

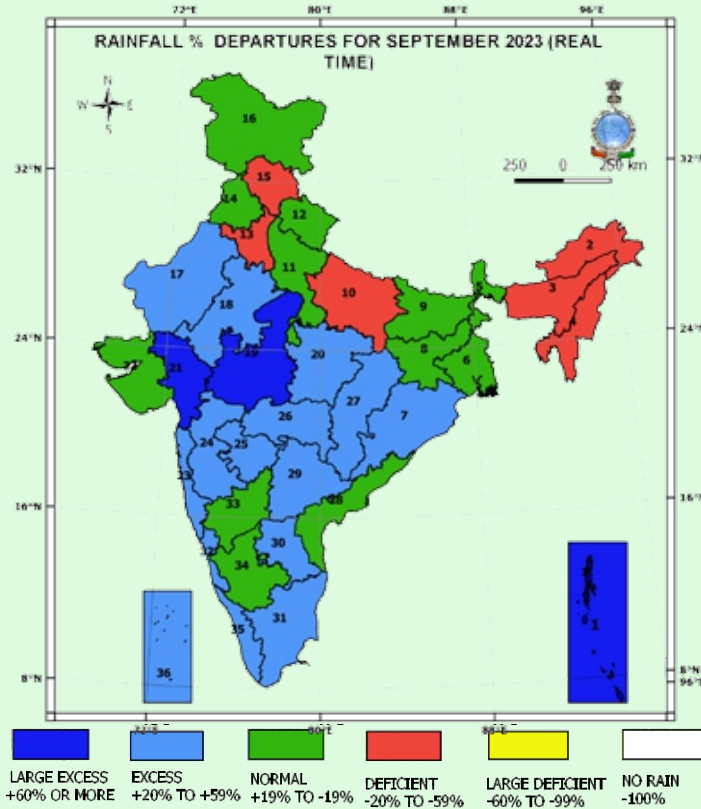


भारत सरकार / GOVERNMENT OF INDIA
पृथ्वी विज्ञान मंत्रालय / MINISTRY OF EARTH SCIENCES
पृथ्वी प्रणाली विज्ञान संगठन / EARTH SYSTEM SCIENCE ORGANIZATION
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भारत का जलवायु नैदानिक बुलेटीन CLIMATE DIAGNOSTICS BULLETIN OF INDIA

सितम्बर 2023
SEPTEMBER 2023

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



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

सितम्बर 2023 (सारांश)

माह की मुख्य विशेषताएं

प्रमुख बिंदु :

सितम्बर माह में पूरे भारत का माध्य तापमान (28.22⁰से.) 1901 से सबसे अधिक रहा। अधिकतम तापमान (32.22⁰से.) 1901 से दुसरा सबसे अधिक रहा। न्यूनतम तापमान (24.22⁰से.) 1901 से सबसे अधिक रहा। पूर्व और उत्तर-पूर्व भारत का न्यूनतम तापमान (25.12⁰से.) और अधिकतम तापमान (33.42⁰से.) 1901 से सबसे अधिक रहे। उत्तर-पश्चिम भारत का अधिकतम तापमान (32.99⁰से.) 1901 से तिसरा सबसे अधिक रहा। न्यूनतम तापमान (22.65⁰से.) 1901 से दुसरा सबसे अधिक रहा। मध्य भारत का न्यूनतम तापमान (24.44⁰से.) 1901 से दुसरा सबसे अधिक रहा।

दक्षिणी-पश्चिमी मानसून की वापसी :

आकृति 1 में दक्षिणी-पश्चिमी मानसून की वापसी का मानचित्र दर्शाया गया है। 25 सितम्बर को पश्चिम राजस्थान से दक्षिणी-पश्चिमी मानसून की वापसी शुरू हुई।

वर्षा की विशेषताएं :

36 मौसम उप मंडलों में से 3 में सामान्य से अधिक, 15 में अधिक, 12 में सामान्य, 6 में सामान्य से कम, वर्षा हुई (आकृति 2(ए))। तालिका 1 में, सितम्बर 2023 के उप मंडल-वार वर्षा के आँकड़े (मि. मी.) में दर्शाए गए हैं। आकृति 2 (बी) में जून से सितम्बर माह के संचित उप मंडल-वार वर्षा के आँकड़े (मि. मी.) में दर्शाए गए हैं।

आकृति 3(ए) में माह के दौरान देश के विभिन्न भाग में हुई वर्षा (मि. मी.) दर्शायी गयी है। आकृति 3(बी) में माह के दौरान देश के विभिन्न भाग में हुई वर्षा विसंगति (मि. मी.) दर्शायी गयी है। आकृति 4 में सितम्बर के चार सप्ताहों का वास्तविक, दीर्घावधि औसत (एल.पी.ए.) और उसका प्रतिशत विचलन का स्थानिक रूप दर्शाया गया है।

आकृति 5 महीने के दौरान पूरे भारत और चार समरूप क्षेत्रों में दैनिक वर्षा भिन्नता दर्शाता है। पूरे देश में, माह के दीर्घावधि औसत मान का 113% वर्षा हुई। आकृति 6 में वर्ष 1951 से अब तक के सम्पूर्ण भारत की और चार समरूपी क्षेत्रों की क्षेत्र भारित वर्षा श्रृंखला दर्शाई गयी है।

माह की वर्षा भारत के दक्षिण प्रायद्विप में (एल.पी.ए. का 124%), पूर्व और उत्तर-पूर्व भारत में (एल.पी.ए. का 75%), मध्य भारत में (एल.पी.ए. का 149%) तथा उत्तर-पश्चिम भारत में (एल.पी.ए. का 89%) रही। तालिका 2 में माह के दौरान 24 घंटों में हुई भारी (64.5 से 115.5 मि. मी. तक), अति भारी (115.6 से 204.4 मि. मी. तक), या अत्यधिक भारी (≥ 204.5 मि. मी. या अधिक) वर्षा वाले स्टेशनों की सूची दर्शाई गई है। आकृति 7 में भारी, अति भारी और अत्यधिक भारी वर्षा वाले स्टेशन दर्शाए गए हैं।

मानकीकृत वर्षण सूचकांक (एस.पी.आई.):

मानकीकृत वर्षण सूचकांक अनावृष्टि मापने का एक सूचकांक है जो केवल वर्षा पर आधारित होता है। यह सूचकांक शुष्क स्थिति में ऋणात्मक और आर्द्र 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 8(ए, बी, सी) में सितम्बर 2023, जून - सितम्बर 2023 (4 माह के संचित) तथा जनवरी 2023 - सितम्बर 2023 (9 माह के संचित) के मानकीकृत वर्षण सूचकांक दर्शाए गए हैं।

सितम्बर माह के दौरान अन्दमान और निकोबार द्वीपसमूह, ओडिशा, जम्मू कश्मीर और लदाख, पूर्वी राजस्थान, मध्य प्रदेश राज्य, गुजरात, छत्तीसगढ़, तेलंगणा, रायलसीमा और तामिलनाडु पुदुचेरी और करायकल के कुछ भाग में चरम आर्द्र / प्रचंड आर्द्र स्थितियाँ रहीं, जबकि अरुणाचल प्रदेश, आसाम और मेघालय, नागालैंड,

मणिपुर, मिझोराम, त्रिपुरा, उप हिमालयीन पश्चिम बंगाल और सिक्किम, बिहार, जम्मू कश्मीर और लदाख और दक्षिणी आंतरिक कर्नाटक के कुछ भाग में चरम शुष्क / प्रचंड शुष्क स्थितियाँ रही ।

दाब :

आकृती 9(ए) तथा 9(बी) क्रमशः माध्य समुद्र तल दाब तथा इसकी विसंगति दर्शाते हैं । अधोरेखा द्वारा ऋणात्मक मान दर्शाए गए हैं ।

पवन:

आकृती 10(ए) तथा 10(बी), 11(ए) तथा 11(बी), 12(ए) तथा 12(बी) में क्रमशः पवन का 850, 500 और 250 एच.पी.ए. स्तरों पर माध्य परिसंचरण स्वरूप तथा इसकी विसंगति को दर्शाता है ।

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

आकृती 13(ए) तथा 13(बी) में 250 एच.पी.ए. स्तर पर माध्य वेग विभव तथा इसकी विसंगति को दर्शाया गया है । इसी प्रकार आकृती 14(ए) तथा 14(बी) में माध्य धारा कृत्य तथा इसकी विसंगति को दर्शाते हैं। अधोरेखा द्वारा ऋणात्मक मान दर्शाये गए हैं ।

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

भारत के क्षेत्रों तथा आसपास की बहिर्गामी दीर्घतरंग विकिरण (वॉट/मी²) आकृती 15 में दर्शाई गई हैं ।

तापमान:

माध्य मासिक अधिकतम तथा न्यूनतम तापमान विसंगति आकृती 16(ए) तथा 16(बी) में दर्शाई गई हैं ।

उष्ण दिनों / शीत रात्रियों का प्रतिशत:

आकृती 17(ए) तथा 17(बी) में अधिकतम (न्यूनतम) तापमान जब 90वें (10वें) पर्सेंटाइल से अधिक(कम) वाले दिनों का प्रतिशत दर्शाया गया है । आकृती 18 में पूरे देश में सितम्बर माह में 1971 से अब तक के औसत तापमान दर्शाये गए हैं । 5 वर्ष के चल औसत भी दर्शाये गए हैं । इस वर्ष के सितम्बर माह का औसत तापमान 28.22⁰से. रहा, जो 1901 से सबसे अधिक रहा । आकृती 19(ए) तथा 19(बी) में चारों समरूपी क्षेत्रों के वर्ष 1971 से अब तक के सितम्बर माह के दौरान रहे अधिकतम और न्यूनतम तापमानों की श्रृंखला दर्शाई गई हैं ।

आकृती 20(ए) तथा 20(बी) में महीने के दौरान पुरे भारत में दैनिक अधिकतम और न्यूनतम तापमानों विसंगति की श्रृंखला दर्शाई है । तालिका 3 में माह के दौरान की तापमान विसंगति दर्शाई गयी है।

निम्न दाब प्रणालियाँ:

इस माह अरब सागर में एक अवदाब बना और बंगाल की खाड़ी में चार निम्न दाब क्षेत्र बने, उनमें से दो सुस्पष्ट चिन्हांकीत निम्न दाब क्षेत्र बने । आकृती 21 में अवदाब का मार्ग दर्शाया गया है ।

हिन्द एवं प्रशान्त महासागरों पर समुद्री सतह तापमान विसंगति:

आकृती 22 उष्ण कटिबंधीय हिन्द एवं प्रशांत महासागरों पर समुद्री सतह तापमान विसंगति दर्शाता है।

दक्षिणी दोलन सूचकांक तथा प्रशांत समुद्री सतह तापमान सूचकांक:

दक्षिणी दोलन सूचकांक (तालिका 4) इस माह के दौरान ऋणात्मक (-2.1) रहा ।

एन्सो पूर्वानुमान: आकृती 23 आने वाले ऋतुओं के लिये एम.एम.सी.एफ.एस. एन्सो पूर्वानुमान दर्शाता है ।

आपत्कालीन मौसम घटनाएँ: आकृती 24 आपत्कालीन मौसम घटनाएँ दर्शाता है ।

SEPTEMBER - 2023

MAIN FEATURES OF THE MONTH

Highlights:

In September, over the country, the mean temperature was 28.22°C with an anomaly of 0.91°C and it was highest since 1901. Over the country as a whole the maximum temperature was 2nd highest (32.22°C with an anomaly of 0.86°C) after the year 2015(32.39°C) and the minimum temperature was highest (24.22°C with an anomaly of 0.96°C) since 1901.

Among the four homogeneous regions, over Northwest India the maximum temperature was 3rd highest (32.99°C with an anomaly of 1.23°C) after the years 1968(33.55°C), 1987(33.02°C) and the minimum temperature was 2nd highest (22.65°C with an anomaly of 1.66°C) after the year 2021(22.66°C) since 1901. Over East & Northeast India the maximum temperature was highest (33.42°C with an anomaly of 2.25°C) and minimum temperature was also highest (25.12°C with an anomaly of 1.34°C) since 1901. Over Central India the minimum temperature was 2nd highest (24.44°C with an anomaly of 0.73°C) after the year 2020(24.70°C) since 1901.

Withdrawal of southwest monsoon:

Withdrawal of southwest monsoon began from southwest Rajasthan on 25th September, 2023 against its normal date of 17th September. The withdrawal line passed through Gulmarg, Dharamshala, Pantnagar, Etawah, Morena, Sawai Madhopur, Jodhpur, Barmer and 25.7°N/70.3°E by 30th September.

Fig.1 shows the isochrones of withdrawal of Southwest Monsoon 2023 till 30th September.

Rainfall Features:

Except Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, East Uttar Pradesh, Himachal Pradesh and Haryana, Chandigarh & Delhi remaining subdivisions received large excess/excess/normal rainfall.

Out of 36 meteorological subdivisions, 3 received large excess rainfall, 15 received excess rainfall, 12 received normal rainfall, 6 subdivisions received deficient rainfall (Fig.2a). Table 1 shows the subdivision wise rainfall statistics (mm) for September 2023. Fig. 2(b) shows the meteorological subdivision wise cumulative rainfall percentage departures for the season from 1st June to 30st September. Cumulative rainfall was excess over 3 sub divisions, normal over 26 and deficient over 7 meteorological sub divisions.

Fig. 3(a) shows the spatial pattern of rainfall (mm) received during the September 2023. Parts of Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Sub Himalayan West Bengal & Sikkim, Odisha, Bihar, Uttarakhand, Chhatisgarh, East and west Madhya Pradesh, Vidarbha Gujarat Region, Tamilnadu, Puducherry & Karaikal, entire west coast and both the islands received more than 300 mm of rainfall.

Fig. 3(b) shows the spatial pattern of rainfall anomaly (mm) during the month. Positive rainfall anomaly more than 150 mm was observed over parts of Andaman & Nicobar islands, East and west Madhya Pradesh, Gujarat Region, East Rajasthan, Chhatisgarh, Vidarbha, Odisha, Tamilnadu, Puducherry & Karaikal and entire west coast. Magnitude of negative rainfall anomaly was more than 150 mm over parts of Arunachal Pradesh, Assam & Meghalaya, Sub Himalayan West Bengal & Sikkim, Bihar and East Uttar Pradesh.

Fig. 4 shows the spatial pattern of actual, Long Period Average (LPA) rainfall and its percentage departure during the four weeks of September 2023. Fig 5 shows daily variation of the rainfall over the country as a whole and four homogeneous regions during the September 2023.

Fig. 6 shows area weight averaged rainfall series for September over all India and four homogeneous regions since 1951. Rainfall realized over the country as a whole was 113% of its LPA during the September 2023. The realized rainfall for the month of September this year was 89% of its LPA over northwest India, 149% of its LPA over central India, 75% of its LPA over east & northeast India and 124% of its LPA over south peninsula.

Table 2 gives the list of stations which received very heavy (115.6 to 204.4 mm) or extremely heavy (≥ 204.5 mm) rainfall in 24 hours during the month. Fig. 7 depicts stations which received heavy (64.5 to 115.5 mm), very heavy (115.6 to 204.4 mm) or extremely heavy (≥ 204.5 mm) rainfall.

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

STATION	24 HOUR RECORD RAINFALL IN SEPTEMBER 2023(mm)#	DATE	PREVIOUS RAINFALL RECORD(mm)	DATE (DD-MM-YYYY)	STATE
SABOUR	187.0	22	162.5	28-09-1995	Bihar
SUPAUL	217.4	24	167	27-09-1975	Bihar
MALANJKHAND	166.6	15	140.3	11-09-1992	Madhya Pradesh
DHAR - AWS	301.3	17	161.4	08-09-2010	Madhya Pradesh
MANDVI	64.0	7	61	14-09-1961	Gujarat
BILASPUR	135.6	15	83.8	19-09-2008	Chhattisgarh
DURG	170.4	23	130.4	15-09-1983	Chhattisgarh
RAJNANDGAON	110.0	15	103	05-09-1994	Chhattisgarh

#Based on real time available data

Standardized Precipitation Index:

The Standardized Precipitation Index (SPI) is an index used for monitoring 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. Fig 8 (a, b, and c) gives the SPI values for the month of September 2023, June - September 2023 (4 months cumulative) and January 2023 - September 2023 (9 months cumulative) respectively.

During September, extremely wet/severely wet conditions were observed over parts of Andaman & Nicobar Islands, Nagaland, Manipur, Mizoram & Tripura, Odisha, Jammu & Kashmir & Ladakh, East Rajasthan, Madhya Pradesh state, Gujarat Region, Chhattisgarh, Telangana, Rayalaseema and Tamil Nadu & Karaikal while, extremely dry/severely dry conditions were observed over parts of Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Sub Himalayan West Bengal & Sikkim, Bihar, Jammu & Kashmir & Ladakh and South Interior Karnataka.

Cumulative past four months SPI values indicate, extremely wet/severely wet conditions over parts of Andaman & Nicobar Islands, Nagaland, Manipur, Mizoram & Tripura, West Uttar Pradesh, Uttarakhand, Haryana, Chandigarh & Delhi, Himachal Pradesh, West Madhya Pradesh, Saurashtra & Kutch, Chhattisgarh and Tamil Nadu & Karaikal while, extremely dry/severely dry conditions were observed over parts of Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram &

Tripura, Gangetic West Bengal, Jharkhand, Bihar, Uttar Pradesh state, Madhya Maharashtra, Chhattisgarh, South Interior Karnataka and Kerala & Mahe.

Cumulative SPI values of the nine months indicate, extremely wet/severely wet conditions over parts of Andaman & Nicobar Islands, Uttar Pradesh state, Uttarakhand, Haryana, Chandigarh & Delhi, Himachal Pradesh, Rajasthan state, West Madhya Pradesh, Saurashtra & Kutch, Chhattisgarh, Andhra Pradesh state, Telangana, and Tamil Nadu & Karaikal while, extremely dry/severely dry conditions were observed over parts of Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Gangetic West Bengal, Jharkhand, Bihar, East Uttar Pradesh, Madhya Maharashtra, Chhattisgarh, Coastal Karnataka, South Interior Karnataka and Kerala & Mahe.

Pressure & Wind:

Figs. 9(a) and 9(b) show the mean sea level pressure & its anomaly respectively. The pressure anomaly was negative over most parts of the country. It was less than -1.5 hPa over most parts of the country, except some northern parts and extreme south peninsular parts.

Figs. 10(a) and 10(b), 11(a) and 11(b) and 12(a) and 12(b) shows the mean circulation pattern and its anomaly at 850, 500 & 250 hPa levels respectively. At 850 hPa level, an anomalous anticyclonic circulation was observed over southeast Arabian Sea. At 500 hPa level, an anomalous anticyclonic circulation was observed over southeast Arabian Sea and an anomalous cyclonic circulation was observed over Bay of Bengal. At 250 hPa level, an anomalous anticyclonic circulation was observed over Afghanistan, Pakistan and adjoining north India.

Velocity Potential & Stream Function:

Figs. 13(a) and 13(b) show the 250 hPa mean Velocity Potential & its anomaly for the month of June 2023. Similarly, Figs. 14(a) and 14(b) show the mean stream function & its anomaly at 850 hPa level. Anomaly in the velocity potential at 250 hPa level was negative throughout the country and anomaly in the stream function at 850 hPa level was positive over most parts of the country, except some parts of central India.

Outgoing Longwave Radiation (OLR):

OLR anomaly (W/m^2) over the Indian region and neighbourhood is shown in Fig 15. OLR anomaly was negative over most parts except extreme northeastern, extreme northwestern and some parts of northwest Bay. Negative OLR anomaly less than $-20 W/m^2$ was observed over parts of south peninsula and adjoining Bay and Arabian Sea and northern India.

Temperature:

Mean monthly maximum and minimum temperature anomaly is shown in Figs. 16(a) and 16(b) respectively. Maximum temperature was above normal over most parts of the country, except some parts of east India, southern northwest India, central India and south peninsular India. Maximum temperature anomaly was more than $3^\circ C$ over parts of Himachal Pradesh, Uttarakhand, Arunachal Pradesh, Assam & Meghalaya and Nagaland. Maximum temperature anomaly was less than $-1^\circ C$ over parts of East Madhya Pradesh, Vidarbha and Telangana.

Minimum temperature was above normal over most parts of the country, except some parts of central India, some parts of West Rajasthan, West Uttar Pradesh and South Peninsular India. Minimum temperature anomaly was more than $3^\circ C$ over parts Gangatic West Bengal, Bihar, Himachal Pradesh and South Interior Karnataka. Minimum temperature anomaly was less than $-1^\circ C$ over parts of East Madhya Pradesh, Madhya Maharashtra and Marathwada.

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

Highest Maximum				
STATION NAME	NEW RECORD (°C)[#] (September 2023)	DATE	PREVIOUS RECORD (°C)	DD/MM/YYYY
AMS SHIMLA	29.2	7	27.5	29-09-2009
ANANTHAPUR	38.2 @	1	38.2	04-09-2015
BHAGALPUR	38.6 @	17	38.6	24-09-1982
CHANDBALI	37.7 @	1	37.7	10-09-1968
CHERRAPUNJI	31.6	5	31.1	06-09-1969
DHARMASALA EMO	31 @	6,7	31	20-09-2022
DIU	37	30	36.8	30-09-2001
FURSATGANJ	38	2,3	37.8	05-09-2015
GOALPARA	38.2	5	37.1	22-09-1967
GULBARGA	37.4 @	1	37.4	05-09-2015
GUWAHATI / BORJHAR(A)	38.2	4	37.8	28-09-2009
JAGDALPUR	34.4	1	34.2	09-09-2006
JAISELMER	43.5	9	43.3	10-09-1949
JAMSHEDPUR(A)	37	2	36.5	18-09-2020
KAILASHAHAR AERO	38	5	37.2	18-09-2015
KANNUR (CANNANORE)	34.7	1	34.2	26-09-2015
KARWAR	34.4	2	34	25-09-2015
KUKERNAG	32	12	31.2	07-09-2005
LENGPUI	35.7 @	5	35.7	20-09-2018
LUMDING	40	4	37.2	01-09-1951
MAJBAT	37.4 @	5	37.4	12-09-1985
MUKTESWAR (KUMAUN)	27.1	2	26.8	03-09-1968
NAJIBABAD	37.5	7	36.9	01-09-2011
NARSAPUR	37	27	35.6	30-09-2010
PALAKKAD (PALGHAT)	35.9 @	1	35.9	25-09-2015
PENDRA ROAD	35.2	2	34.6	03-09-1996
QUAZI GUND	33.2	12	32.8	13-09-2019
RAJNANDGAON	36	1,2	35.4	02-09-1992
SEISMO RIDGE	38.8	7	38.5	06-09-2022
SHIRALI	34.5	8	34.3	30-09-2019
SILCHAR	39.4	4	39.2	02-09-2005
SOLAPUR	38	1	37.8	06-09-2015
SUNDERNAGAR	34.4 @	6	34.4	12-09-2015
WASHIM	36.2	26	35.7	28-09-2009

Based on Real Time available data

@ Equals previous record

Percentage of Warm Days / Cold Nights:

Fig. 17(a) and 17(b) show the percentage of days when maximum (minimum) temperature was more (less) than 90th (10th) percentile. Over parts of Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Sub Himalayan West Bengal & Sikkim, Bihar, Uttarakhand, West Uttar Pradesh, Jammu & Kashmir & Ladakh, Saurashtra & Kutch and South Interior Karnataka

maximum temperature was greater than 90th percentile for more than 50 % of the days of the month. Over parts of Madhya Maharashtra, West Madhya Pradesh and North Interior Karnataka minimum temperature was less than 10th percentile for more than 50% of the days of the month.

Fig.18 shows the mean temperature time series for the country as a whole for September 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 28.22°C with an anomaly of 0.91°C and highest since 1901. Over Northwest India the mean temperature was highest (27.82°C with an anomaly of 1.45°C) and East & Northeast India the mean temperature was also highest (29.27°C with an anomaly of 1.80°C) since 1901. Over Central India the mean temperature was 7th highest (28.11°C with an anomaly of 0.55°C) since 1901. Over South Peninsular India the mean temperature was 9th highest (28.06°C with an anomaly of 0.37°C) since 1901.

Fig. 19(a) and 19(b) show, the maximum and minimum temperature series respectively for the country as a whole and the four homogeneous regions during September since 1971. Both the maximum and minimum temperature were above normal over all the homogeneous regions. Among the four homogeneous regions, over Northwest India the maximum temperature was 3rd highest (32.99°C with an anomaly of 1.23°C) after the years 1968(33.55°C), 1987(33.02°C) and the minimum temperature was 2nd highest (22.65°C with an anomaly of 1.66°C) after the year 2021(22.66°C) since 1901. Over East & Northeast India the maximum temperature was highest (33.42°C with an anomaly of 2.25°C) and minimum temperature was also highest (25.12°C with an anomaly of 1.34°C) since 1901. Over Central India the minimum temperature was 2nd highest (24.44°C with an anomaly of 0.73°C) after the year 2020(24.70°C) since 1901. Over South Peninsular India the minimum temperature was 6th highest (24.65°C with an anomaly of 0.47°C) since 1901.

Over the country as a whole the maximum temperature was 2nd highest (32.22°C with an anomaly of 0.86°C) after the year 2015(32.39°C) and the minimum temperature was highest (24.22°C with an anomaly of 0.96°C) since 1901. Table 3 shows temperature anomalies for the month over all India and all the four homogeneous regions.

Fig 20(a) and 20(b) shows daily variation of maximum and minimum temperature anomaly over the country and four homogeneous regions during September 2023. Maximum temperature was above normal by equal or more than 5^oC over some stations of east & northeast India for many days during the month. The following table gives the list of stations and number of days (frequency) for which the maximum temperature was above normal by equal or more than 5^oC (compared to 1981-2010 normal) for more than five days during the month.

MAXIMUM TEMPERATURE	
STATION	FREQUENCY
DIBRUGARH	10
GUWAHATI	8
PASIGHAT	12
TEZPUR	8
BAGHDOGRA	14
DARJEELING	7

Low Pressure Systems:

During September 2023, 5 Low Pressure Systems (LPS) formed, four over Bay of Bengal and one over Arabian Sea. The LPS over Arabian Sea intensified into Depression (30 Sep. – 1 Oct.). Out of the remaining four LPS over Bay of Bengal, two intensified into Well Marked Low Pressure System (13 - 18 Sep. and 29 Sep. - 2 Oct). The other two LPS formed during 5 – 6 Sep. and 19 – 22 Sep. These systems resulted in good rainfall activity over most parts of the country. Track of the system is given in the following table.

Date/time	Intensity	(Long.° E/Lat. °N)	Area	Past Movement
		72/15		
30/9,03Z	D	72.8/15.9	eastcentral Arabian sea	east-northeastward
30/9,12Z	D	73.2/16.6	eastcentral Arabian sea	east-northeastward
1/10,00Z	D	74/17	south Konkan	Northeastward
	WML	75/18		

D: Depression, WML: Well marked Low

Fig. 21 shows track of the system.

SST anomaly over the Indian & Pacific Ocean:

Fig. 22 shows the anomaly in sea surface temperature over the tropical Indian and Pacific Oceans. Positive SSTs were observed over most of the equatorial Pacific Ocean. Positive SST anomalies were observed over the Arabian Sea and western equatorial Indian Ocean.

SOI and Pacific SST Index:

SOI (Table 4) was negative (-2.1) during the month. Sea surface temperature anomalies were above normal by about 1°C over all the NINO regions.

Fig. 23 shows the Monsoon Mission Coupled Forecast System (MMCFS) model output forecast for ENSO conditions for the coming seasons. Currently, Moderate El Niño conditions are prevailing over equatorial Pacific and the sea surface temperatures (SSTs) are above average over most of the equatorial Pacific Ocean. The latest MMCFS forecast indicates moderate to strong El Niño conditions are likely to continue during the upcoming season.

Significant Weather events during September 2023:

Fig. 24 shows significant weather events during the month of September 2023 (based on real time media reports). During September, total 89 persons reportedly claimed dead, more than 50 persons injured & more than 95 livestock perished due to various weather events. The details of casualties given below, which are based on real time media reports.

Lightning: Total 70 persons reportedly claimed dead & 50 persons injured & more than 75 livestock perished, during September, because of Lightning. 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
8, 10, 11, 15, 17 Sep.	18	13			Barabanki, Deoria, Ghaziabad, Jalaun, Kushinagar, Mirzapur, Pilibhit, Pratapgarh (Uttar Pradesh)
1, 2, 26 Sep.	15	24		8	Angul, Bolangir, Boudh, Cuttack, Dhenkanal, Gajapati, Ganjam, Jagatsinghpur, Kalahandi, Kandhamal, Khordha, Puri (Odisha)

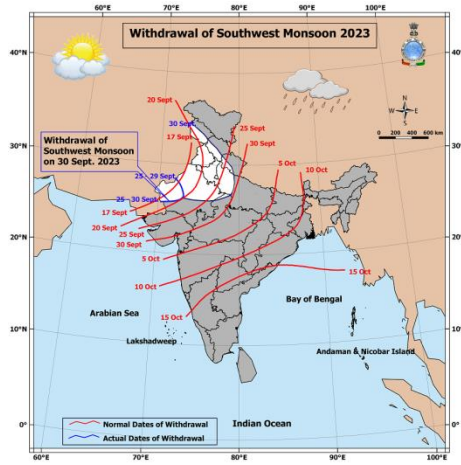
DATE	DEATH	INJURED	MISSING	LIVESTOCK	DISTRICT (STATE/UT) AFFECTED
18 Sep.	13	4			Aurangabad, Gaya, Kaimur, Rohtas, West Champaran (Bihar)
2, 3, 4, 20, 21, 24, 26 Sep.	10	1		8	Akola, Amravati, Chandrapur, Gadchiroli, Jalgaon, Nanded, Yavatmal (Maharashtra)
3, 5 Sep.	4	4			Jayashankar Bhoopalpally, Medak (Telangana)
23 Sep.	2	3			Dumka (Jharkhand)
15 Sep.	2	1		60	Kangra (Himachal Pradesh)
19 Sep.	2				Bilaspur (Chhattisgarh)
8 Sep.	2				Banaskantha (Gujarat)
17 Sep.	1				Udhampur (Jammu & Kashmir)
2 Sep.	1				Kolkata (West Bengal)

Heavy Rains, Floods & Landslide: Total 19 persons reportedly claimed dead, 2 persons injured & more than 20 livestock perished during September, because of heavy rains, floods & Landslide. The details of the area effected by the events are summarized and given in the table below;

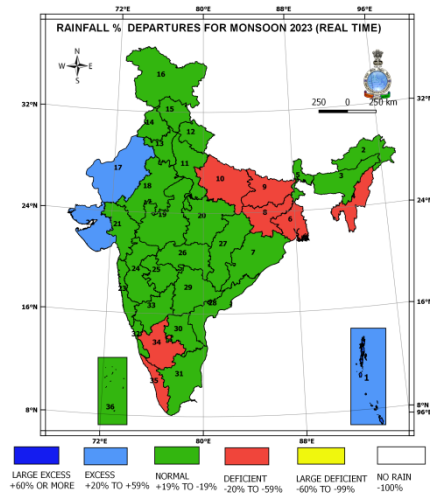
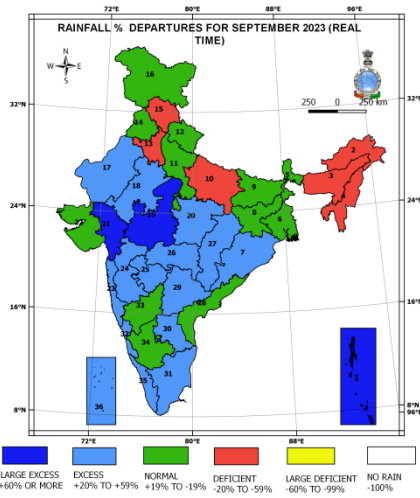
DATE	DEATH	INJURED	MISSING	LIVESTOCK	DISTRICT (STATE/UT) AFFECTED
9, 23, 26 Sep.	6			14	Chandrapur, Nagpur, Yavatmal (Maharashtra)
10 & 11 Sep.	5	1			Deoria, Hardoi, Kannauj, Muzaffarnagar (Uttar Pradesh)
12 Sep.	4			6	Ramban (Jammu & Kashmir)
8 Sep.	2				Anand (Gujarat)
10 Sep.	1	1			Serchhip (Mizoram)
1, 2 Sep.	1			3	Darrang (Assam)

While,

- Barpeta, Biswanath, Chirang, Dhemaji, Dhubri, Dibrugarh, Goalpara, Golaghat, Jorhat, Kamrup, Kamrup (M), Lakhimpur, Morigaon, Nagaon, Nalbari, Sivasagar, Sonitpur districts of Assam also affected on 1 & 2 September.
- Bharuch, Dahod, Gandhinagar, Narmada, Panchmahal, Vadodara districts of Gujarat affected on 17 & 18 September.
- Amethi, Barabanki, Budaun, Jalaun, Kanpur, Mirzapur, Prayagraj, Pratapgarh, Rampur, Sambhal, Sitapur, Sultanpur, Unnao districts of Uttar Pradesh affected on 10 & 11 September.
- North & Middle Andaman district of Andaman & Nicobar, Begusarai, Katihar, Madhepura, Samastipur, Supaul districts of Bihar; Aravalli, Chhota Udaipur, Junagadh, Mahisagar, Panchmahal, Sabarkantha districts of Gujarat; Alirajpur, Balaghat, Betul, Dewas, Dhar, Hoshangabad Narmadapuram, Indore, Jhabua, Khandwa (East Nimar), Khargone (West Nimar), Ratlam, Seoni, Ujjain districts of Madhya Pradesh, Ratnagiri district of Maharashtra, Balangir, Koraput, Rayagada district of Odisha, Banswara, Dholpur, Dungarpur districts of Rajasthan, Bahraich, Barabanki, Bareilly, Moradabad, Rampur, Sambhal / Bhimnagar districts of Uttar Pradesh, Malda, Uttar Dinajpur districts of West Bengal also affected due to Extremely Heavy Rains.

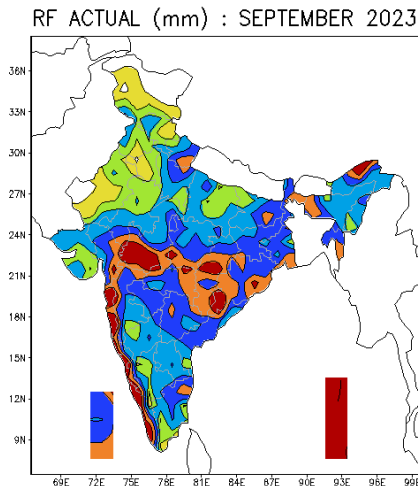


आकृती १: सितम्बर २०२३ के दौरान दक्षिण-पश्चिम मॉनसून का आगमन और प्रगति
FIG. 1: WITHDRAWAL OF SOUTHWEST MONSOON

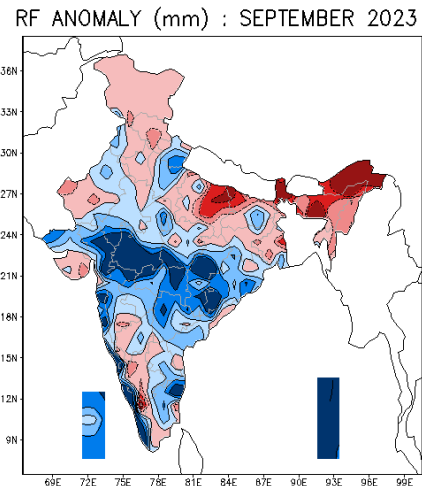


आकृती २(ए): सितम्बर २०२३ के लिए वर्षा प्रतिशत विचलन
FIG. 2(a) : SUBDIVISIONWISE RAINFALL PERCENTAGE DEPARTURE SEPTEMBER 2023

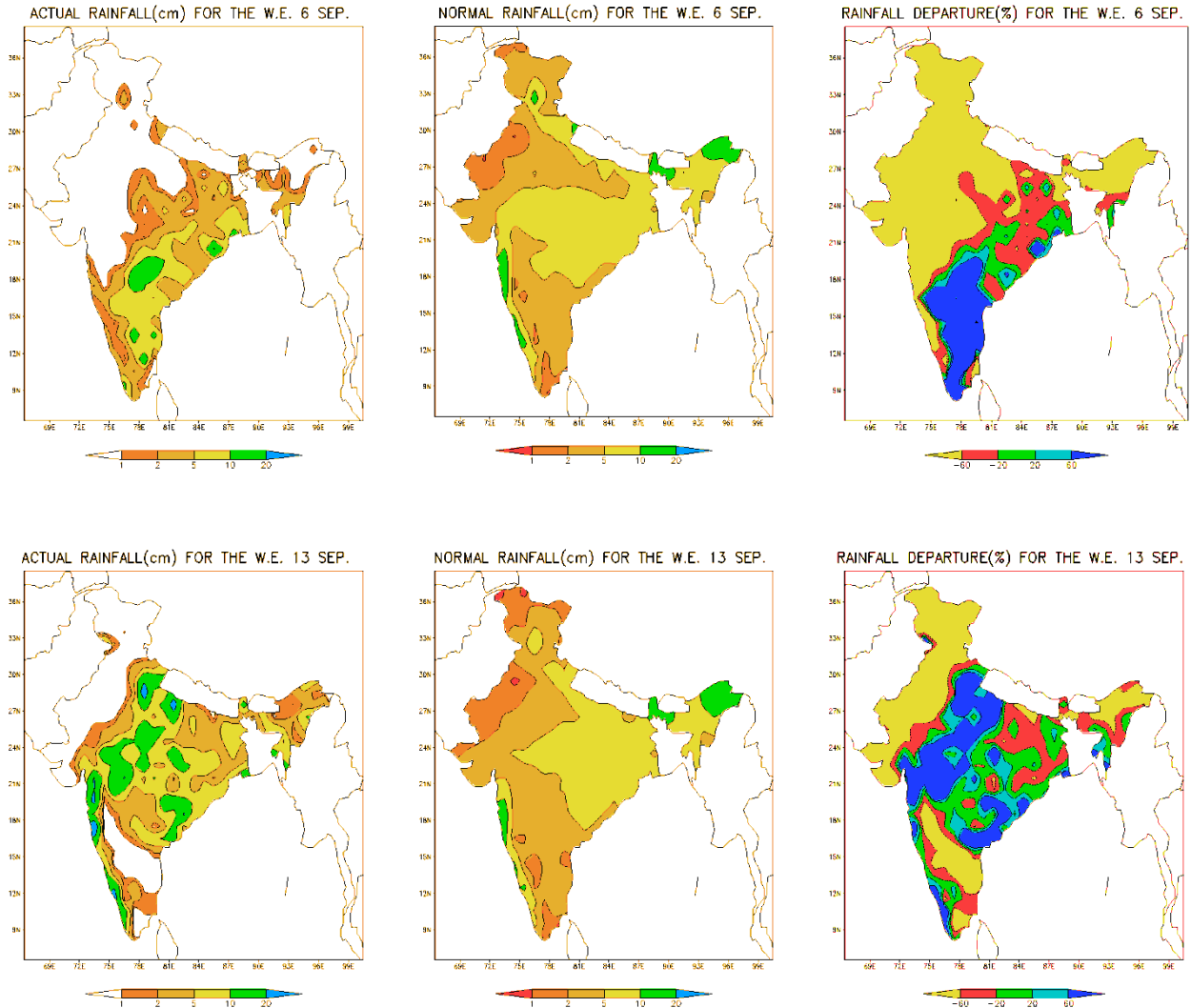
आकृती २(बी): मानसून २०२३ के लिए वर्षा प्रतिशत विचलन
FIG. 2(b) : SUBDIVISIONWISE RAINFALL PERCENTAGE DEPARTURE MONSOON 2023



आकृती ३(ए): मासिक वर्षा (मिमी)
FIG. 3(a): MONTHLY RAINFALL (mm)

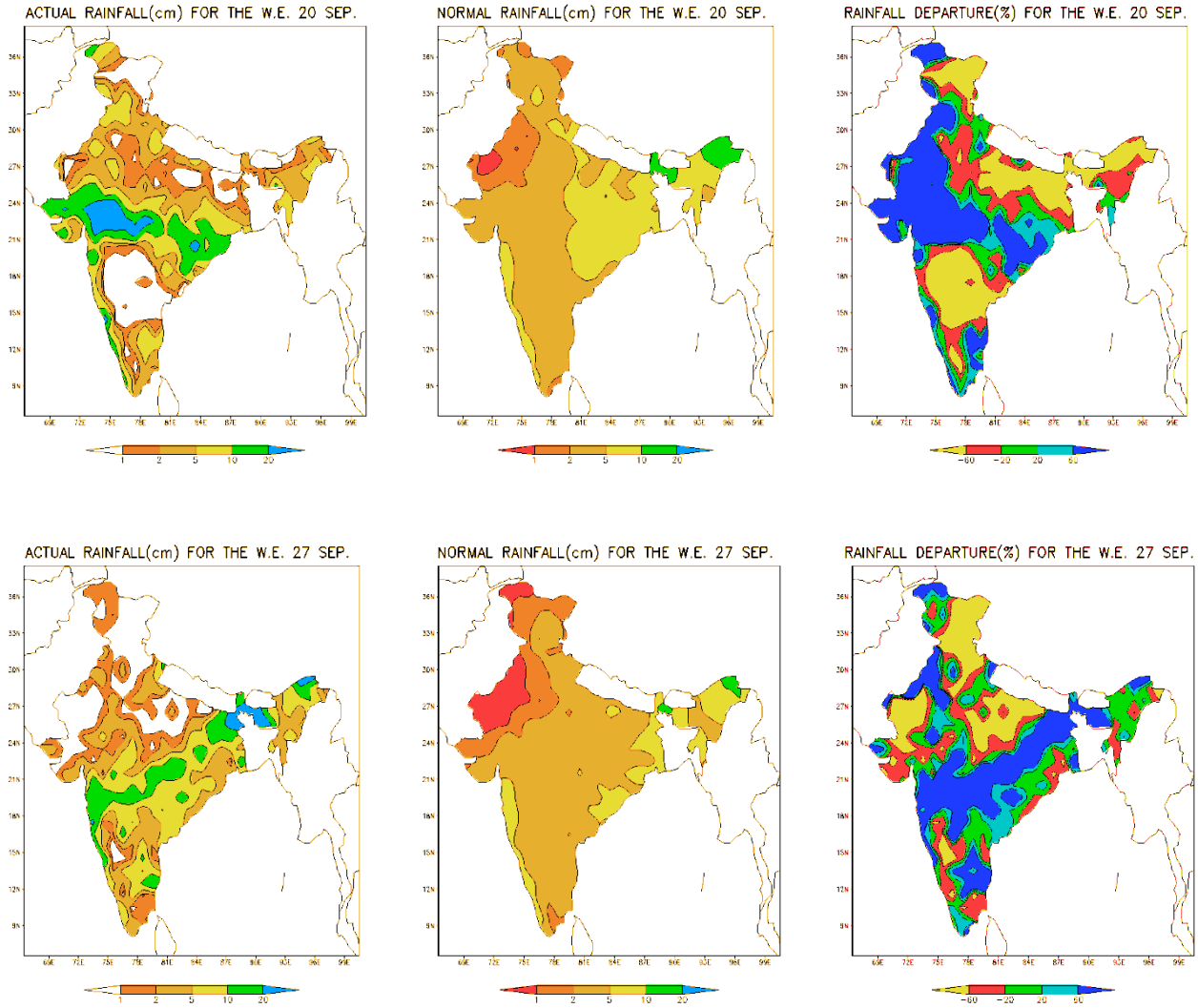


आकृती ३(बी): मासिक वर्षा विसंगति (मिमी)
FIG. 3(b): MONTHLY RAINFALL ANOMALY(mm)

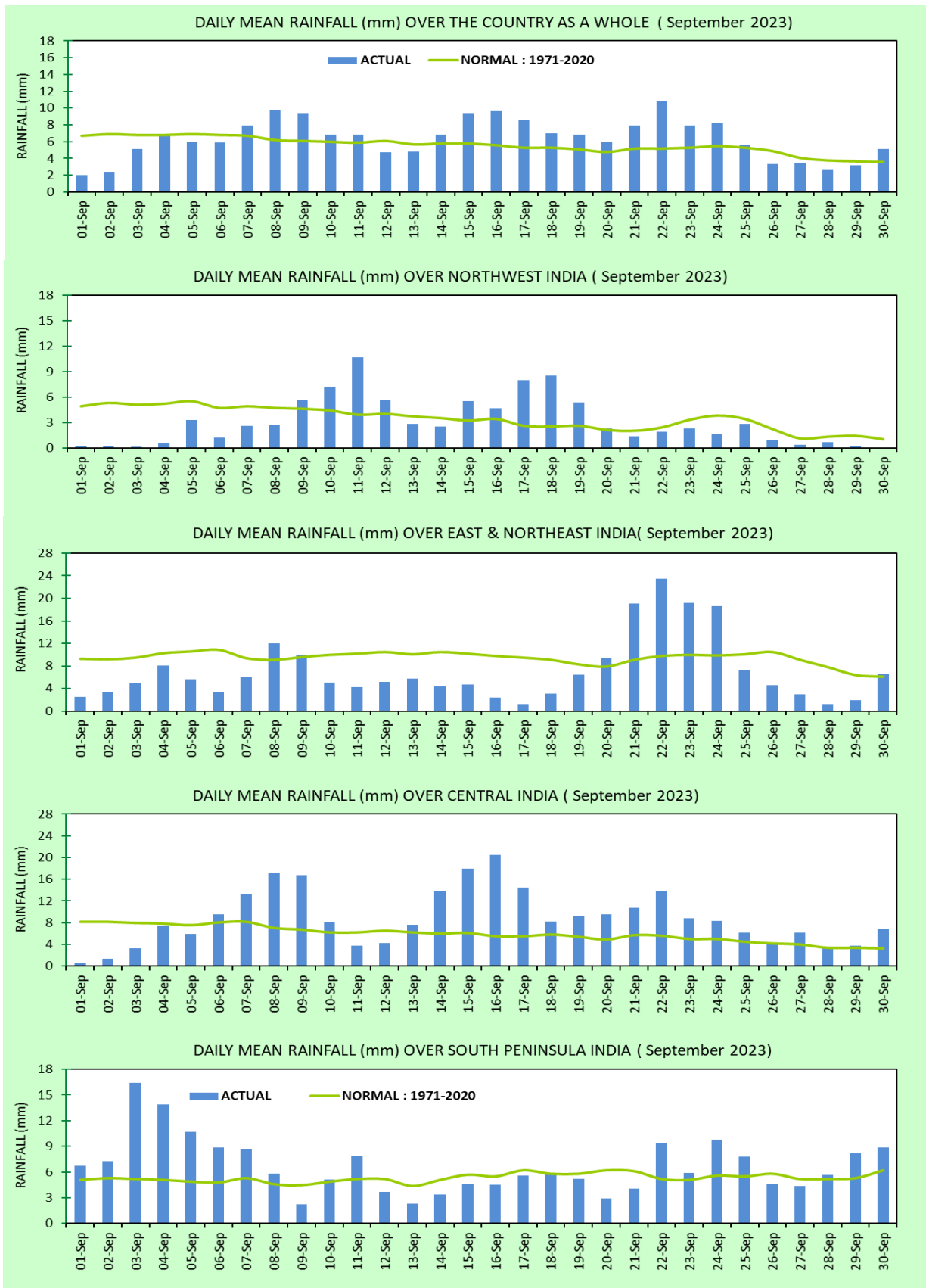


आकृती ४: सितम्बर २०२३ के महीने के दौरान वर्षा के वास्तविक (बाएं), लंबी अवधि के औसत (मध्य) और प्रतिशत विचलन (दाएं) सप्ताह के अनुसार (एलपीए १९७१-२०२० की अवधि के आंकड़ों पर आधारित है)
FIG. 4: WEEK WISE ACTUAL (LEFT), LONG PERIOD AVERAGE (CENTRE) AND PERCENTAGE DEPARTURE (RIGHT) OF RAINFALL DURING THE MONTH OF SEPTEMBER 2023 (LPA IS BASED ON THE DATA FOR THE PERIOD 1971-2020)

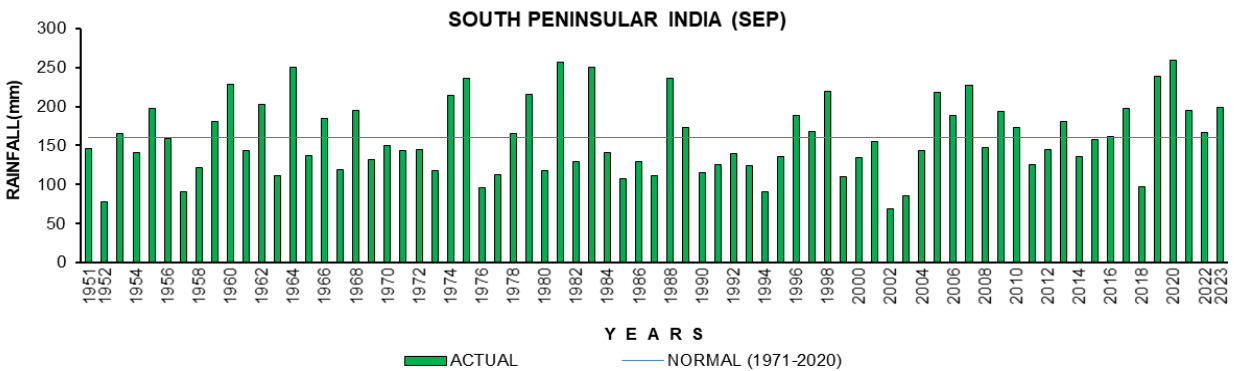
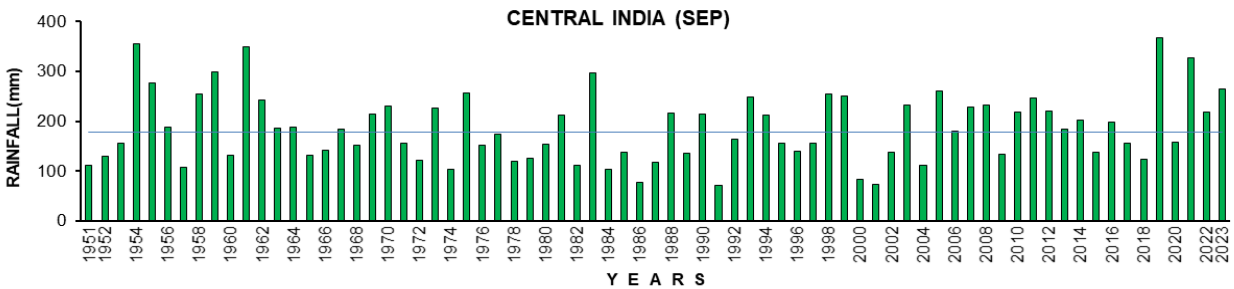
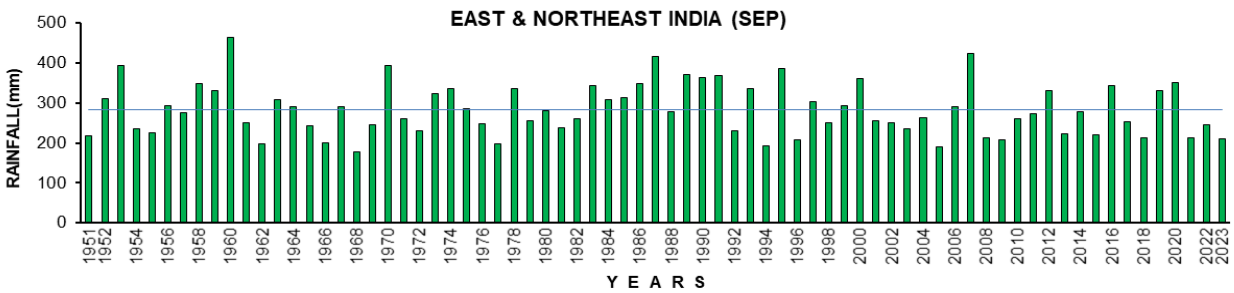
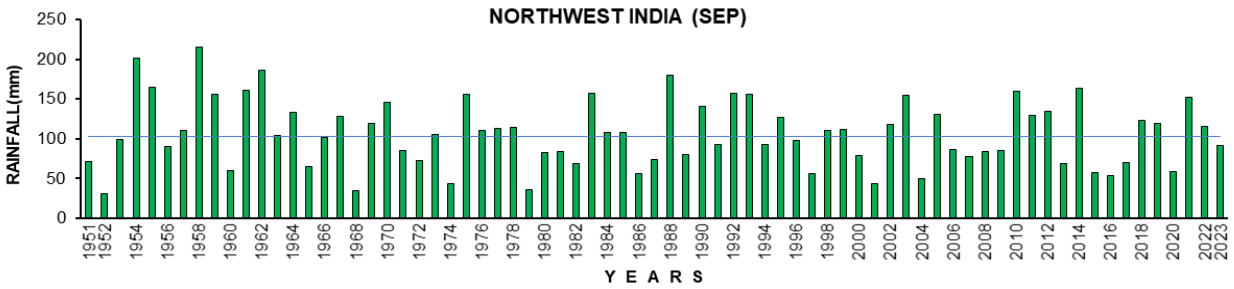
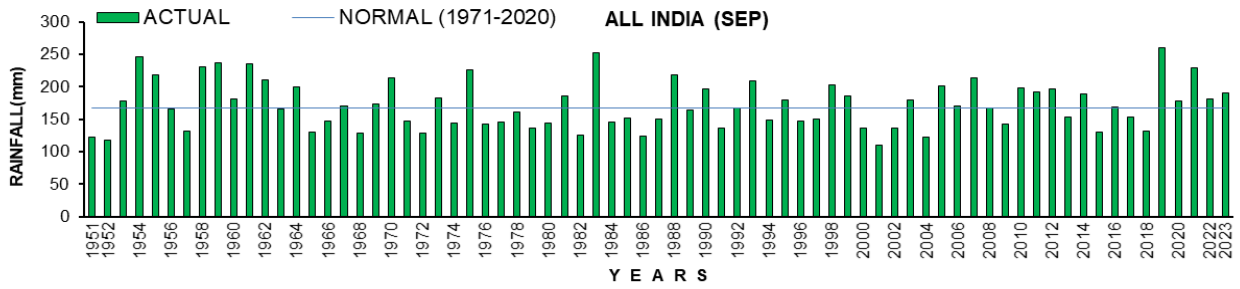
FIG. 4: Contd...



आकृती ४ : सितम्बर २०२३ के महीने के दौरान वर्षा के वास्तविक (बाएं), लंबी अवधि के औसत (मध्य) और प्रतिशत विचलन (दाएं) सप्ताह के अनुसार (एलपीए १९७१-२०२० की अवधि के आंकड़ों पर आधारित है)
FIG. 4: WEEK WISE ACTUAL (LEFT) LONG PERIOD AVERAGE (CENTRE) AND PERCENTAGE DEPARTURE (RIGHT) OF RAINFALL DURING THE MONTH OF SEPTEMBER 2023 (LPA IS BASED ON THE DATA FOR THE PERIOD 1971-2020)

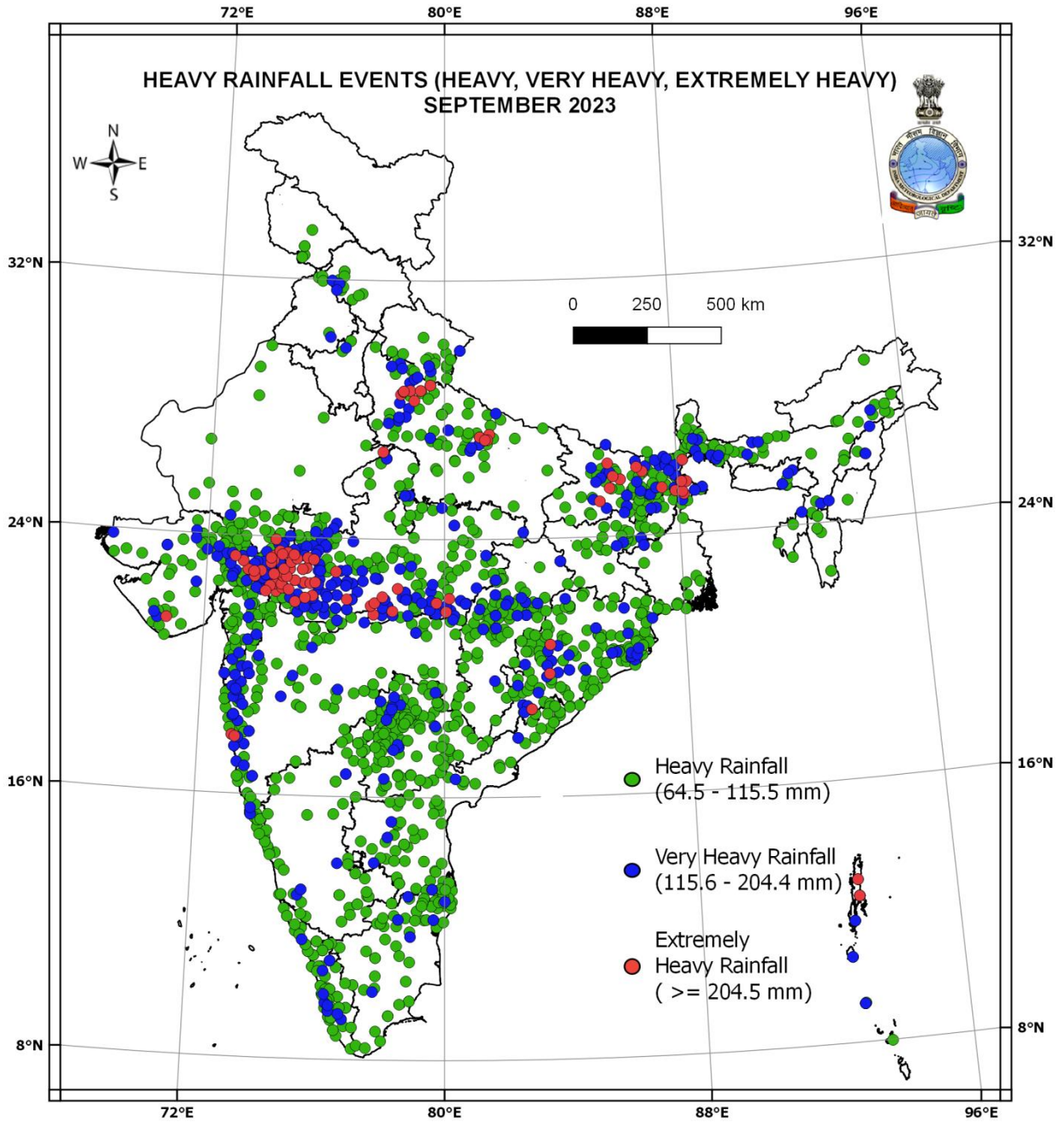


आकृती ५: सितम्बर २०२३ के दौरान अखिल भारतीय और चार सजातीय क्षेत्रों में वर्षा की दैनिक भिन्नता
 FIG. 5: DAILY VARIATION OF RAINFALL OVER ALL INDIA AND FOUR HOMOGENEOUS REGIONS DURING SEPTEMBER 2023



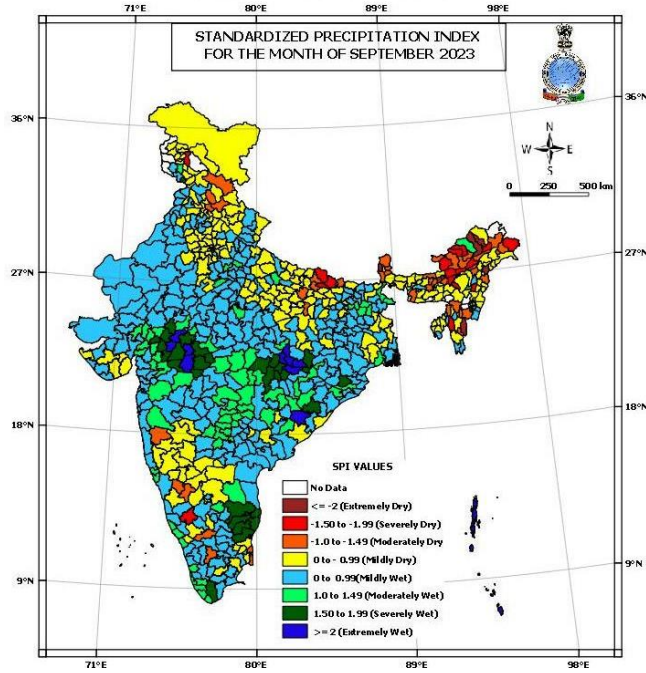
आकृती ६: १९५१-२०२३ की अवधि के दौरान सितम्बर माह के लिए पुरे भारत और चार समरूप क्षेत्रों में क्षेत्र भारित वर्षा की समय श्रृंखला

FIG. 6: TIME SERIES OF AREA WEIGHT AVERAGED RAINFALL OVER ALL INDIA AND FOUR HOMOGENEOUS REGIONS FOR SEPTEMBER (1951 - 2023)

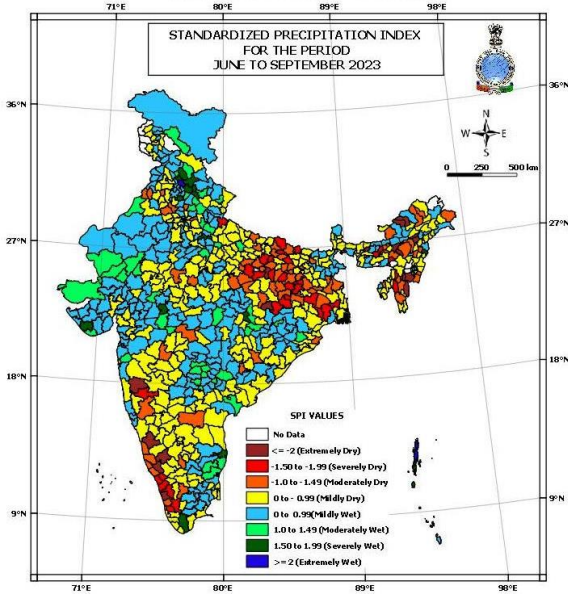


आकृती ७: सितम्बर २०२३ के दौरान भारी और बहुत भारी, अत्यधिक भारी वर्षा प्राप्त करने वाले स्टेशन
FIG. 7: STATIONS WHICH RECEIVED HEAVY, VERY HEAVY, AND EXTREMELY HEAVY RAINFALL DURING THE MONTH OF SEPTEMBER 2023

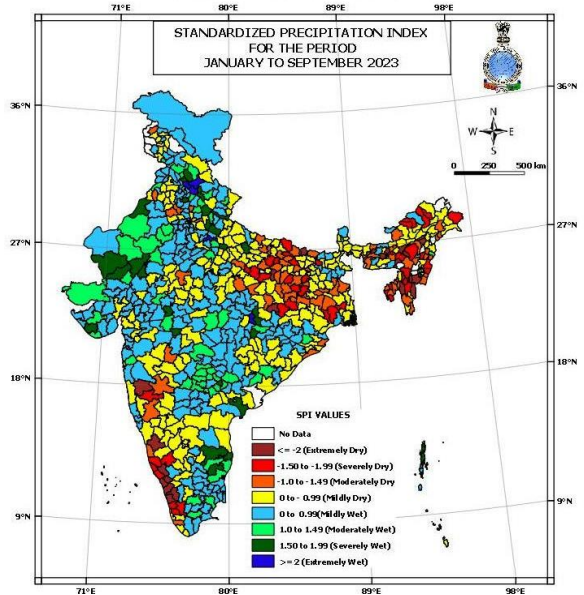
(a) SEPTEMBER - 2023



(b) JUNE – SEPTEMBER 2023



(c) JANUARY 2023 – SEPTEMBER 2023



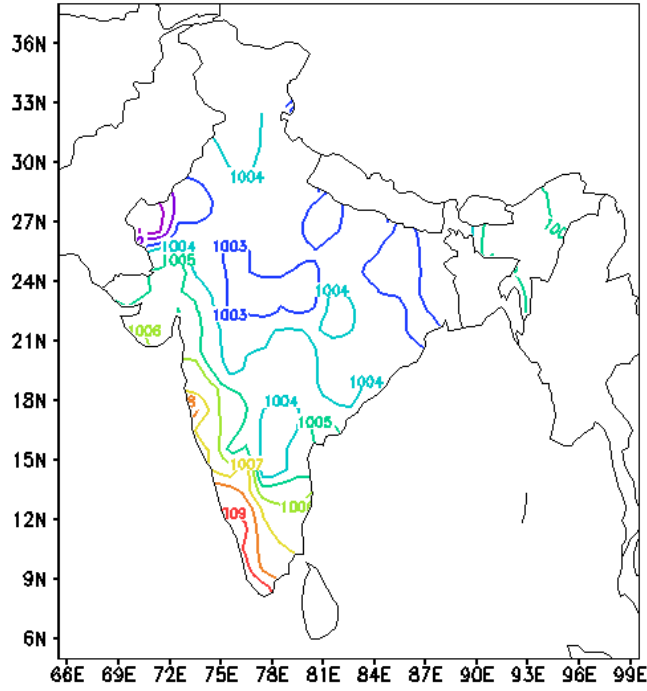
आकृती ८: मानकीकृत वर्षण सूचकांक (एसपीआई)

(ए) सितम्बर (एक महीना) (बी) जून से सितम्बर (चार महीने) (सी) जनवरी से सितम्बर (नों महीने)

FIG. 8: STANDARDIZED PRECIPITATION INDEX (SPI) FOR (a) SEPT. (1 MONTH) (b) JUNE TO SEPT. (4 MONTHS) (c) JAN. TO SEPT. (9 MONTHS)

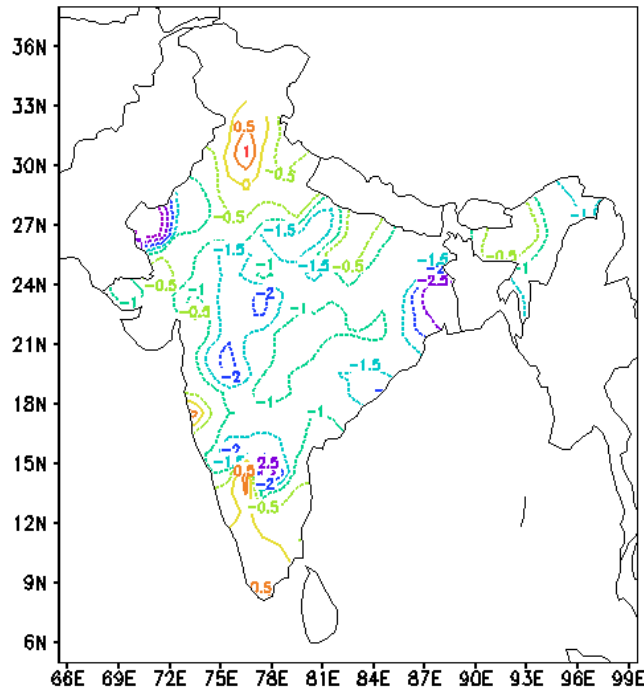
(a) MEAN SEA LEVEL PRESSURE (MSLP)

PRESSURE ACTUAL(hPa) SEPTEMBER 2023



(b) MSLP Anomaly

PRESSURE ANOM (hPa) SEPTEMBER 2023



आकृती ९: सितम्बर २०२३ के लिए मासिक औसत समुद्र स्तर दाब (एचपीए)

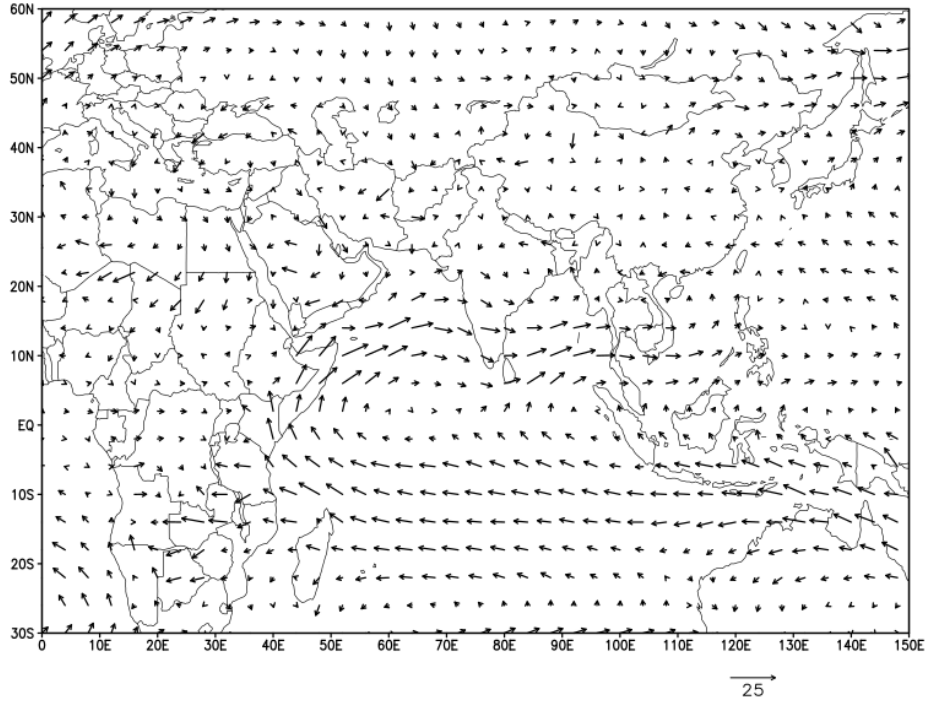
(ए) माध्य (बी) विसंगति (१९८१-२०१० सामान्य पर आधारित)

FIG. 9: MONTHLY MEAN SEA LEVEL PRESSURE (hPa) FOR SEPTEMBER 2023

(a) MEAN (b) ANOMALY
(BASED ON 1981 - 2010 NORMALS)

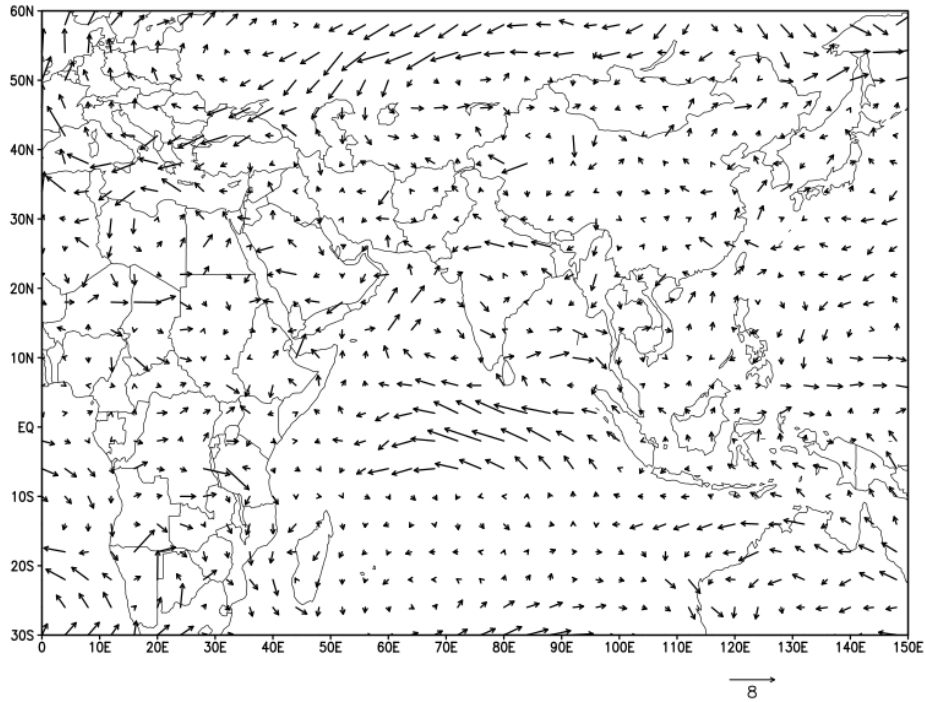
(a) MEAN WIND: 850 hPa

WIND Actual SEPTEMBER 2023 850 hPa



(b) WIND ANOMALY: 850 hPa

WIND Anom. SEPTEMBER 2023 850 hPa



आकृती १०: सितम्बर २०२३ के लिए मासिक पवन (मि /से)

(ए) माध्य (बी) विसंगति ८५० एचपीए स्तरपर

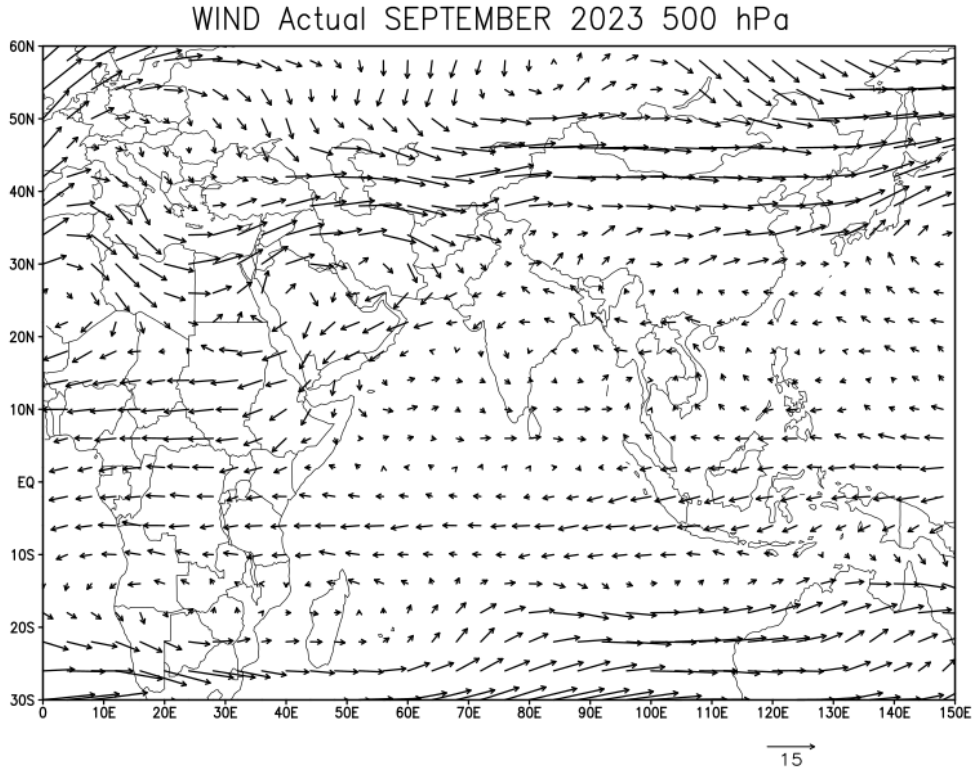
FIG. 10: MONTHLY WIND (m/s) FOR SEPTEMBER 2023

(a) MEAN (b) ANOMALY AT 850 hPa

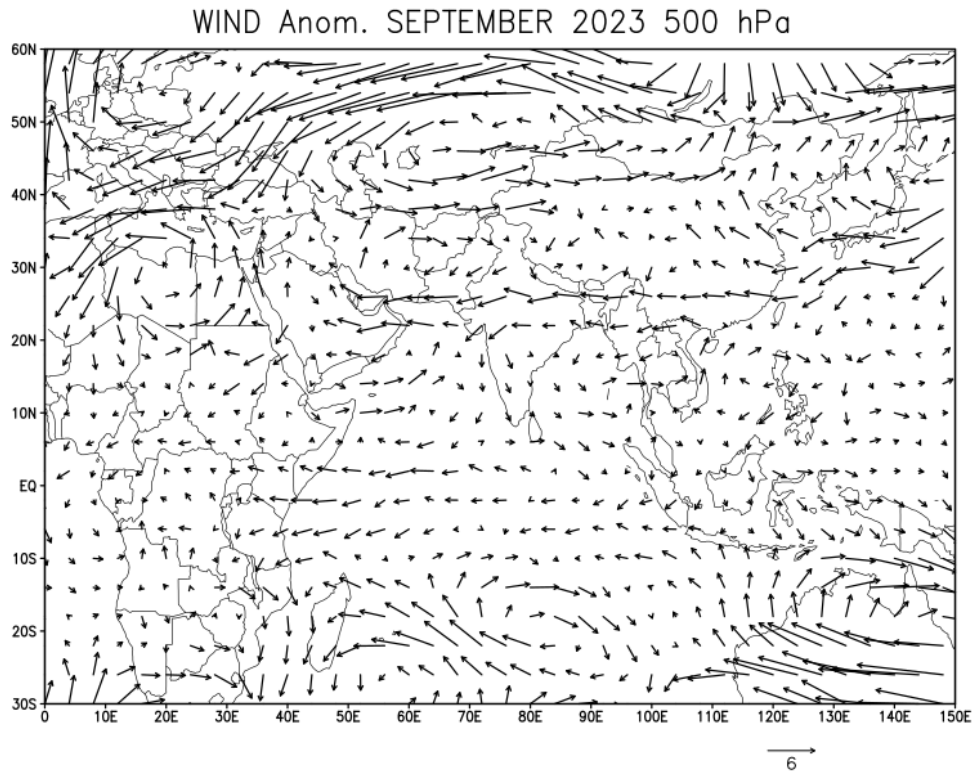
(OPERATIONAL NWP ANALYSIS OF IMD GFS T-574)

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

(a) MEAN WIND: 500 hPa



(b) WIND ANOMALY: 500 hPa



आकृती ११: सितम्बर २०२३ के लिए मासिक पवन (मि /से)

(ए) माध्य (बी) विसंगति ५०० एचपीए स्तरपर

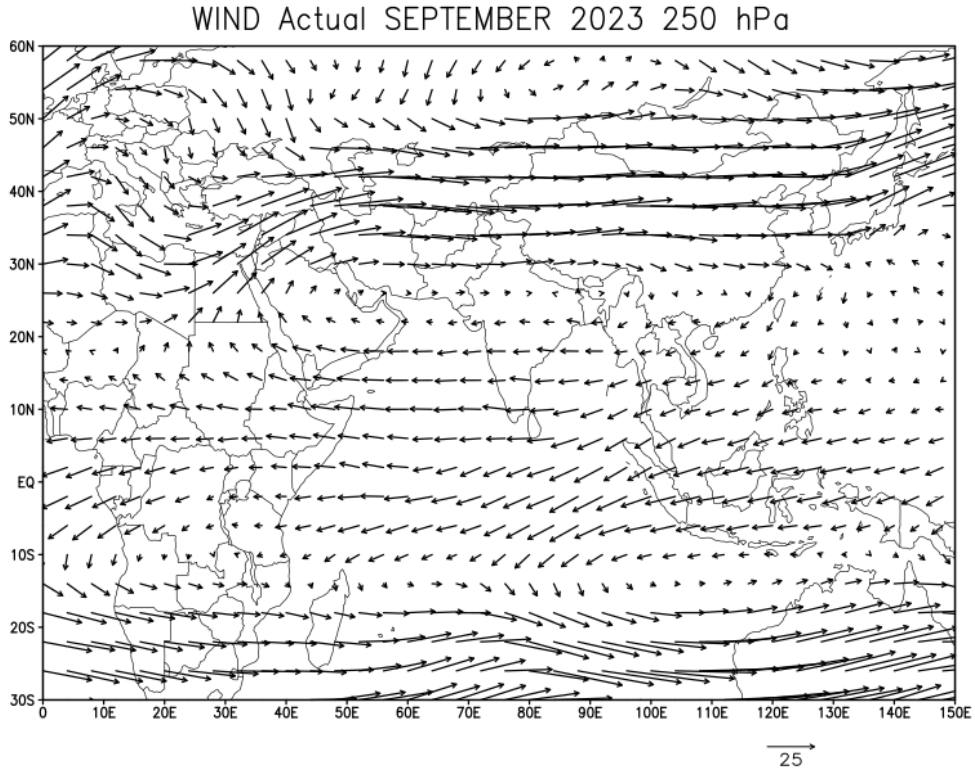
FIG. 11: MONTHLY WIND (m/s) FOR SEPTEMBER 2023

(a) MEAN (b) ANOMALY AT 500 hPa

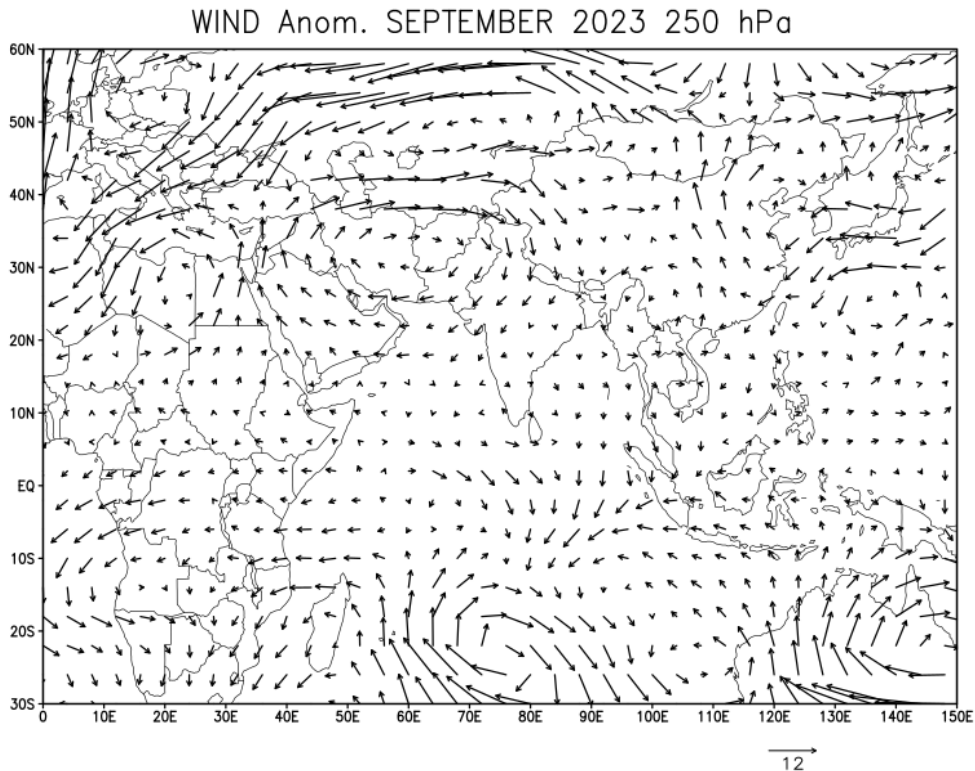
(OPERATIONAL NWP ANALYSIS OF IMD GFS T-574)

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

(a) MEAN WIND: 250 hPa



(b) WIND ANOMALY: 250 hPa



आकृती १२: सितम्बर २०२३ के लिए मासिक पवन (मि /से)

(ए) माध्य (बी) विसंगति २५० एचपीए स्तरपर

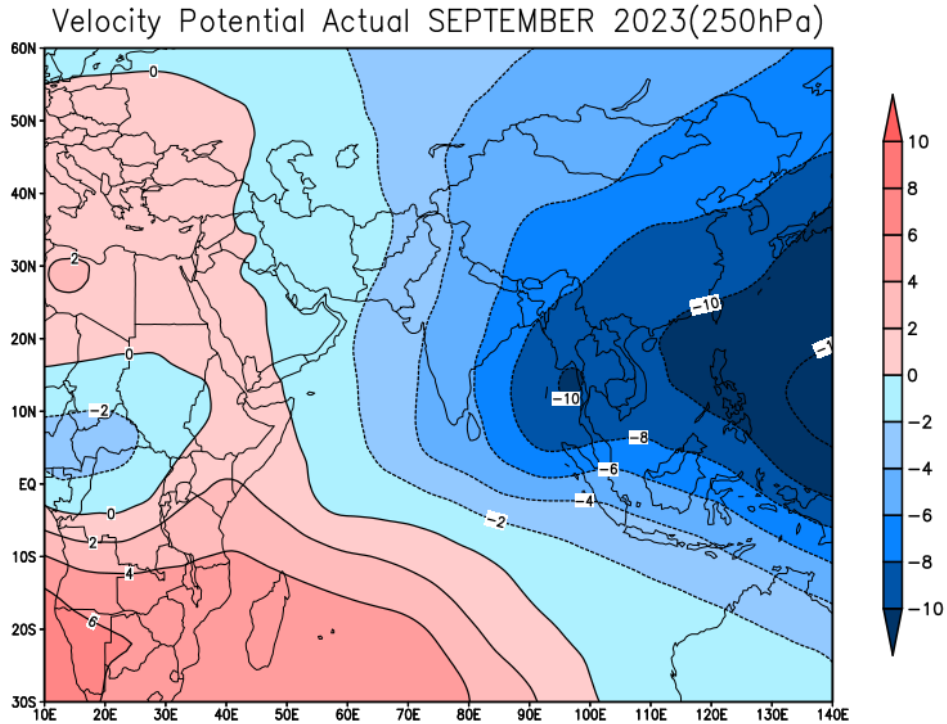
FIG. 12: MONTHLY WIND (m/s) FOR SEPTEMBER 2023

(a) MEAN (b) ANOMALY AT 250 hPa

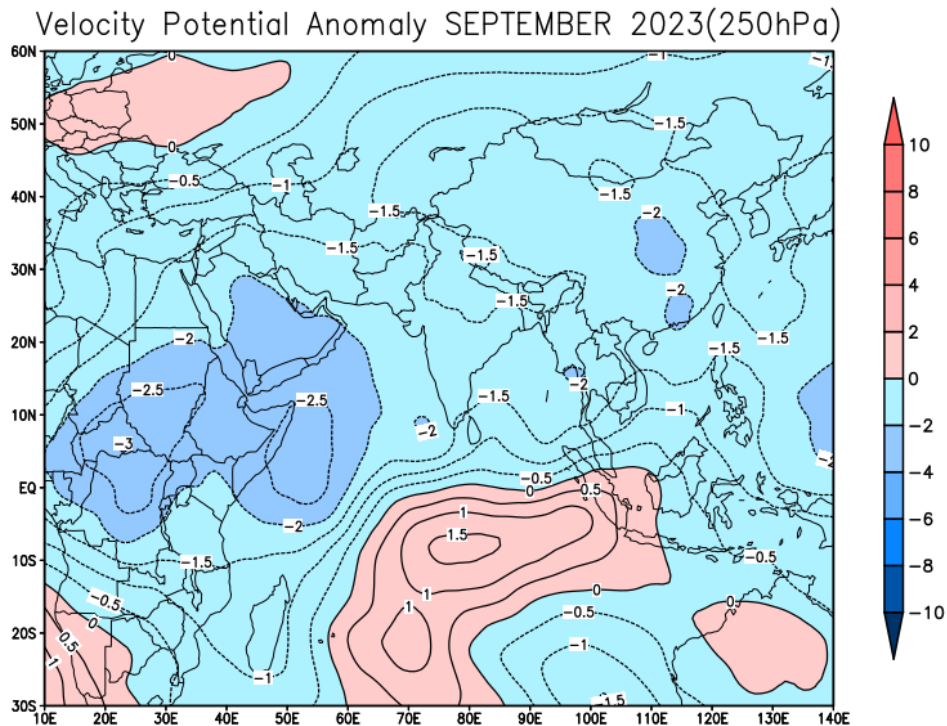
(OPERATIONAL NWP ANALYSIS OF IMD GFS T-574)

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

(a) VELOCITY POTENTIAL: 250 hPa



(b) VELOCITY POTENTIAL ANOMALY: 250 hPa



आकृती १३: सितम्बर २०२३ के लिए वेग विभव (10^6 मीटर²/सेकेंड)

(ए) माध्य (बी) विसंगति २५० एचपीए स्तरपर

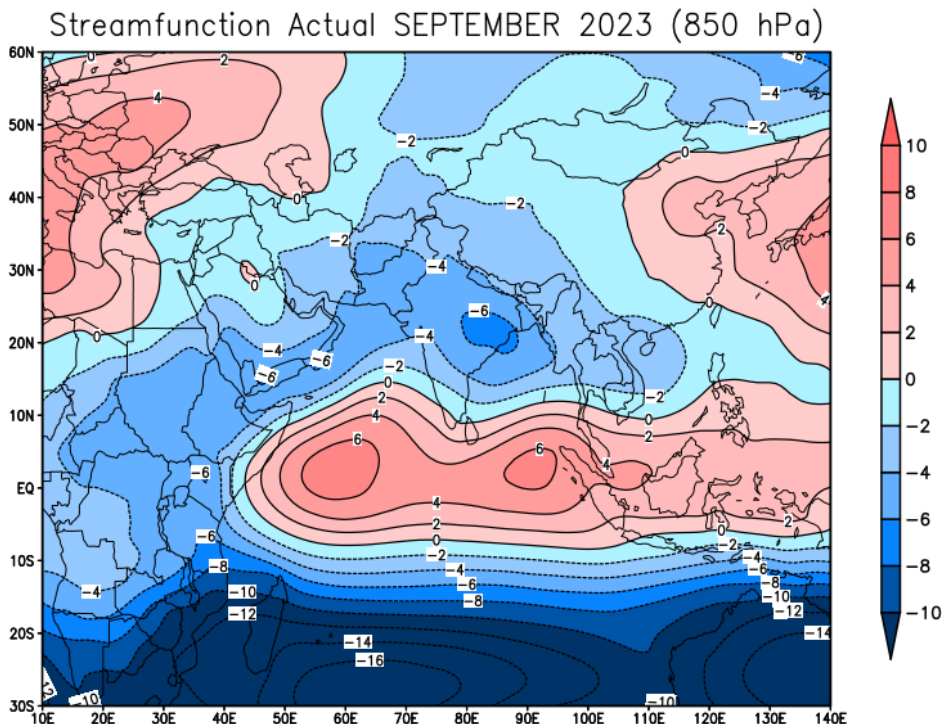
FIG. 13: VELOCITY POTENTIAL (10^6 m²/s) FOR SEPTEMBER 2023

(a) MEAN (b) ANOMALY AT 250 hPa

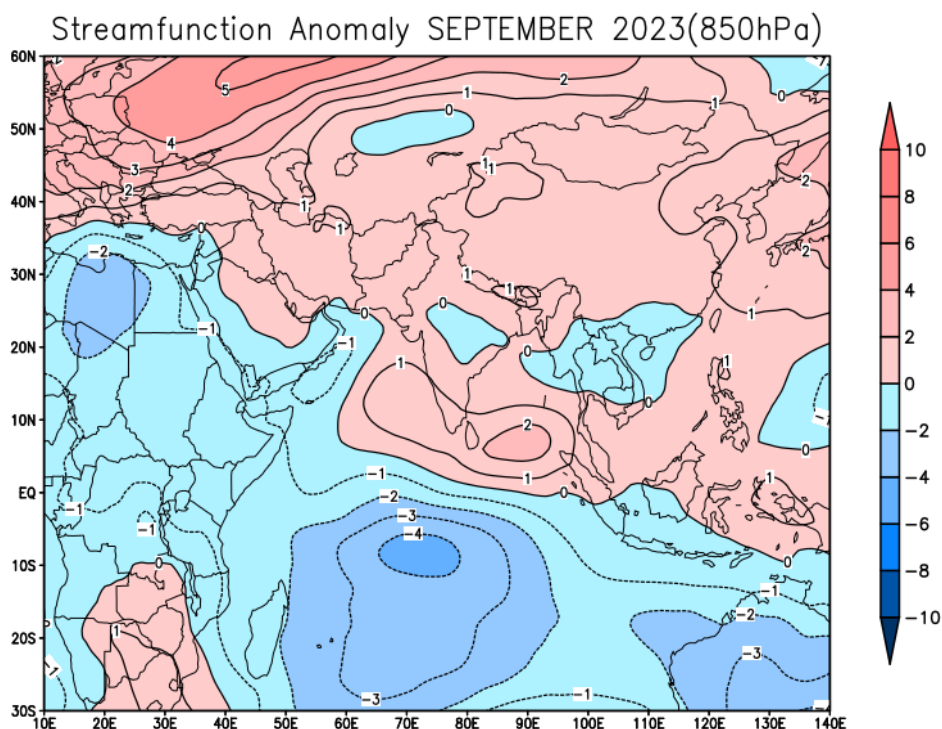
(OPERATIONAL NWP ANALYSIS OF IMD GFS T-574)

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

(a) STREAM FUNCTION: 850 hPa



(b) STREAM FUNCTION ANOMALY: 850 hPa



आकृति १४: सितम्बर २०२३ के लिए धारा कृत्य (10^6 मीटर^२/सेकेंड)

(ए) माध्य (बी) विसंगति ८५० एचपीए स्तरपर

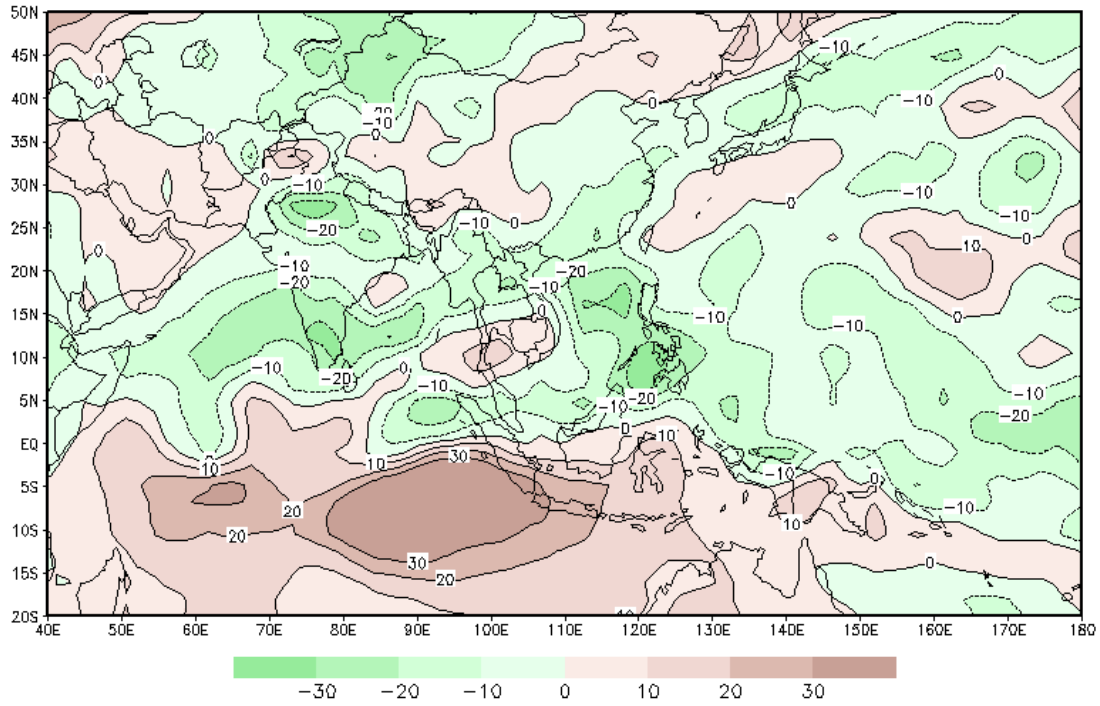
FIG. 14: STREAM FUNCTION (10^6 m²/s) FOR SEPTEMBER 2023

(a) MEAN (b) ANOMALY AT 850 hPa

(OPERATIONAL NWP ANALYSIS OF IMD GFS T-574)

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

OLR Anom SEPTEMBER 2023



आकृती १५: सितम्बर २०२३ के लिए ओ एल आर विसंगति (वॉट / मी^२)

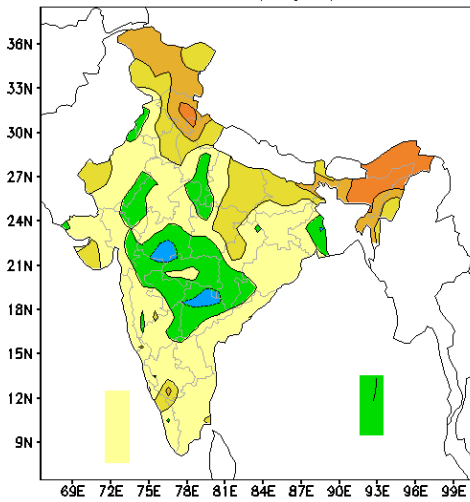
FIG. 15: OLR ANOMALY (W/m²) FOR SEPTEMBER 2023

(DATA SOURCE: CDC / NOAA, USA)

(BASED ON 1991 - 2020 CLIMATOLOGY)

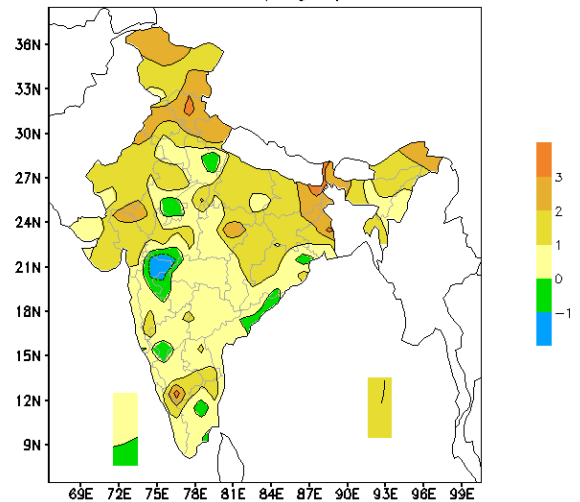
(a) MAXIMUM TEMPERATURE ANOMALY

MAX TEMP ANOMALY (deg C) : SEP 2023



(b) MINIMUM TEMPERATURE ANOMALY

MIN TEMP ANOMALY (deg C) : SEP 2023



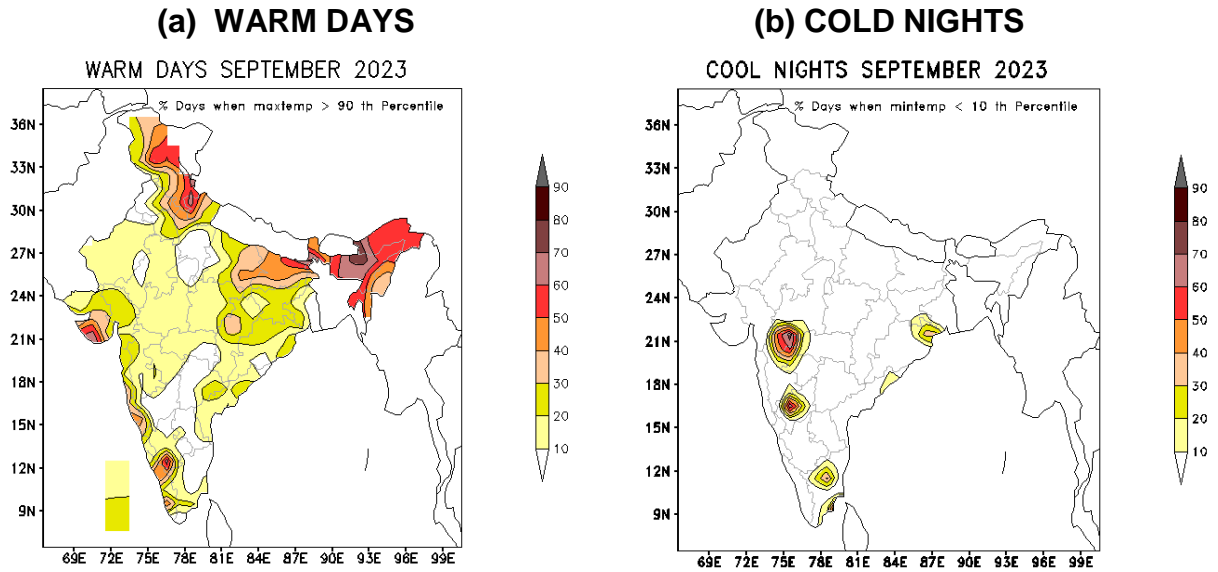
आकृती १६: सितम्बर २०२३ के लिए औसत मासिक तापमान विसंगतियां (डिग्री सेल्सियस)

(ए) अधिकतम (बी) न्यूनतम

FIG. 16: MEAN MONTHLY TEMPERATURE ANOMALIES (°C) FOR SEPTEMBER 2023

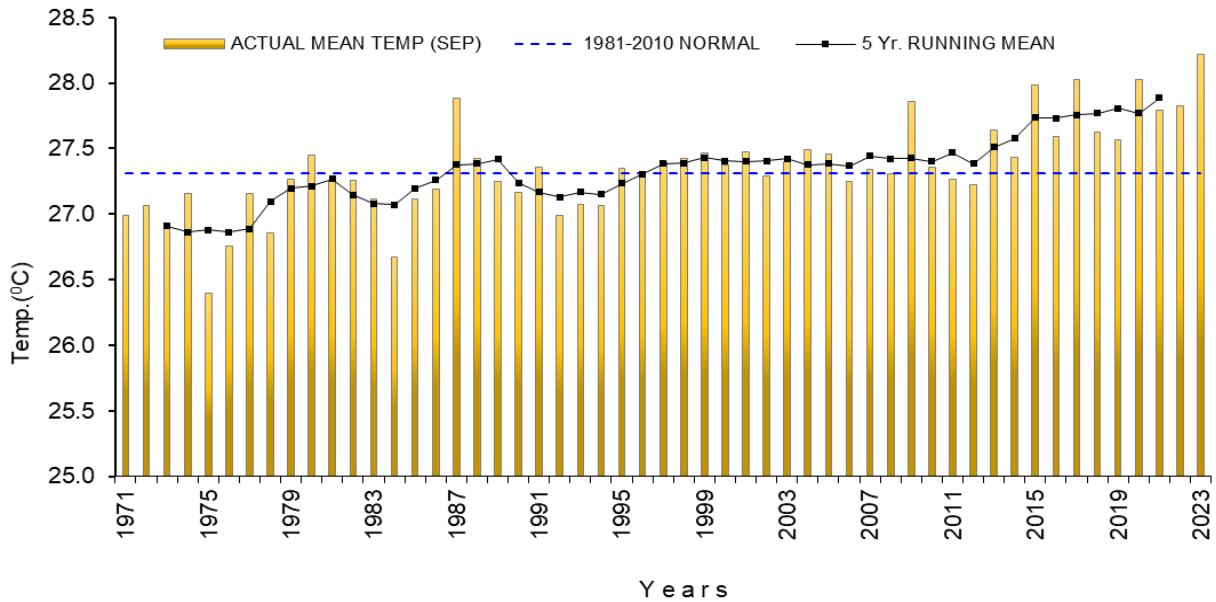
(a) MAXIMUM (b) MINIMUM

(BASED ON 1981-2010 NORMALS)



आकृती १७: (ए) उन दिनों का प्रतिशत जब अधिकतम तापमान > 90 वें प्रतिशत
 (बी) उन दिनों का प्रतिशत जब न्यूनतम तापमान < 10 वें प्रतिशत

FIG. 17: (a)PERCENTAGE OF DAYS WHEN MAXIMUM TEMPERATURE > 90TH PERCENTILE
 (b)PERCENTAGE OF DAYS WHEN MINIMUM TEMPERATURE <10TH PERCENTILE

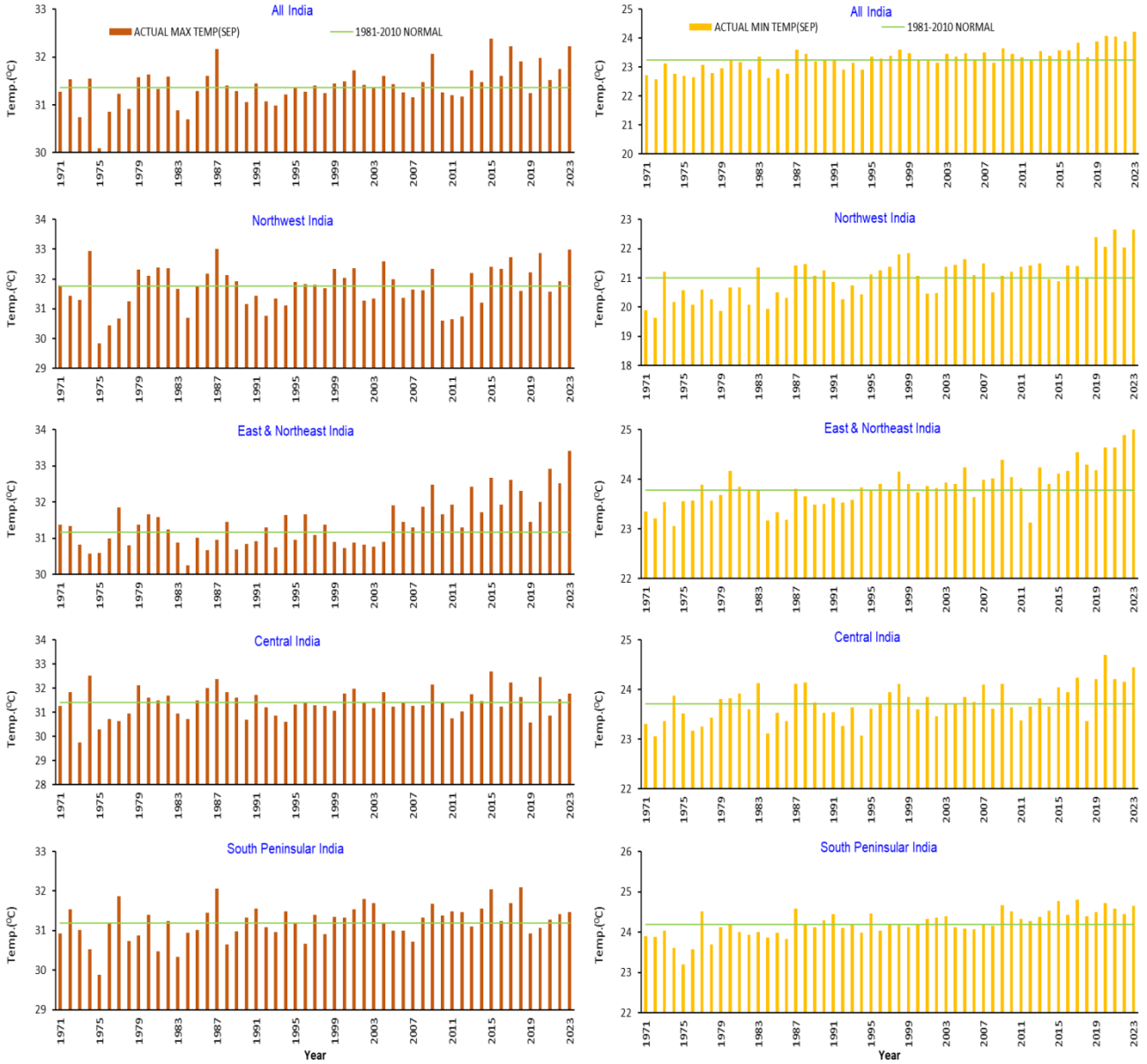


आकृती १८: सितम्बर १९७१-२०२३ की अवधि के दौरान भारत में औसत तापमान की समय श्रृंखला और महीने के लिए पांच साल चलने वाला औसत तापमान

FIG. 18: TIME SERIES OF MEAN TEMPERATURE AVERAGED OVER INDIA (VERTICAL BARS AND FIVE-YEAR RUNNING MEAN (CONTINUOUS LINE) FOR THE MONTH OF SEPTEMBER DURING THE PERIOD 1971-2023.

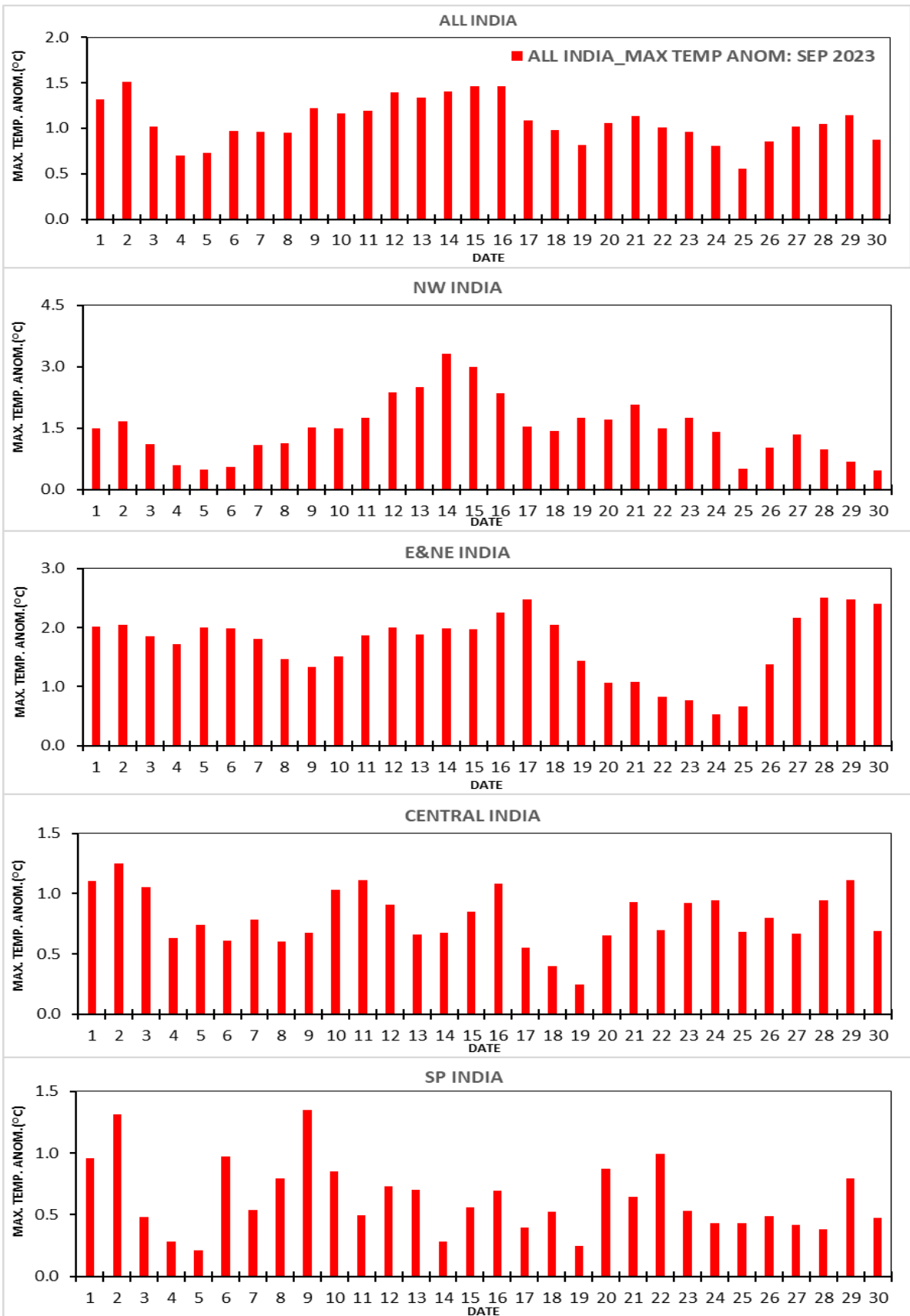
(a) MAXIMUM

(b) MINIMUM



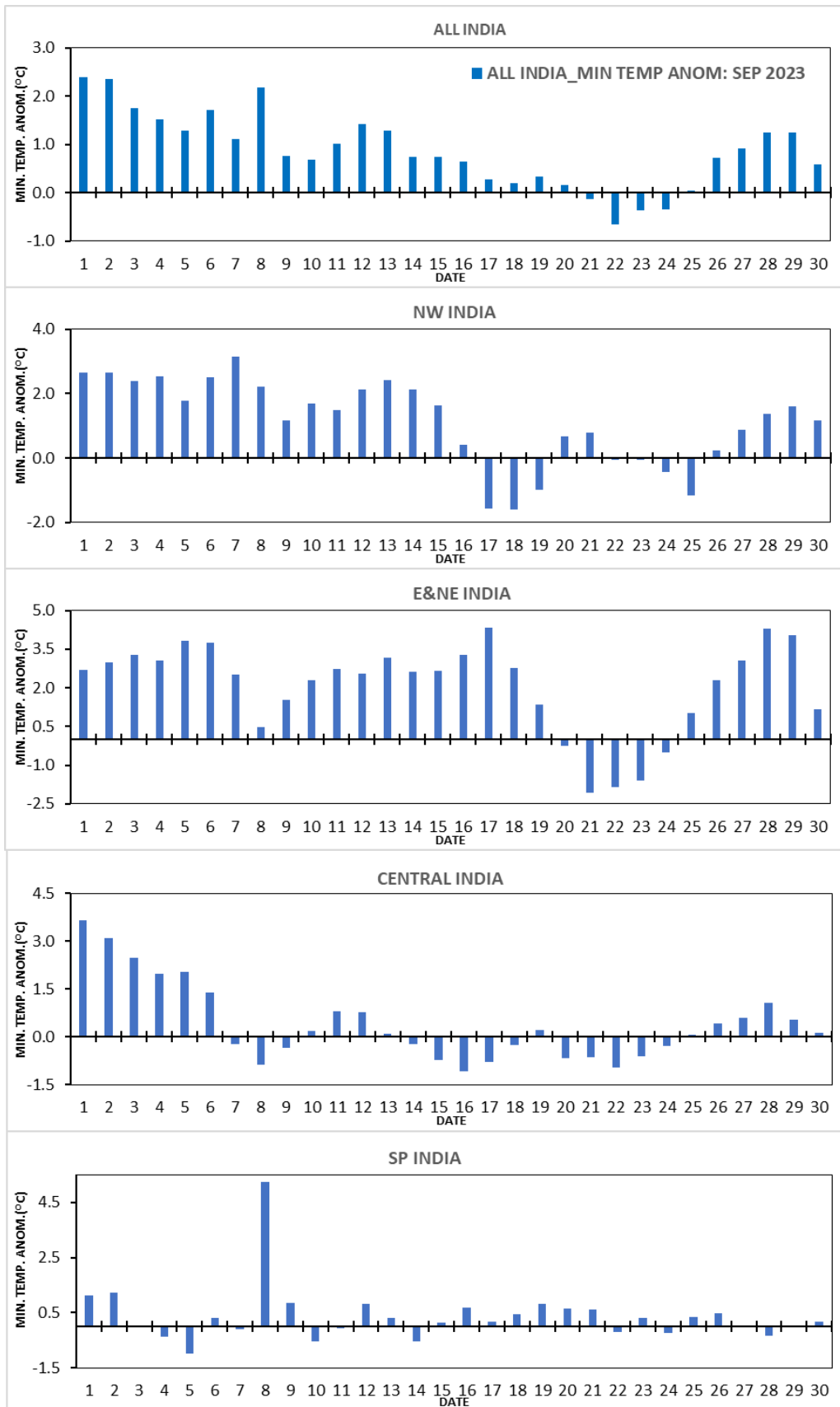
आकृती १९: सितम्बर महीने के लिए १९७१-२०२३ अवधि के दौरान (ए) अधिकतम (बी) न्यूनतम तापमान की समय श्रृंखला पूरे देश और चार सजातीय क्षेत्र के लिए

FIG. 19: TIME SERIES OF TEMPERATURE FOR THE COUNTRY AS A WHOLE AND THE FOUR HOMOGENEOUS REGIONS FOR THE MONTH OF SEPTEMBER DURING THE PERIOD 1971 - 2023 (a) MAXIMUM (b) MINIMUM



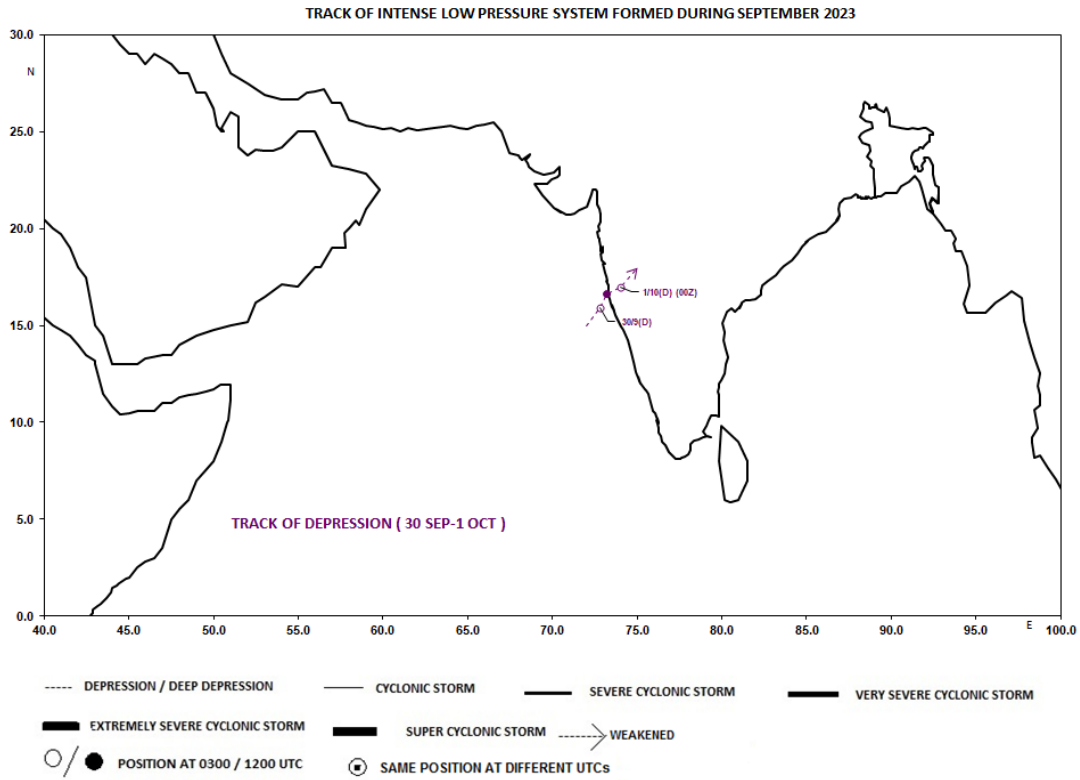
आकृती २०(ए): सितम्बर २०२३ के दौरान सभी भारत और चार सजातीय क्षेत्रों में अधिकतम तापमान विसंगतियाँ की दैनिक भिन्नता

FIG. 20(a): DAILY VARIATION OF MAXIMUM TEMPERATURE ANOMALY OVER ALL INDIA AND FOUR HOMOGENEOUS REGIONS DURING SEPTEMBER 2023



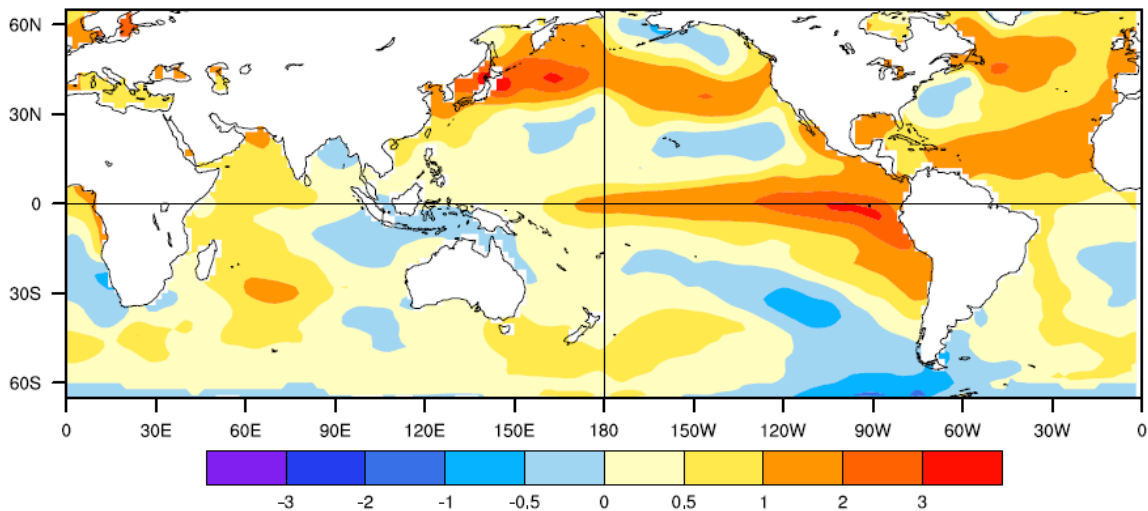
आकृती २०(बी): सितम्बर २०२३ के दौरान सभी भारत और चार सजातीय क्षेत्रों में न्यूनतम तापमान विसंगतियाँ की दैनिक भिन्नता

FIG. 20(b): DAILY VARIATION OF MINIMUM TEMPERATURE ANOMALY OVER ALL INDIA AND FOUR HOMOGENEOUS REGIONS DURING SEPTEMBER 2023

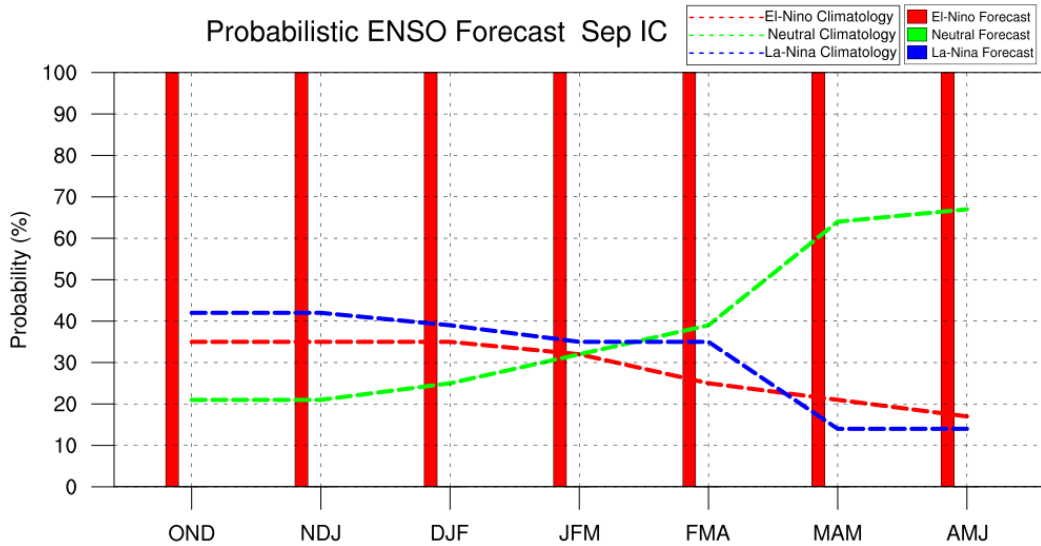


आकृती २१: सितम्बर २०२३ के दौरान गठित तीव्र निम्न दबाव प्रणाली का ट्रैक
FIG. 21: TRACK OF INTENSE LOW PRESSURE SYSTEMS FORMED DURING SEPTEMBER 2023

Average SST Anomalies SEPTEMBER 2023

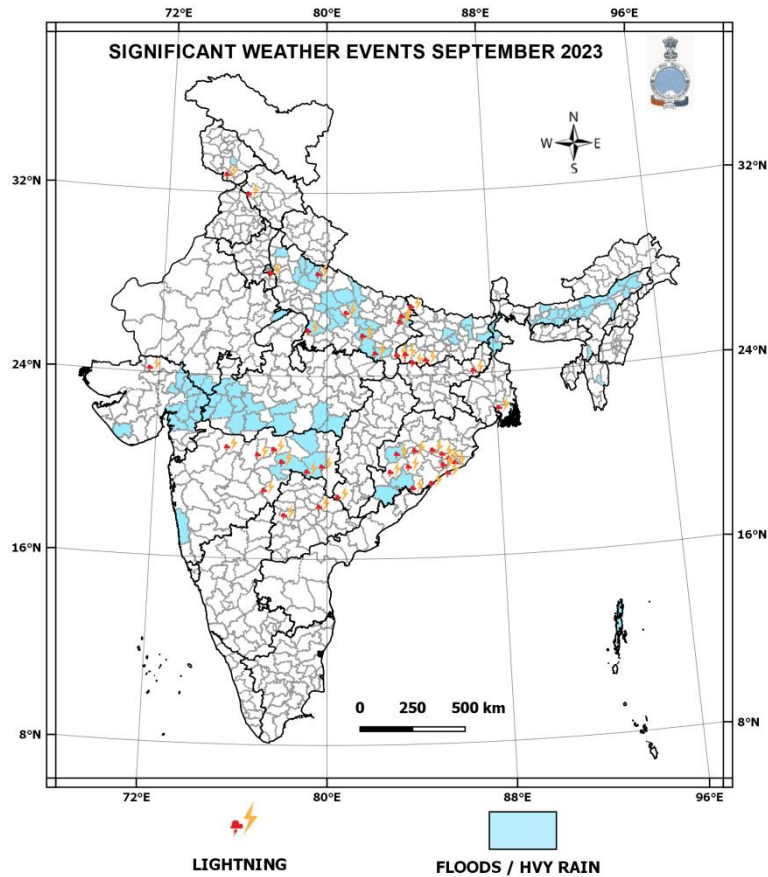


आकृती २२: समुद्री सतह तापमान विसंगति (°C)
FIG. 22: SEA SURFACE TEMPERATURE ANOMALY (°C) IN SEPTEMBER 2023
(Data Source - ERSST V5, NoAA)



आकृती २३: नीनो ३.४ सूचकांक की जलवायु संबंधी संभावनाओं के साथ संभाव्यता पूर्वानुमान

FIG. 23: Probability forecast along with climatological probabilities of Niño 3.4 Index from high resolution Monsoon Mission Coupled Forecast System (MMCFS).
 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 २४: सितम्बर २०२३ के दौरान महत्वपूर्ण मौसम की घटनाएं
 (वास्तविक समय मीडिया रिपोर्ट के आधार पर)

Fig. 24: SIGNIFICANT WEATHER EVENTS DURING SEPTEMBER 2023
 (BASED ON REAL TIME MEDIA REPORT)

तालिका - १ / TABLE - 1

सितम्बर २०२३ के महीने के लिए उपमंडल वार वर्षा के आकड़े
**METEOROLOGICAL SUBDIVISION WISE RAINFALL STATISTICS
 FOR THE MONTH OF SEPTEMBER 2023 BASED ON OPERATIONAL DATA**

MET. SUBDIVISION		ACTUAL	NORMAL	%
		(mm)	(mm)	DEP
1	A & N ISLAND	1065	430	148
2	ARUNACHAL PRADESH	179	348	-49
3	ASSAM & MEGHALAYA	179	329	-46
4	N M M T	173	268	-35
5	SHWB & SIKKIM	352	388	-9
6	GANGETIC WEST BENGAL	259	266	-3
7	ODISHA	332	236	41
8	JHARKHAND	250	224	11
9	BIHAR	191	217	-12
10	EAST U.P.	116	173	-33
11	WEST U.P.	134	125	7
12	UTTARAKHAND	152	182	-17
13	HAR. CHD & DELHI	45	77	-42
14	PUNJAB	65	78	-17
15	HIMACHAL PRADESH	70	121	-42
16	JAMMU & KASHMIR & LADAKH	79	96	-18
17	WEST RAJASTHAN	50	41	22
18	EAST RAJASTHAN	125	92	37
19	WEST MADHYA PRADESH	313	149	110
20	EAST MADHYA PRADESH	247	190	30
21	GUJARAT REGION	245	147	67
22	SAURASHTRA & KUTCH	105	93	13
23	KONKAN & GOA	526	374	41
24	MADHYA MAHARASHTRA	203	159	27
25	MARATHWADA	194	161	21
26	VIDARBHA	245	156	57
27	CHHATTISGARH	322	211	52
28	COASTAL A. P.& YANAM	188	163	16
29	TELANGANA	220	159	39
30	RAYALASEEMA	168	137	23
31	TAMIL., PUDU. & KARAIKAL	148	119	25
32	COASTAL KARNATAKA	430	320	34
33	N. I. KARNATAKA	129	140	-8
34	S. I. KARNATAKA	123	149	-17
35	KERALA & MAHE	415	272	53
36	LAKSHADWEEP	269	170	58

तालिका - २ / TABLE - 2

सितम्बर २०२३ के दौरान २४ घंटों में हुई बहुत भारी या अत्यधिक भारी वर्षा वाले स्टेशन
STATIONS WHICH RECEIVED VERY HEAVY (115.6 to 204.4 mm) OR EXTREMELY HEAVY
(g.e.204.5 mm) RAINFALL IN 24 HOURS DURING SEPTEMBER 2023

(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)
1	HIRIYUR HMS	S. I. KARNATAKA	116.2
2	LONG ISLAND	A & N ISLAND	244
	LONAVALA_AGRI	MADHYA MAHARASHTRA	119
	VAIGAI DAM	TAMIL NADU & PUDUCHERRY	150.2
	SHAHPUR	N. I. KARNATAKA	122.4
3	LONG ISLAND	A & N ISLAND	202.5
	NARAJ	ORISSA	131
	KHILA GHANPUR	TELANGANA	130.4
	KONDAPURAM	RAYALASEEMA	159.2
4	LONG ISLAND	A & N ISLAND	208
	BANKI	ORISSA	133
	DICH PALLE	TELANGANA	151.2
	KONNI	KERALA	147
5	BELAGUNTHA	ORISSA	142.4
	MEDCHAL	TELANGANA	142.8
6	BALASORE	ORISSA	117.1
7	SIMILIGUDA	ORISSA	158
	SINGODI	EAST MADHYA PRADESH	152
	KHANVEL	GUJARAT REGION	148
	KONDAGAON	CHHATTISGARH	116.9
	BALAJIPETA	COASTAL ANDHRA PRADESH	132.4
	VADAKARA	KERALA	169
8	WAGHAI	GUJARAT REGION	141
	HARNAI IMD OBSY	KONKAN & GOA	209.8
	LONAVALA_AGRI	MADHYA MAHARASHTRA	125
9	NANDADIH	JHARKHAND	154.8
	JHIRNYA	WEST MADHYA PRADESH	142
	ORCHHA	EAST MADHYA PRADESH	155
	KAPRADA	GUJARAT REGION	134
	DAPOLI_AGRI	KONKAN & GOA	245
	TRIMBAKSHWAR	MADHYA MAHARASHTRA	155
	SOEGAON	MARATHWADA	130
10	BARAPANI	ASSAM & MEGHALAYA	116.8
	NAGINA	WEST UTTAR PRADESH	150
	NAINITAL	UTTARAKHAND	118
	DHOLPUR TEHSIL SR	EAST RAJASTHAN	230
	MORENA-AWS	WEST MADHYA PRADESH	169
	TAMIA	EAST MADHYA PRADESH	141
	MAHABALESHWAR- IMD OBSY	MADHYA MAHARASHTRA	143.4

DATE	STATION NAME	NAME OF SUBDIVISION	RAINFALL
			(mm)
11	MAYA BANDAR	A & N ISLAND	224
	BIHUBAR	ASSAM & MEGHALAYA	128.6
	FATEHPUR TEHSIL	EAST UTTAR PRADESH	324
	BILASPUR	WEST UTTAR PRADESH	304.8
	NAINITAL	UTTARAKHAND	118
	ASNAWAR SR	EAST RAJASTHAN	130
	AMARAVATI	COASTAL ANDHRA PRADESH	126.2
12	DHARMANAGAR/ PANISAGAR	N M M T	116.4
	SIMILIGUDA	ORISSA	208
	ELGIN BRIDGE	EAST UTTAR PRADESH	264.6
13	AMBADOLA	ORISSA	187.5
14	BOLANGIR	ORISSA	215
	KHAJURAHO AERO	EAST MADHYA PRADESH	127
	DAHEGAON	TELANGANA	132.4
15	DEOGAON	ORISSA	193
	BIJNOR	WEST UTTAR PRADESH	183
	SANAWAD	WEST MADHYA PRADESH	180
	BARGHAT	EAST MADHYA PRADESH	243
	Gondia AP	VIDARBHA	115.8
	CHAMPA	CHHATTISGARH	160.2
16	SANGRUR	PUNJAB	119
	GHAMROOR	HIMACHAL PRADESH	128.4
	DUG	EAST RAJASTHAN	157
	BHIMPUR	WEST MADHYA PRADESH	445
	SAUSAR	EAST MADHYA PRADESH	202.2
	CHIKHALDA	VIDARBHA	196.3
	DHARMASTHALA	COASTAL KARNATAKA	135.8
	KOTTIGEVARA	S. I. KARNATAKA	133.2
17	MILAK	WEST UTTAR PRADESH	250
	PEHOWA	HAR CHD & DLH	116
	BAGIDORA SR	EAST RAJASTHAN	365
	KATHIWADA	WEST MADHYA PRADESH	341
	MORVA HADAF	GUJARAT REGION	253
	TINDIVANAM	TAMIL NADU & PUDUCHERRY	130
18	HUT BAY	A & N ISLAND	146.2
	SUNDARGARH	ORISSA	125.4
	NITHUWA SR	EAST RAJASTHAN	205
	BAJNA	WEST MADHYA PRADESH	116
	SINGRAULI-aws	EAST MADHYA PRADESH	120.6
	GODHRA	GUJARAT REGION	239
	UTHANGARAI	TAMIL NADU & PUDUCHERRY	121.4
19	AMB	HIMACHAL PRADESH	147
	RADHANPUR	GUJARAT REGION	194
	VISAVADAR	SAURASHTRA & KUTCH	302
20	KHOWANG	ASSAM & MEGHALAYA	179
	KORAPUT	ORISSA	168
	LAKHPAT	SAURASHTRA & KUTCH	171
21	PANBARI	ASSAM & MEGHALAYA	151.2
	CHOTTABEKRA	N M M T	128
	BUXADUAR	SHWB & SIKKIM	132.8
	SINAPALI	ORISSA	124
	TENUGHAT	JHARKHAND	124.8
	HALDWANI	UTTARAKHAND	181
	LORMI	CHHATTISGARH	175

DATE	STATION NAME	NAME OF SUBDIVISION	RAINFALL
			(mm)
22	MAWKYRWAT	ASSAM & MEGHALAYA	128
	CHANCHAL	SHWB & SIKKIM	274.6
	GODDA	JHARKHAND	122.4
	SABOUR	BIHAR	187
	ASHTA-AWS	WEST MADHYA PRADESH	147
	GANGAPUR	MARATHWADA	140
	SIMGA	CHHATTISGARH	122.5
	PARKAL	TELANGANA	124.4
23	ZUNHEBOTO	N M M T	204.2
	HALDIBARI	SHWB & SIKKIM	128.6
	TANTLOI	GANGETIC WEST BENGAL	138.4
	KODAWANPUR/C.B II	BIHAR	316.4
	BAHERI	WEST UTTAR PRADESH	245
	BIAORA	WEST MADHYA PRADESH	148
	WARASEONI	EAST MADHYA PRADESH	128.3
	IGATPURI	MADHYA MAHARASHTRA	136
	NAGPUR AERODROME	VIDARBHA	116.5
	DURG	CHHATTISGARH	170.4
	GORANTLA	RAYALASEEMA	145.2
MANNARKKAD	KERALA	176.6	
24	MAYA BANDAR	A & N ISLAND	132
	ITAHAR	SHWB & SIKKIM	478.4
	BASUA	BIHAR	292
	KHIRKIYA-arg	WEST MADHYA PRADESH	160.2
	CHUDA	SAURASHTRA & KUTCH	120
	CHAS_AGRI	MADHYA MAHARASHTRA	160
	MANVAT	MARATHWADA	135
	TIRUTTANI	TAMIL NADU & PUDUCHERRY	125
25	HUT BAY	A & N ISLAND	190
	HALDIBARI	SHWB & SIKKIM	169
	UDAINAGAR	WEST MADHYA PRADESH	150
	RAJPIPALA	GUJARAT REGION	146
	GUDIYATHAM	TAMIL NADU & PUDUCHERRY	118.4
27	GAGANBAWADA	MADHYA MAHARASHTRA	128
28	PORT BLAIR	A & N ISLAND	154
	LANJA	KONKAN & GOA	134
	KVK KATTUKUPPAM ARG	TAMIL NADU & PUDUCHERRY	121
29	LONG ISLAND	A & N ISLAND	145.6
	DABOLIM N.A.S. - NAVY	KONKAN & GOA	116.6
	KUSMI	CHHATTISGARH	118
	CHERTHALA	KERALA	131.2
30	MAPUSA	KONKAN & GOA	127.5
	ERNAKULAM SOUTH	KERALA	130

 Extremely heavy rainfall

तालिका 3 / TABLE 3

सितम्बर २०२३ माह के दौरान की तापमान विसंगति

TEMP. ANOMALIES OVER INDIA AND FOUR HOMOGENEOUS REGIONS DURING SEPTEMBER 2023

SEP 2023		Max Temp (°C)	Min Temp (°C)	Mean Temp (°C)
ALL INDIA	ACTUAL	32.22	24.22	28.22
	NORMAL	31.37	23.26	27.31
	ANOMALY	0.86	0.96	0.91
NORTHWEST INDIA	ACTUAL	32.99	22.65	27.82
	NORMAL	31.76	20.99	26.37
	ANOMALY	1.23	1.66	1.45
EAST & NORTHEAST INDIA	ACTUAL	33.42	25.12	29.27
	NORMAL	31.16	23.77	27.47
	ANOMALY	2.25	1.34	1.80
CENTRAL INDIA	ACTUAL	31.78	24.44	28.11
	NORMAL	31.41	23.71	27.56
	ANOMALY	0.37	0.73	0.55
SOUTH PENNINSULAR INDIA	ACTUAL	31.47	24.65	28.06
	NORMAL	31.19	24.19	27.69
	ANOMALY	0.28	0.467	0.37

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 DEGREE CELSIUS

SLP ANOMALIES			Tahiti SLP minus Darwin SLP	PACIFIC SST							
				NINO 1+2 0° - 10°S 90°W - 80°W		NINO 3 5°N - 5°S 150°W - 90°W		NINO 3.4 5°N - 5°S 170°W - 120°W		NINO 4 5°N - 5°S 160°E - 150°W	
Month	Tahiti	Darwin	SOI	Anomaly	Mean	Anomaly	Mean	Anomaly	Mean	Anomaly	Mean
SEP 23	-0.90	1.40	-2.10	2.49	23.22	2.13	27.04	1.59	28.31	1.08	29.84
AUG 23	0.20	1.70	-1.40	3.32	24.33	1.97	27.09	1.31	28.16	0.90	29.69
JUL 23	0.20	0.70	-0.40	2.90	24.86	1.57	27.37	1.01	28.30	0.67	29.57
JUN 23	0.30	-0.10	0.40	2.44	25.57	1.23	27.85	0.81	28.54	0.54	29.51
MAY 23	-0.30	1.60	-1.70	2.23	26.64	0.78	28.03	0.4	28.33	0.25	29.17
APR 23	-0.30	-0.80	0.40	2.66	28.19	0.43	28.01	0.09	27.91	0.08	28.71
MAR 23	0.40	0.10	0.30	1.40	27.89	0.25	27.46	-0.16	27.13	-0.32	28.00
FEB 23	1.00	-1.50	2.30	0.27	26.37	-0.22	26.19	-0.56	26.19	-0.62	27.58
JAN 23	1.90	-0.70	2.30	-0.58	23.98	-0.62	25.04	-0.75	25.80	-0.67	27.65
DEC 22	2.20	-1.80	3.50	-0.52	22.29	-0.87	24.36	-0.89	25.71	-0.87	27.67
NOV 22	0.30	-0.30	0.50	-1.24	20.41	-0.97	24.13	-0.91	25.80	-1.00	27.70
OCT 22	1.60	-1.50	2.80	-1.81	19.21	-1.13	23.85	-1.03	25.69	-1.14	27.62

(Data Source: CPC/NCEP, USA)

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