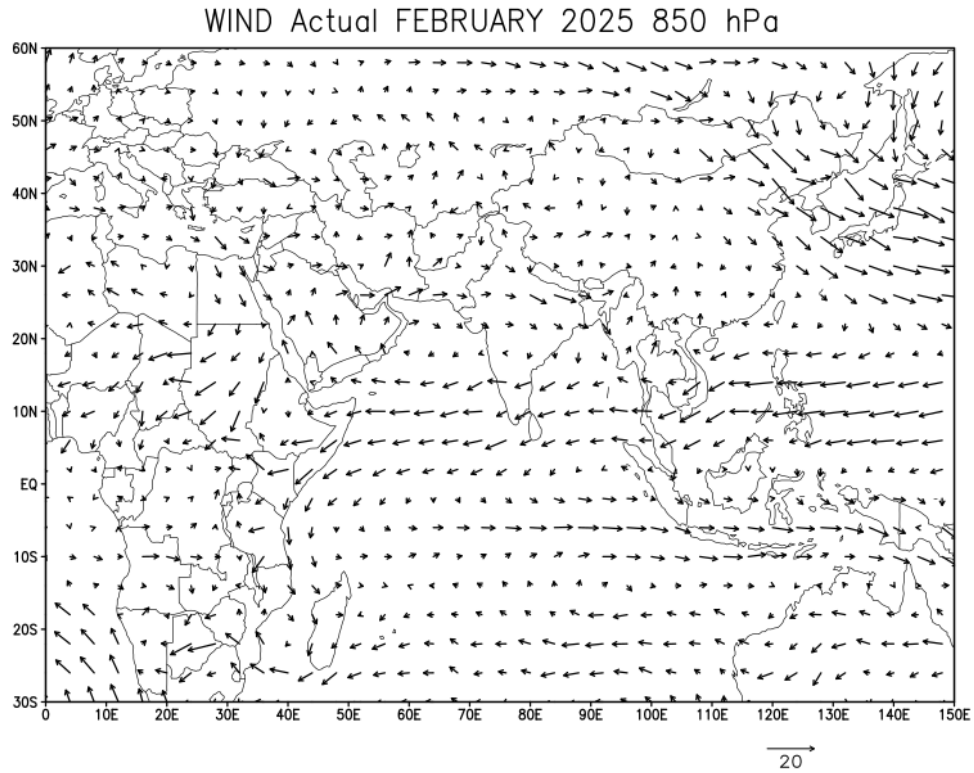


आकृती ७: फरवरी २०२५ के लिए मासिक औसत समुद्र स्तर दबाव (एचपीए)

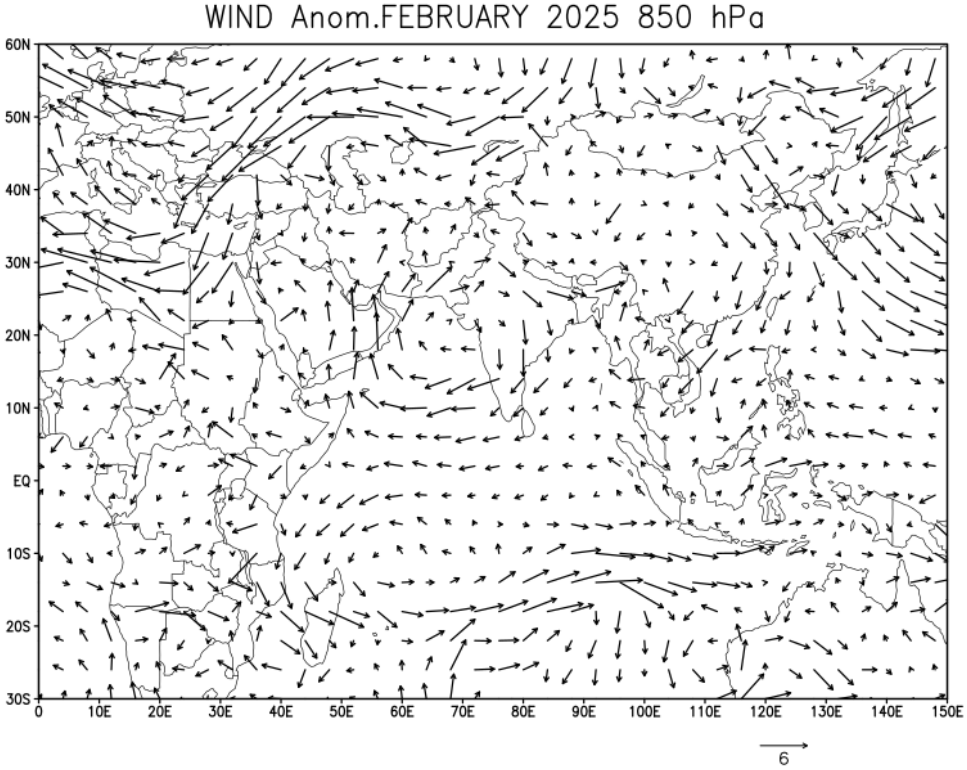
(ए) माध्य (बी) विसंगति (१९९१ - २०२० सामान्य पर आधारित)

FIG. 7: MONTHLY MEAN SEA LEVEL PRESSURE (hPa) (a) MEAN (b) ANOMALY (BASED ON 1991 - 2020 NORMALS)

(a) MEAN WIND: 850 hPa



(b) WIND ANOMALY: 850 hPa



आकृती ८: फरवरी २०२५ के लिए मासिक पवन (मि /से)

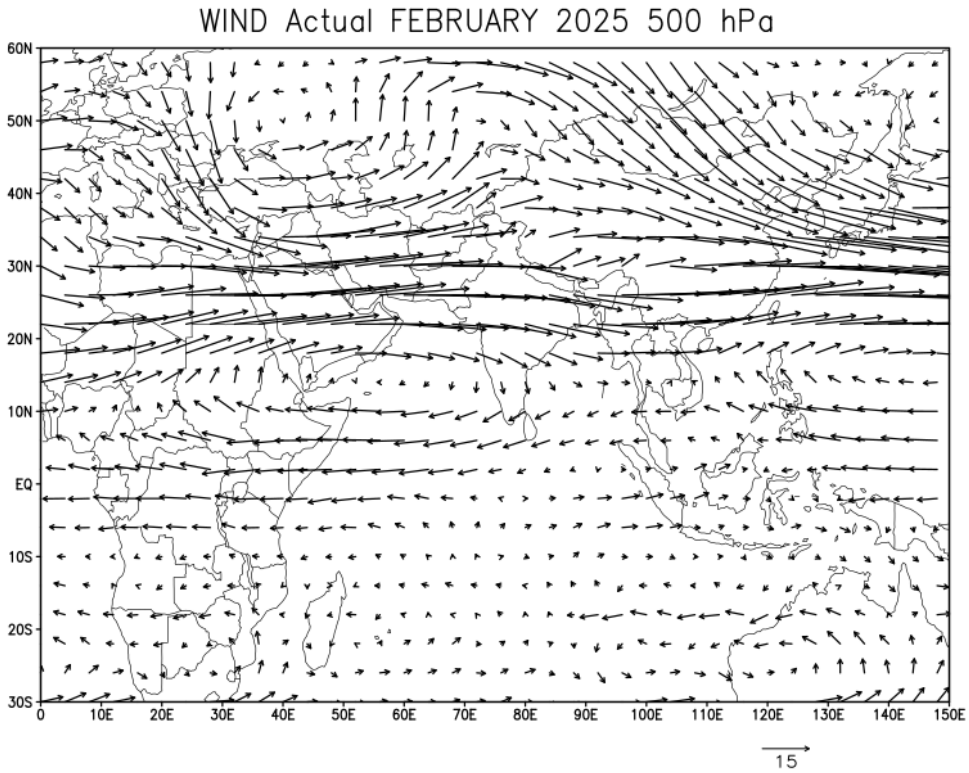
(ए) माध्य (बी) विसंगति ८५० एचपीए स्तरपर

FIG. 8: MONTHLY WIND (m/s) (a) MEAN (b) ANOMALY AT 850 hPa

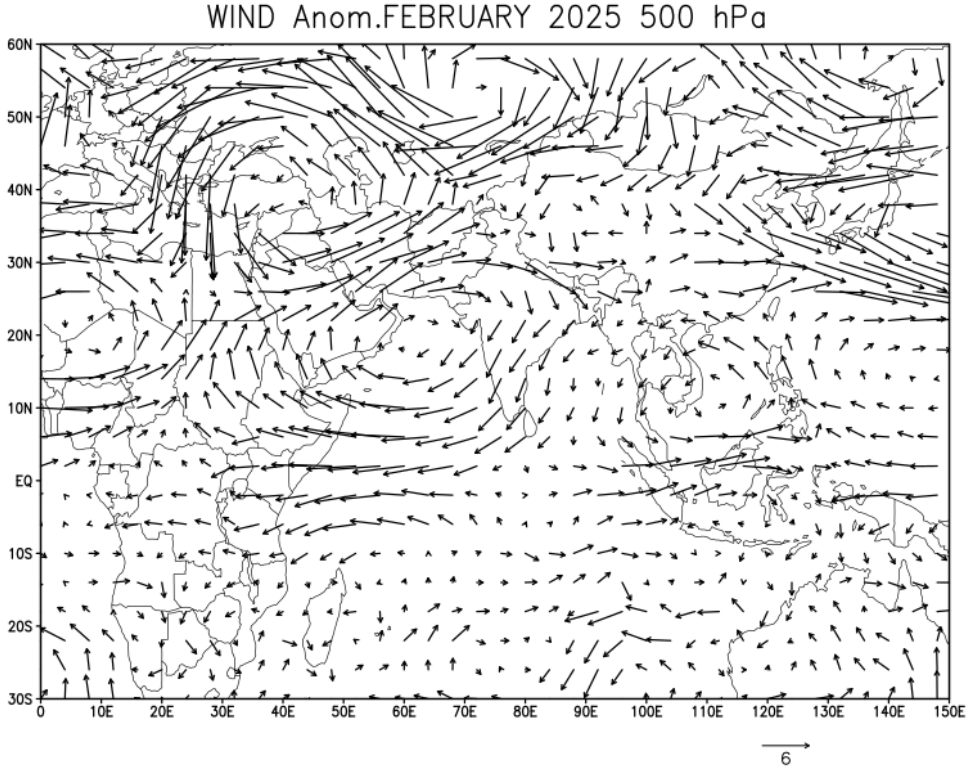
(OPERATIONAL NWP ANALYSIS OF IMD GFS T-574)

(ANOMALY IS BASED ON 2000-2018 Climatology, Source: NCMRWF)

(a) MEAN WIND: 500 hPa



(b) WIND ANOMALY : 500 hPa



आकृती ९: फरवरी २०२५ के लिए मासिक पवन (मि /से)

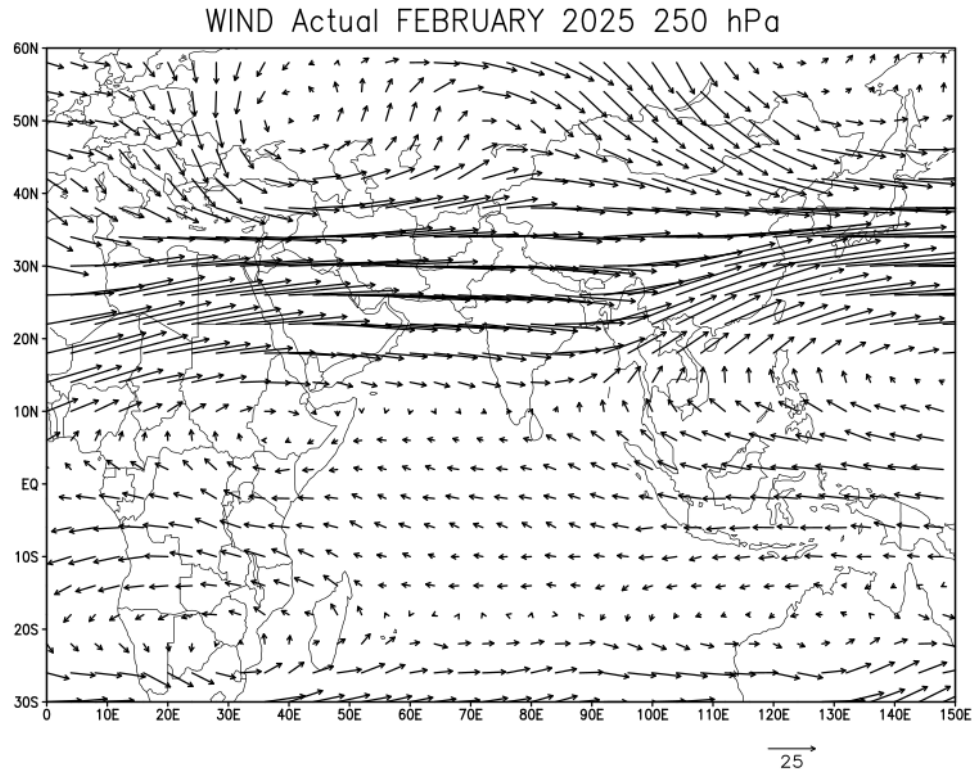
(ए) माध्य (बी) विसंगति ५०० एचपीए स्तरपर

FIG. 9: MONTHLY WIND (m/s) (a) MEAN (b) ANOMALY AT 500 hPa

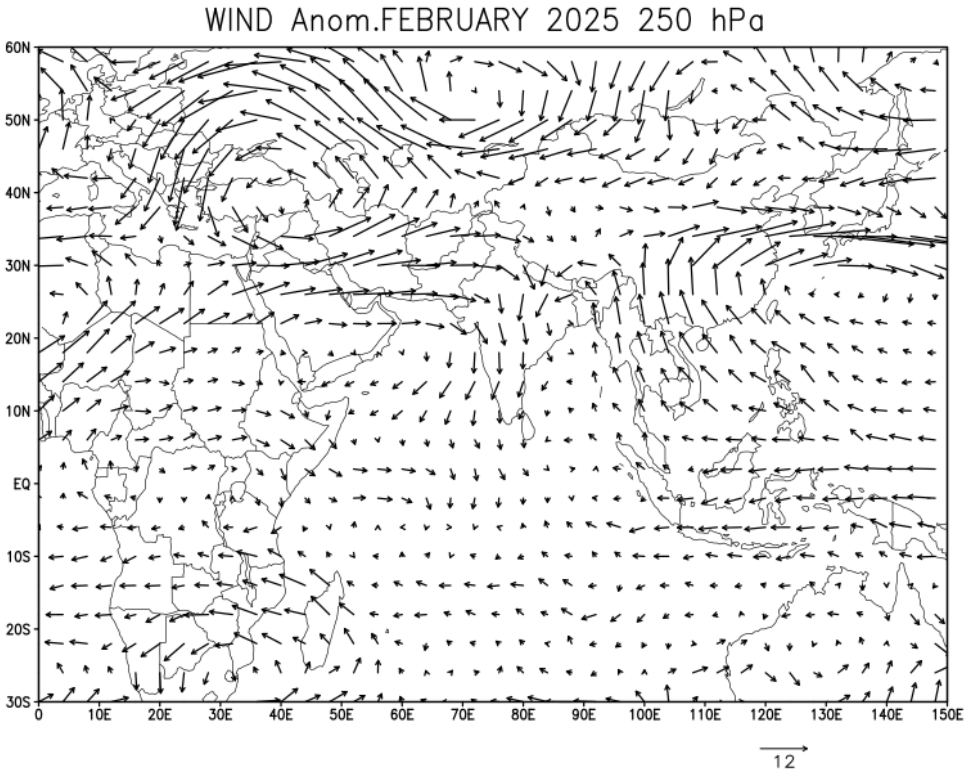
(OPERATIONAL NWP ANALYSIS OF IMD GFS T-574)

(ANOMALY IS BASED ON 2000-2018 Climatology, Source: NCMRWF)

(a) MEAN WIND: 250 hPa



(b) WIND ANOMALY: 250 hPa



आकृती १०: फरवरी २०२५ के लिए मासिक पवन (मि /से)

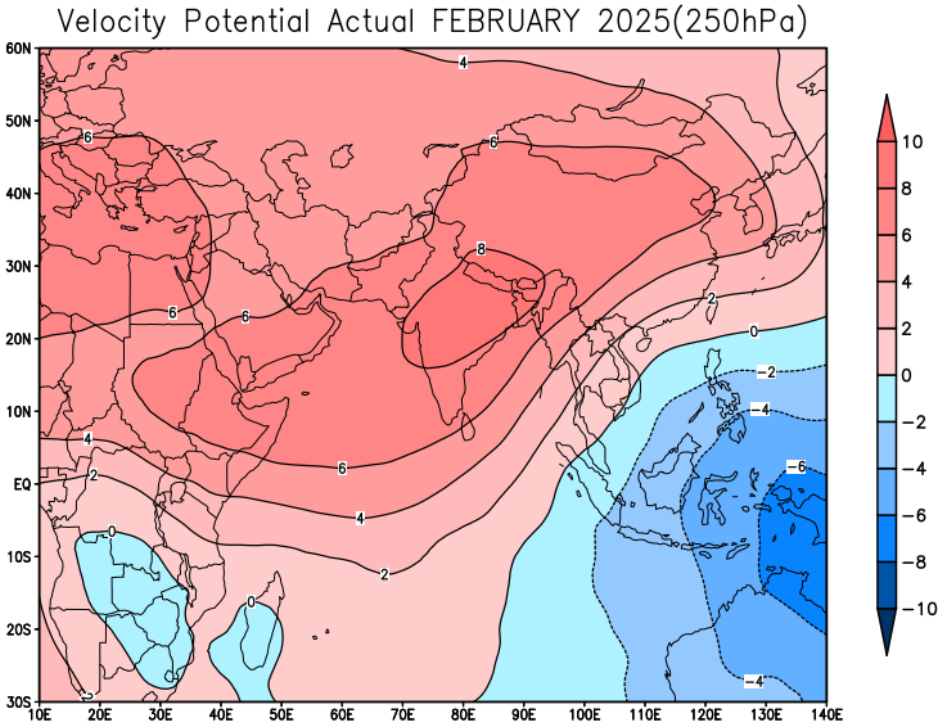
(ए) माध्य (बी) विसंगति २५० एचपीए स्तरपर

FIG. 10: MONTHLY WIND (m/s) (a) MEAN (b) ANOMALY AT 250 hPa

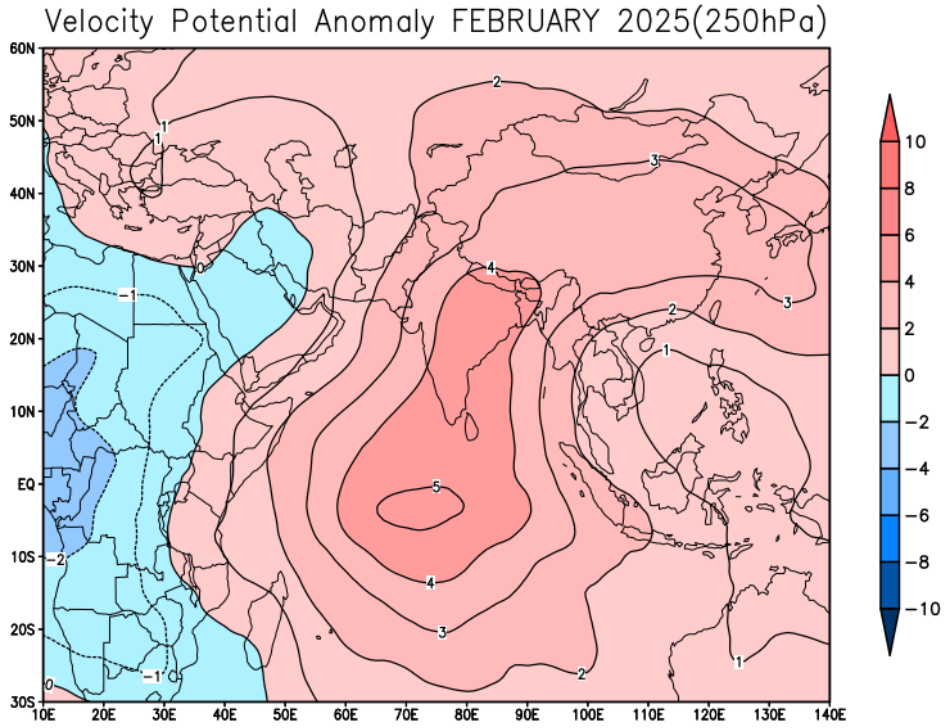
(OPERATIONAL NWP ANALYSIS OF IMD GFS T-574)

(ANOMALY IS BASED ON 2000-2018 Climatology, Source: NCMRWF)

(a) VELOCITY POTENTIAL: 250 hPa



(b) VELOCITY POTENTIAL ANOMALY: 250 hPa



आकृती ११: फरवरी २०२५ के लिए वेग विभव (10 ^{6}मीटर^{2}/सेकेंड)

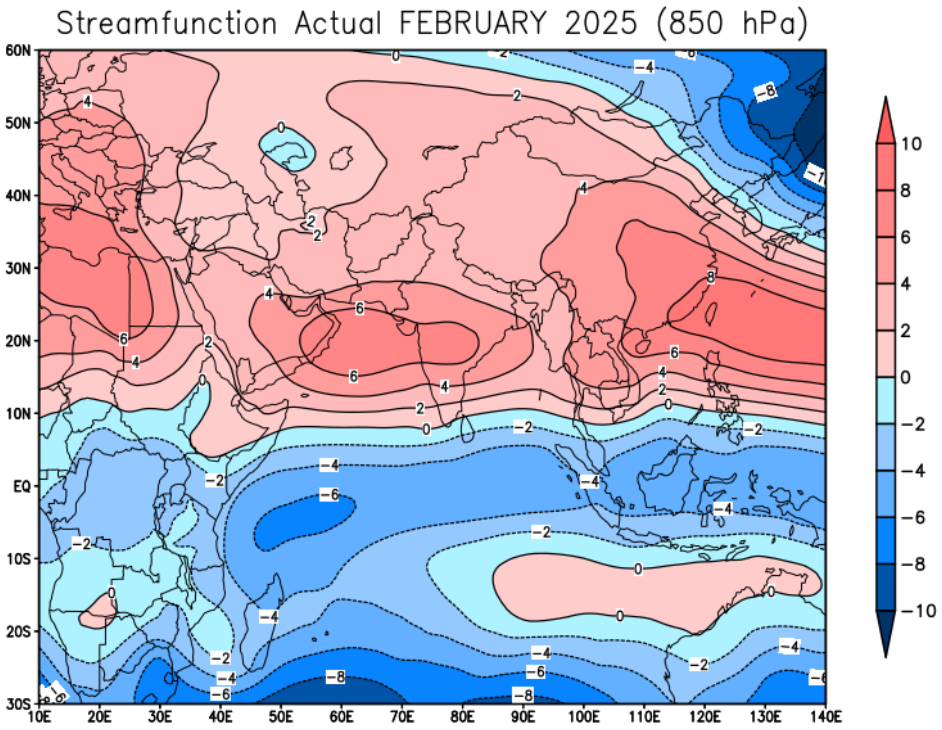
(ए) माध्य (बी) विसंगति २५० एचपीए स्तरपर

FIG. 11: VELOCITY POTENTIAL (10^{6}m^{2}/s) (a) MEAN (b) ANOMALY AT 250 hPa

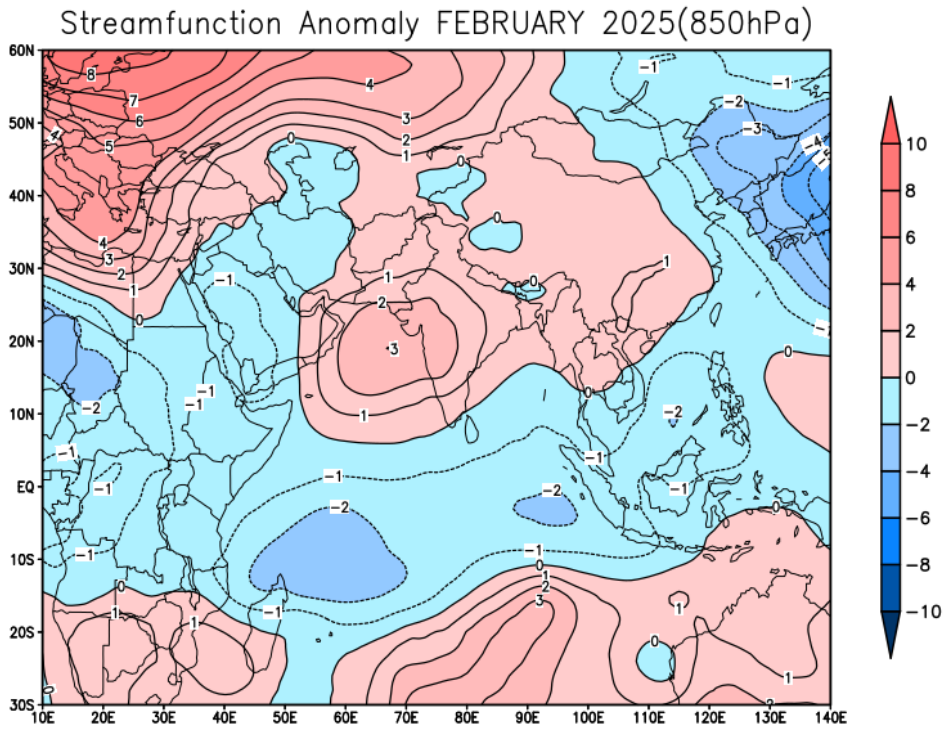
(OPERATIONAL NWP ANALYSIS OF IMD GFS T-574)

(ANOMALY IS BASED ON 2000-2018 Climatology, Source: NCMRWF)

(a) STREAM FUNCTION: 850 hPa



(b) STREAM FUNCTION ANOMALY: 850 hPa



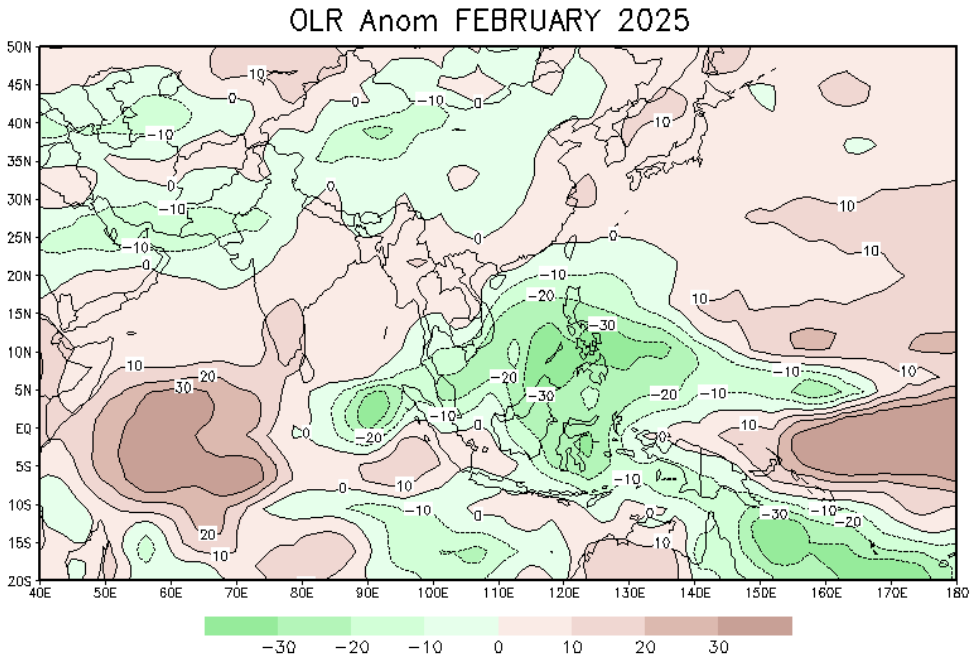
आकृती १२: फरवरी २०२५ के लिए धारा कृत्य (10 ⁶मीटर²/सेकेंड)

(ए) माध्य (बी) विसंगति ८५० एचपीए स्तरपर

FIG. 12: STREAM FUNCTION ($10^6 m^2/s$) (a) MEAN (b) ANOMALY AT 850 hPa

(OPERATIONAL NWP ANALYSIS OF IMD GFS T-574)

(ANOMALY IS BASED ON 2000-2018 Climatology, Source: NCMRWF)



आकृती १३: फरवरी २०२५ के लिए ओ एल आर विसंगति (वॉट/मी^{2})

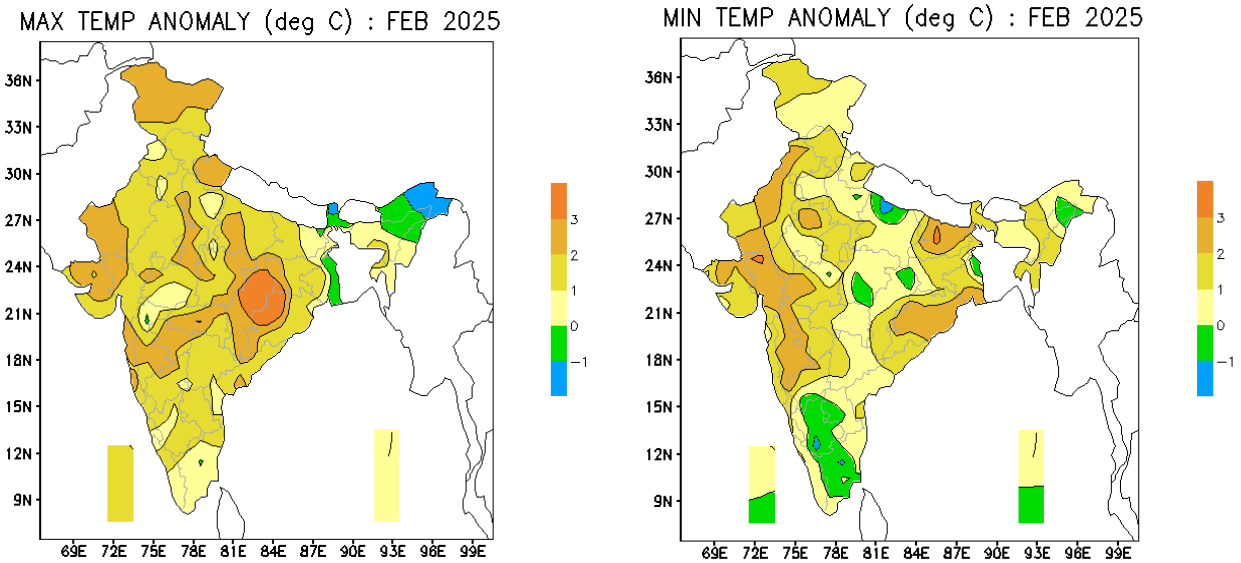
FIG. 13: OLR ANOMALY (W/m^2) FOR FEBRUARY 2025

(SOURCE: CDC / NOAA, USA)

(BASED ON 1991 - 2020 CLIMATOLOGY)

(a) MAXIMUM TEMPERATURE ANOMALY

(b) MINIMUM TEMPERATURE ANOMALY



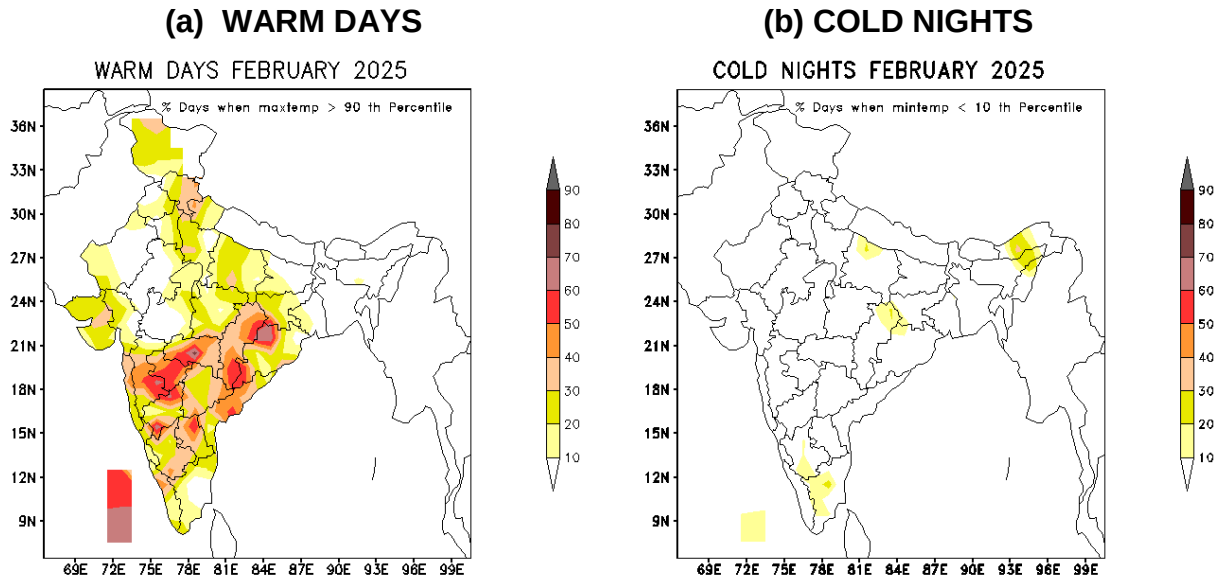
आकृती १४: फरवरी २०२५ के लिए औसत मासिक तापमान विसंगतियां (डिग्री सेल्सियस)

(ए) अधिकतम (बी) न्यूनतम

FIG. 14: MEAN MONTHLY TEMPERATURE ANOMALIES (°C)

(a) MAXIMUM (b) MINIMUM

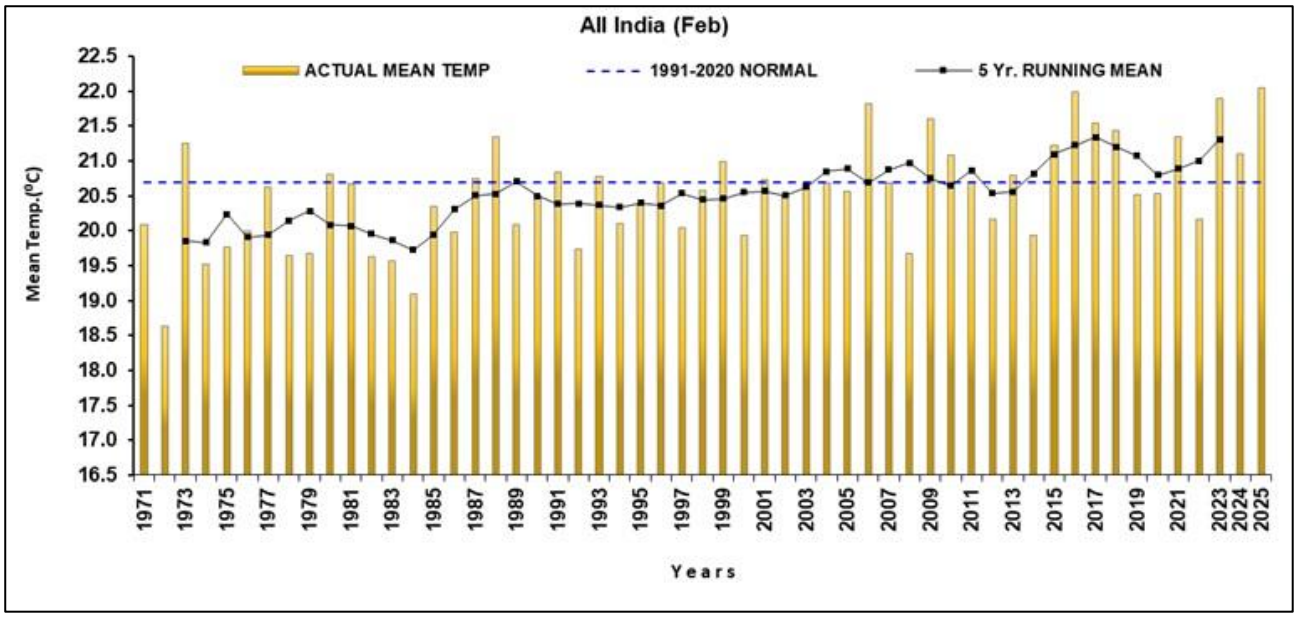
(BASED ON 1991-2020 NORMALS)



आकृती १५: (ए) उन दिनों का प्रतिशत जब अधिकतम तापमान > ९० वें प्रतिशत

(बी) उन दिनों का प्रतिशत जब न्यूनतम तापमान < १० वें प्रतिशत

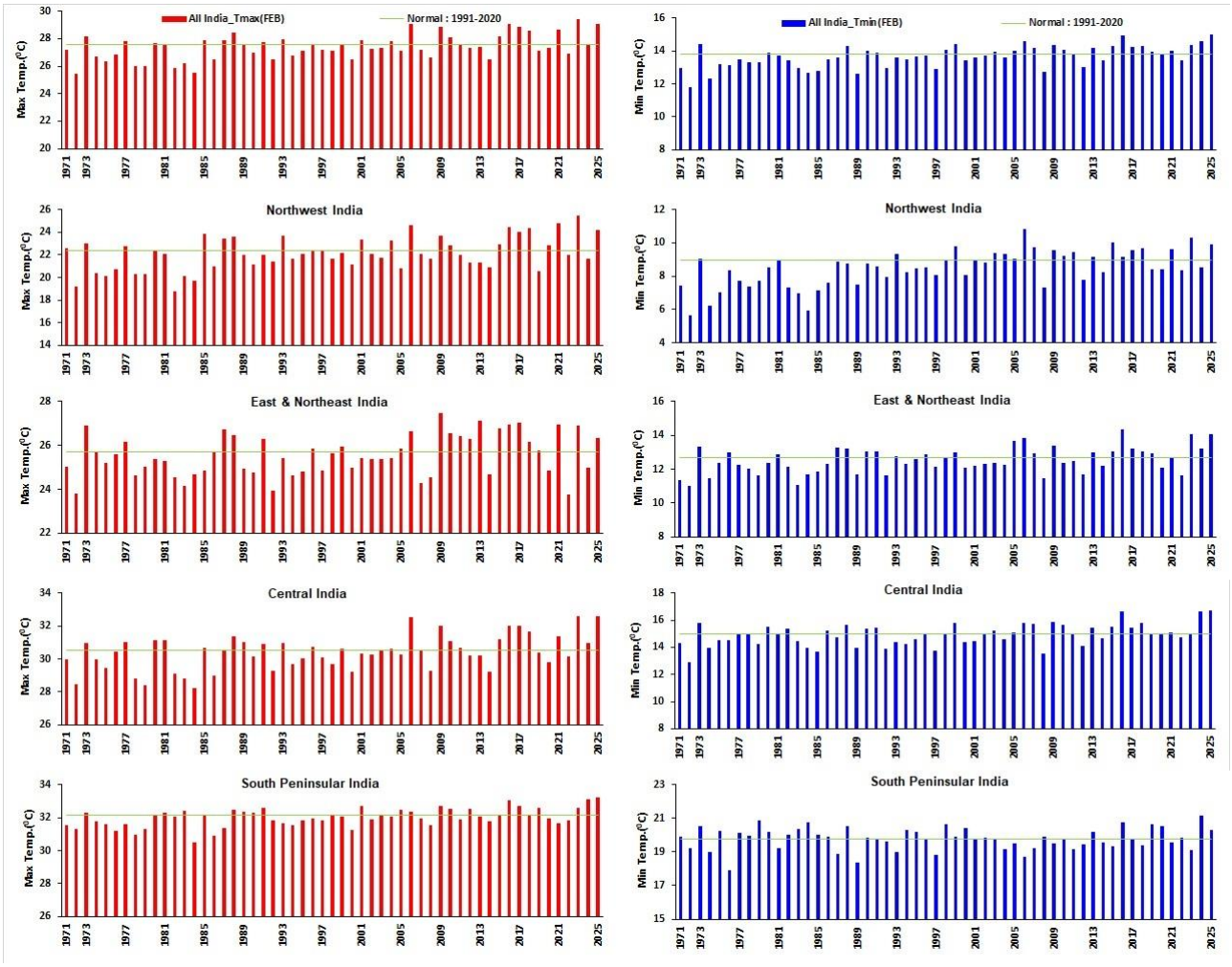
FIG:15 (a) PERCENTAGE OF DAYS WHEN MAXIMUM TEMPERATURE > 90TH PERCENTILE
(b) PERCENTAGE OF DAYS WHEN MINIMUM TEMPERATURE < 10TH PERCENTILE



आकृती १६: फरवरी १९७१-२०२५ की अवधि के दौरान भारत में औसत तापमान की समय श्रृंखला और महीने के लिए पांच साल चलने वाला औसत तापमान

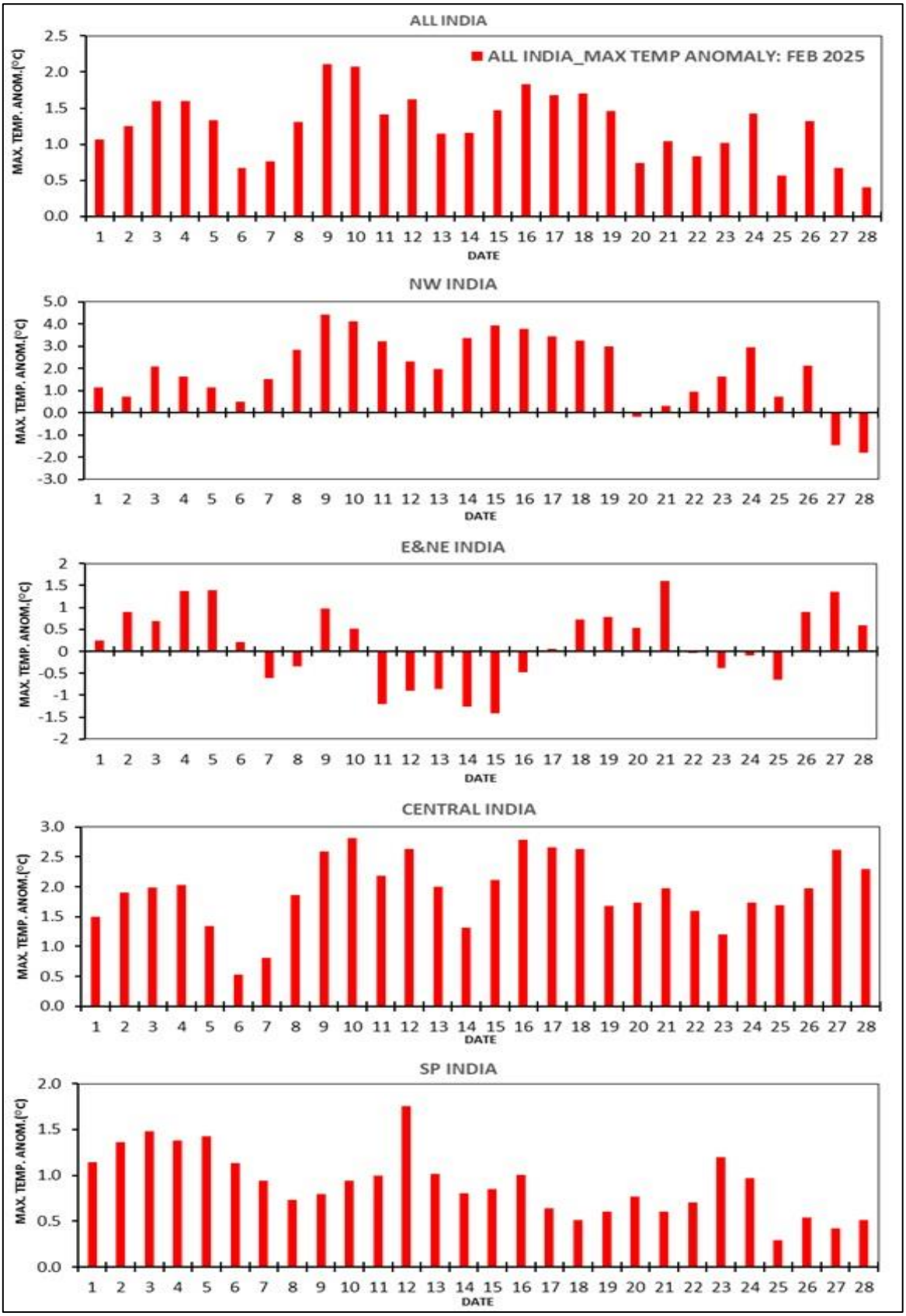
FIG. 16: TIME SERIES OF MEAN TEMPERATURE AVERAGED OVER INDIA (VERTICAL BARS AND FIVE-YEAR RUNNING MEAN (CONTINUOUS LINE) FOR FEBRUARY 2025 (1971-2025)

(a) MAXIMUM **(b) MINIMUM**



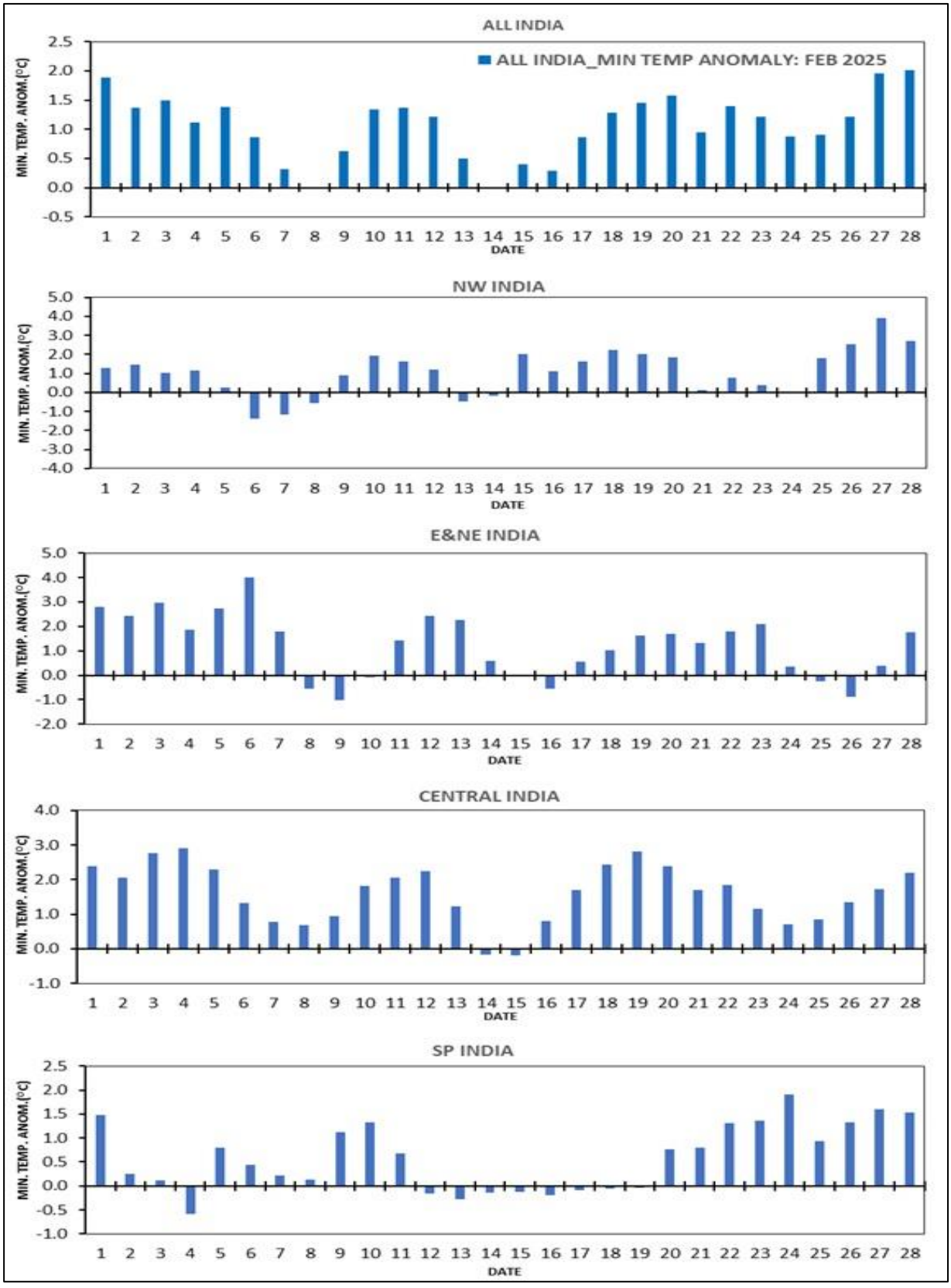
आकृती १७: फरवरी महीने के लिए १९७१-२०२५ अवधि के दौरान (ए) अधिकतम (बी) न्यूनतम तापमान की समय श्रृंखला पूरे देश और चार सजातीय क्षेत्र के लिए

FIG. 17: TIME SERIES OF TEMPERATURE FOR THE COUNTRY AS A WHOLE AND THE FOUR HOMOGENEOUS REGIONS FOR FEBRUARY (1971 - 2025)
(a) MAXIMUM (b) MINIMUM



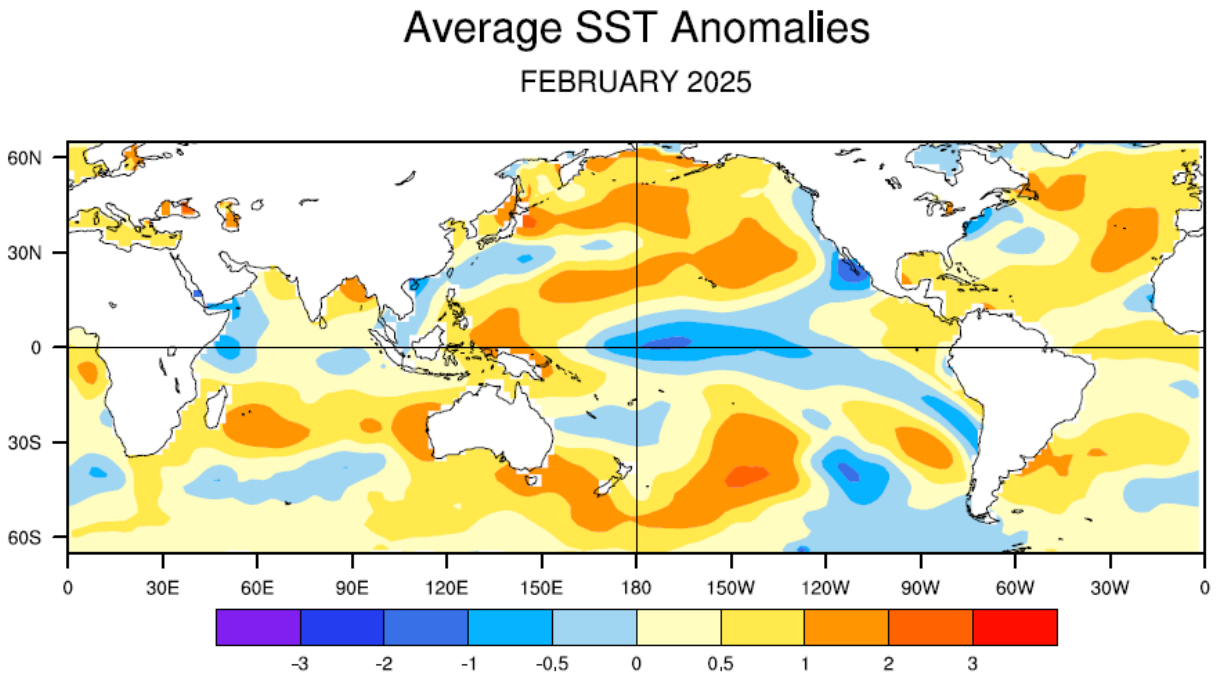
आकृती १८(ए): फरवरी २०२५ के दौरान सभी भारत और चार सजातीय क्षेत्रों में अधिकतम तापमान विसंगती की दैनिक भिन्नता

FIG. 18(a): DAILY VARIATION OF MAXIMUM TEMPERATURE ANOMALY OVER ALL INDIA AND FOUR HOMOGENEOUS REGIONS DURING FEBRUARY 2025



आकृती १८(बी): फरवरी २०२५ के दौरान सभी भारत और चार सजातीय क्षेत्रों में न्यूनतम तापमान विसंगती में दैनिक भिन्नता

FIG. 18(b): DAILY VARIATION OF MINIMUM TEMPERATURE ANOMALY OVER ALL INDIA AND FOUR HOMOGENEOUS REGIONS DURING FEBRUARY 2025



आकृती १९: समुद्री सतह तापमान विसंगति (°C)

FIG. 19: SEA SURFACE TEMPERATURE ANOMALY (°C)

(Source - ERSST V5, NoAA)

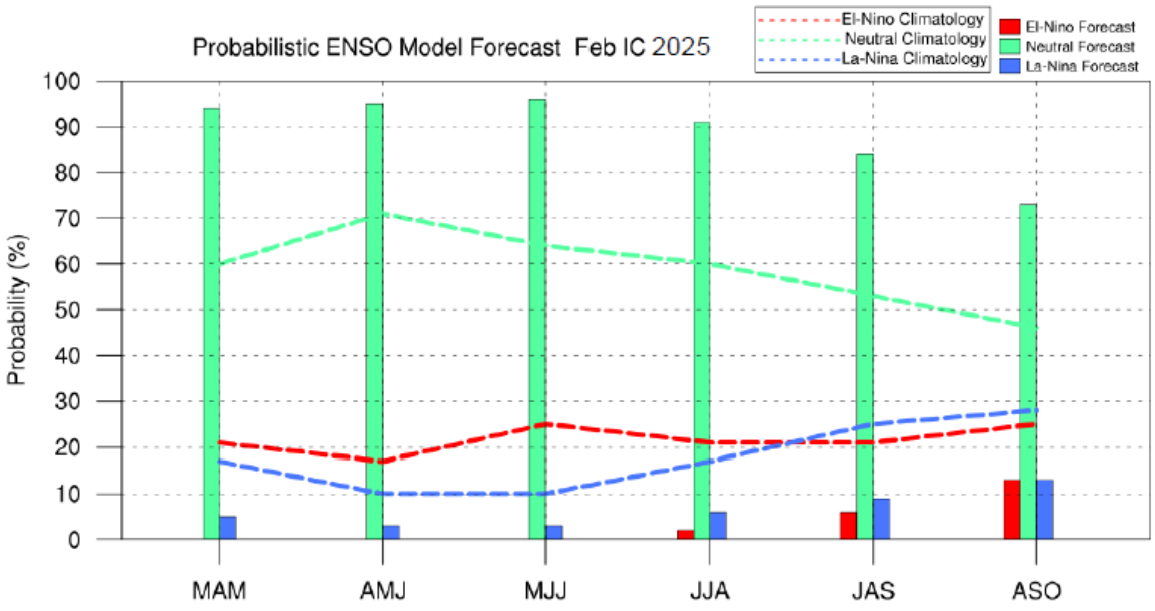
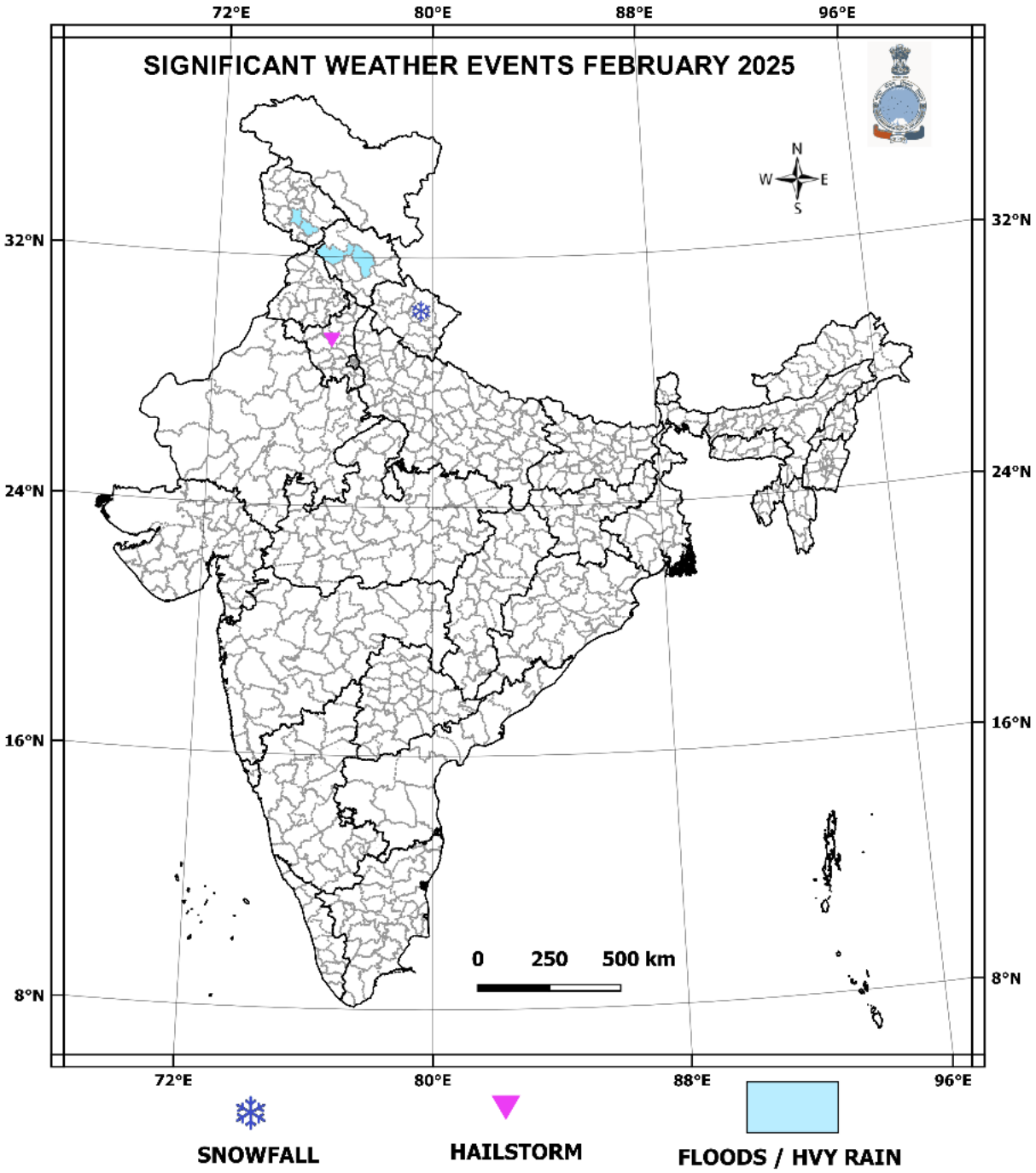


FIG. 20: Probability forecast along with climatological probabilities of Niño 3.4 Index from high-resolution Monsoon Mission Coupled Forecast System (MMCFS).
The data source for Climatology probabilities: NOAA Extended Reconstructed SST V5.
Criteria used for Probabilistic ENSO Forecast:
i.e., -0.5 La Nina, in between +0.5 & -0.5 neutral, g.e.0.5 El Nino.



आकृती २१: फरवरी २०२५ के दौरान महत्वपूर्ण मौसम की घटनाएं
(वास्तविक समय मीडिया रिपोर्ट के आधार पर)

Fig. 21: SIGNIFICANT WEATHER EVENTS DURING FEBRUARY 2025 (BASED ON REAL TIME MEDIA REPORT)

तालिका १ / TABLE 1

फरवरी २०२५ महीने के लिए उपमंडल वार वर्षा के आकडे

METEOROLOGICAL SUBDIVISION WISE RAINFALL STATISTICS FOR THE MONTH OF FEBRUARY 2025 BASED ON OPERATIONAL DATA

MET. SUBDIVISION		ACTUAL (mm)	NORMAL (mm)	% DEP
1	A & N ISLAND	54.6	23.7	130.4
2	ARUNACHAL PRADESH	91.0	87.3	4.3
3	ASSAM & MEGHALAYA	15.1	28.3	-46.8
4	N M M T	3.6	21.5	-83.5
5	SHWB & SIKKIM	38.6	28.3	36.2
6	GANGETIC WEST BENGAL	20.4	16.6	22.7
7	ODISHA	8.7	14.5	-39.8
8	JHARKHAND	5.9	14.4	-59.0
9	BIHAR	0.4	10.4	-95.7
10	EAST U.P.	0.1	13.1	-99.1
11	WEST U.P.	1.8	17.6	-90.0
12	UTTARAKHAND	47.6	59.5	-20.1
13	HAR. CHD & DELHI	5.6	17.4	-67.7
14	PUNJAB	21.6	27.1	-20.3
15	HIMACHAL PRADESH	117.1	101.8	15.0
16	JAMMU & KASHMIR & LADAKH	119.8	130.4	-8.1
17	WEST RAJASTHAN	1.0	5.4	-80.6
18	EAST RAJASTHAN	0.9	5.9	-84.0
19	WEST MADHYA PRADESH	0.2	7.1	-97.5
20	EAST MADHYA PRADESH	0.0	17.6	-99.0
21	GUJARAT REGION	0.0	0.5	-100.0
22	SAURASHTRA & KUTCH	0.0	0.4	-100.0
23	KONKAN & GOA	0.0	0.2	-100.0
24	MADHYA MAHARASHTRA	0.0	1.3	-100.0
25	MARATHWADA	0.0	2.4	-100.0
26	VIDARBHA	0.0	7.0	-100.0
27	CHHATTISGARH	0.3	9.8	-97.2
28	COASTAL A. P.& YANAM	0.0	12.5	-99.0
29	TELANGANA	0.2	6.7	-97.6
30	RAYALASEEMA	0.0	4.8	-100.0
31	TAMIL., PUDU. & KARAIKAL	2.7	12.5	-78.2
32	COASTAL KARNATAKA	1.1	1.3	-13.7
33	N. I. KARNATAKA	0.1	1.8	-96.3
34	S. I. KARNATAKA	0.0	3.6	-100.0
35	KERALA & MAHE	1.7	13.7	-87.7
36	LAKSHADWEEP	0.0	10.0	-100.0

तालिका २ / TABLE 2

फरवरी २०२५ के दौरान २४ घंटो में हुई भारी, बहुत भारी वर्षा वाले स्टेशन

STATIONS WHICH RECEIVED HEAVY (64.5 to 115.5 mm),VERY HEAVY(115.6 to 204.4 mm) & EXTREMELY HEAVY (>=204.4 mm) RAINFALL IN 24 HOURS DURING FEBRUARY 2025

(Only the stations which received the highest rainfall in the subdivision on the given date are mentioned in the table)

DATE	STATION NAME	NAME OF SUBDIVISION	RAINFALL (mm)
21	BURDWAN (PTO)	GANGETIC WEST BENGAL	80
	TORPA	JHARKHAND	82.4
23	JHARGRAM (PTO)	GANGETIC WEST BENGAL	94.4
26	IAF CARNICOBAR	A & N ISLAND	105.6
	RAMESWARAM	TAMIL NADU & PUDUCHERRY	65
27	BANIHAL	JAMMU & KASHMIR	76.2
28	DEOPRAYAG	UTTARAKHAND	90.6
	PATHANKOT IAF	PUNJAB	122.6
	KOTHI	HIMACHAL PRADESH	132
	UDHAMPUR(IAF)	JAMMU & KASHMIR	215.4

तालिका ३ / TABLE 3

फरवरी २०२५ महीने के दौरान की तापमान विसंगति

TEMP ANOMALIES OVER INDIA AND FOUR HOMOGENEOUS REGIONS DURING FEBRUARY 2025

FEB 2025		Max Temp (^{0}C)	Min Temp (^{0}C)	Mean Temp (^{0}C)
ALL INDIA	**ACTUAL**	**29.10**	**15.02**	**22.06**
	NORMAL	27.58	13.82	20.70
	ANOMALY	1.52	1.20	1.36
NORTHWEST INDIA	**ACTUAL**	**24.22**	**9.93**	**17.07**
	NORMAL	22.37	8.94	15.66
	ANOMALY	1.85	0.99	1.42
EAST & NORTHEAST INDIA	**ACTUAL**	**26.31**	**14.07**	**20.19**
	NORMAL	25.71	12.66	19.19
	ANOMALY	0.60	1.41	1.00
CENTRAL INDIA	**ACTUAL**	**32.56**	**16.72**	**24.64**
	NORMAL	30.53	14.99	22.76
	ANOMALY	2.03	1.73	1.88
SOUTH PENNINSULAR INDIA	**ACTUAL**	**33.24**	**20.28**	**26.76**
	NORMAL	32.13	19.74	25.93
	ANOMALY	1.11	0.54	0.82

NOTE: VALUES ARE ROUNDED OFF TO NEAREST TWO DECIMAL

तालिका ४ / TABLE 4

ATMOSPHERIC AND SST INDEX VALUES FOR THE RECENT 12 MONTHS. ATMOSPHERIC INDICES ARE STANDARDIZED BY MEAN ANNUAL STANDARD DEVIATION EXCEPT FOR THE TAHITI AND DARWIN SLP ANOMALIES WHICH ARE IN hPa. SST INDICES (ANOMALIES AND MEAN) ARE IN DEGREES CELSIUS

SLP ANOMALIES			Tahiti SLP minus Darwin SLP	PACIFIC SST							
				NINO 1+2 0^0 - 10^0S 90^0W - 80^0W		NINO 3 5^0N - 5^0S 150^0W - 90^0W		NINO 3.4 5^0N - 5^0S 170^0W - 120^0W		NINO 4 5^0N - 5^0S 160^0E - 150^0W	
Month	Tahiti	Darwin	SOI	Anomaly	Mean	Anomaly	Mean	Anomaly	Mean	Anomaly	Mean
FEB 25	0.90	0.00	0.90	0.37	26.47	-0.10	26.31	-0.59	26.16	-0.58	27.62
JAN 25	0.70	0.30	0.30	-0.35	24.22	-0.36	25.30	-0.77	25.78	-0.56	27.76
DEC 24	1.10	-1.10	1.90	-0.03	22.78	-0.38	24.85	-0.56	26.04	-0.24	28.30
NOV 24	1.30	0.40	0.80	0.04	21.69	-0.13	24.97	-0.19	26.51	0.19	28.89
OCT 24	0.70	-0.20	0.80	-0.35	20.67	-0.17	24.81	-0.29	26.43	0.11	28.87
SEP 24	-0.50	-0.30	-0.20	-0.75	19.98	-0.20	24.71	-0.26	26.46	0.15	28.91
AUG 24	1.70	0.00	1.50	-0.46	20.54	-0.26	24.86	-0.07	26.79	0.44	29.23
JUL 24	-0.60	0.70	-1.20	-0.75	21.21	-0.10	25.70	0.09	27.39	0.56	29.46
JUN 24	0.80	0.80	0.10	-0.99	22.14	-0.29	26.33	0.16	27.89	0.71	29.68
MAY 24	1.00	0.10	0.80	-1.15	23.27	-0.14	27.12	0.32	28.25	0.81	29.72
APR 24	-0.20	0.10	-0.30	-0.03	25.51	0.54	28.12	0.8	28.62	0.93	29.55
MAR 24	0.60	0.00	0.60	0.54	27.03	0.92	28.12	1.16	28.44	0.99	29.31

(Data Source: CPC/NCEP, USA)

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भारत का जलवायु नैदानिक बुलेटीन

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Climate Monitoring & Prediction Group

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