Government of India
Earth System Science Organization
Ministry of Earth Sciences
India Meteorological Department

Press Release: Dated: 29 Feb 2024

Subject: Current Weather Status and Extended range Forecast for next two weeks (29 Feb-13 March)

1. Salient Observed Features for week ending 28 Feb 2024

- **Three numbers of Western Disturbances (WD) moved across extreme northern parts of India with limited impact in the region. They caused only isolated light to moderate rainfall/snow over western Himalayan states** (Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand) for 1-3 days. Due to favorable synoptic system over central India, light to moderate rainfall and thunderstorms with isolated hailstorms have been reported in most dates during 2nd half of the week. **Hailstorm** was also reported at an isolated places over Madhya Pradesh on 22nd Feb; over Jharkhand and west Madhya Pradesh on 23rd Feb; over Arunachal Pradesh and Sikkim on 24th Feb; over Chhattisgarh on 25th Feb; over Marathwada on 27th Feb; over Madhya Pradesh, Chhattisgarh, Marathwada and Jharkhand on 28th Feb.
- Due to trough in westerly and support from lower level winds with moisture incursions from north Bay of Bengal, **Heavy rainfall** was recorded at isolated places over Arunachal Pradesh on 22nd & 24th; over Assam & Tripura on 23rd Feb.
- **No Dense fog conditions** reported over any parts of the country during the week.
- **Temperature Scenario:** The highest maximum temperature of 39.4°**C** had been recorded at Erode (Tamilnadu) on 23rd February 2024 and the lowest minimum temperature of 5.0°**C** had been recorded at Karnal (Haryana) on 23rd & 24th February 2024 over the plains of the country during the week.
- **Analysis of Weekly overall Rainfall distribution during the week ending on 28 Feb 2024 and Winter Season's Rainfall Scenario (1 Jan- 28 Feb 2024):** It shows for the country as a

whole, the weekly cumulative All India Rainfall in % departure from its long period average (LPA) till week ending on 28 Feb 2024 was -33%. All India Seasonal cumulative rainfall % departure during this year's **Winter's Rainfall** during **1 Jan to 28 Feb 2024** is -32% and over northwest India, it is -45%. Details of the rainfall distribution over the four broad geographical regions of India are given in Table 1 and Meteorological sub-division-wise rainfall both for week and season are given in Annex I and II respectively.

Table 1: Rainfall status (Week and season)

Region	WEEK			SEASON		
	22.02.2024 TO 28.02.2024			01.01.2024 TO 28.02.2024		
	Actual	Normal	% Dep	Actual	Normal	% Dep
EAST & NORTH-EAST INDIA	15.2	9.1	67%	39.3	47.2	-17%
NORTH-WEST INDIA	1.5	12.1	-88%	43.1	78.7	-45%
CENTRAL INDIA	3.5	1.7	+105%	11.2	14.9	-25%
SOUTH PENINSULA	0.3	1.8	-83%	18.9	15.7	+20%
Country as a whole	4.1	6.1	-33%	27	39.8	-32%

2. Large scale features

Madden Julian Oscillation (MJO) index in the phase diagram currently in phase 3 with amplitude more than 1. In the forecast of GEFS model, the MJO signal show incoherent eastward propagation towards phase 4 during next 4-5 days as the ensemble members are showing a large spread within the first week. The GEFS model predicts that the MJO signal is likely to move steadily in phase 4 during second week with amplitude more than one and reach phase 5 at the end of the week. On the other hand, ECMWF model indicates that the MJO signal is likely to enter imminently in phase 4 with amplitude more than 1. The ensemble members of the model favour an MJO to remain within phase 4 during the entire first week and in the beginning of second week. The ECMWF forecasts suggest that the MJO is likely to enter in phase 5 in the first half of week 2 and remain in the same phase during rest of the forecast period. Accordingly, The MJO is less likely to favour any cyclogenesis over Bay of Bengal (BoB) and Arabian Sea (AS). However, there is little probability to

support the convective activity over Andaman Sea and adjoining southeast Bay of Bengal (BoB) during week 1.

in the phase diagram, with a fast diagonal movement during

past 3-4 days moved eastward from phase 8 to phase 4 across phases 1, 2 and 3 with very low amplitude less than 1. MJO index currently in phase 4 is likely to be in the same phase during next 2 weeks as illustrated by different forecasts. The GEFS model predicts a MJO signal meandering within phase 4 with a gradual increase in amplitude reaching out of the unit circle. On the other hand, ECMWF model indicates a stagnated/looping MJO signal within phase 4 with amplitude near to 1. The ensemble members of both the models favour an incoherent MJO with within phase 4 during the entire forecast period.

3. Forecast for next two week

Weather systems & associated Precipitation during Week 1 (29 February to 06 March, 2024) and Week 2 (07 to 13 March, 2024)

Weather systems & associated Precipitation during Week 1 (29 February to 06 March, 2024)

- **A Western Disturbance as a cyclonic circulation lies over northeast Iran & neighbourhood in lower to upper tropospheric levels. High moisture feeding from Arabian Sea to northwest India is also likely on 1st& 2nd March. It is very likely to affect Western Himalayan Region from night of 29th February and plains of northwest India from 1st March to 3rd March with peak intensity on 1st & 2nd March, 2024. Under its influence:**

- **Fairly widespread to widespread** light/moderate rainfall accompanied with **thunderstorms & lightning** very likely over **Western Himalayan Region during night of 29th February to 3rd March, 2024.**
- Scattered to fairly widespread light/moderate rainfall accompanied with **thunderstorms, lightning& gusty winds (40-50 kmph gusting to 60 kmph)** very likely over Punjab, Haryana-Chandigarh-Delhi and scattered light/moderate rainfall over Uttar Pradesh, Rajasthan and north Madhya Pradesh on 1st& 2nd March, 2024.

- ***Isolated heavy to very heavy rainfall/snowfall very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 1st & 2nd March. Isolated heavy rainfall/snowfall over Himachal Pradesh on 1st & heavy to very heavy rainfall/snowfall on 2nd March. Isolated heavy rainfall/snowfall over Uttarakhand on 1st & 2nd March. Isolated heavy rainfall over Punjab on 02nd March, 2024.***
- **Hailstorm activity also very likely at isolated places over Himachal Pradesh, Uttarakhand, Punjab on 1st & 2nd March; over West Rajasthan on 1st and over Haryana, Chandigarh, East Rajasthan, Uttar Pradesh and north Madhya Pradesh on 2nd March, 2024.**
- **Strong surface winds (40-50 kmph gusting to 60 kmph)** likely over Northwest India on 1st & 2nd March.
  - Thereafter, under the influence of a fresh Western Disturbance, isolated to scattered rainfall/snowfall likely over Western Himalayan Region on 05th & 06th March 2024.
  - Due to trough or confluence of winds in central parts of the country at lower tropospheric levels, isolated light/moderate rainfall accompanied with **thunderstorms, lightning** very likely over Madhya Maharashtra, Marathawada during 29th February - 2nd March; Vidarbha on 1st & 2nd and Chhattisgarh during 2nd -5th March, 2024. Isolated **hailstorm** also likely over Madhya Maharashtra on 1st March; Marathawada on 1st& 2nd; Vidarbha and Chhattisgarh on 2nd March.
  - A trough in westerlies runs roughly along Long. 93°E to the north of Lat. 25°Nin lower tropospheric levels. Under its influence and eastward movement of current Western Disturbance:
- Isolated to scattered light/moderate rainfall/snowfall very likely over Arunachal Pradesh during next 7 days. Isolated **thunderstorms, lightning** very likely over Arunachal Pradesh on 29th February. Isolated **heavy rainfall/snowfall** likely over Arunachal Pradesh on 4th March, 2024.
- Isolated light/moderate rainfall over the Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during 3rd-6th March, 2024.
  - Light isolated rainfall is likely over Andaman & Nicobar Islands during 1st half of the week.

Rainfall for week 2 (07 to 13 March, 2024):

- ✓ Under the influence of Western Disturbances, light/moderate scattered to fairly widespread rainfall/snowfall likely over Western Himalayan Region during some days of the week.
- ✓ Due to trough/cyclonic circulation over south peninsular India, light isolated to scattered rainfall activity likely over south Peninsular India during many days of the week.
- ✓ Overall, rainfall activity is likely to be near **normal** over Western Himalayan region and over some parts of south Peninsular India. It is likely to be below normal over rest parts of India.

Maximum temperatures for Week 1 (29 February to 06 March, 2024) and Week 2 (07 to 13 March, 2024)

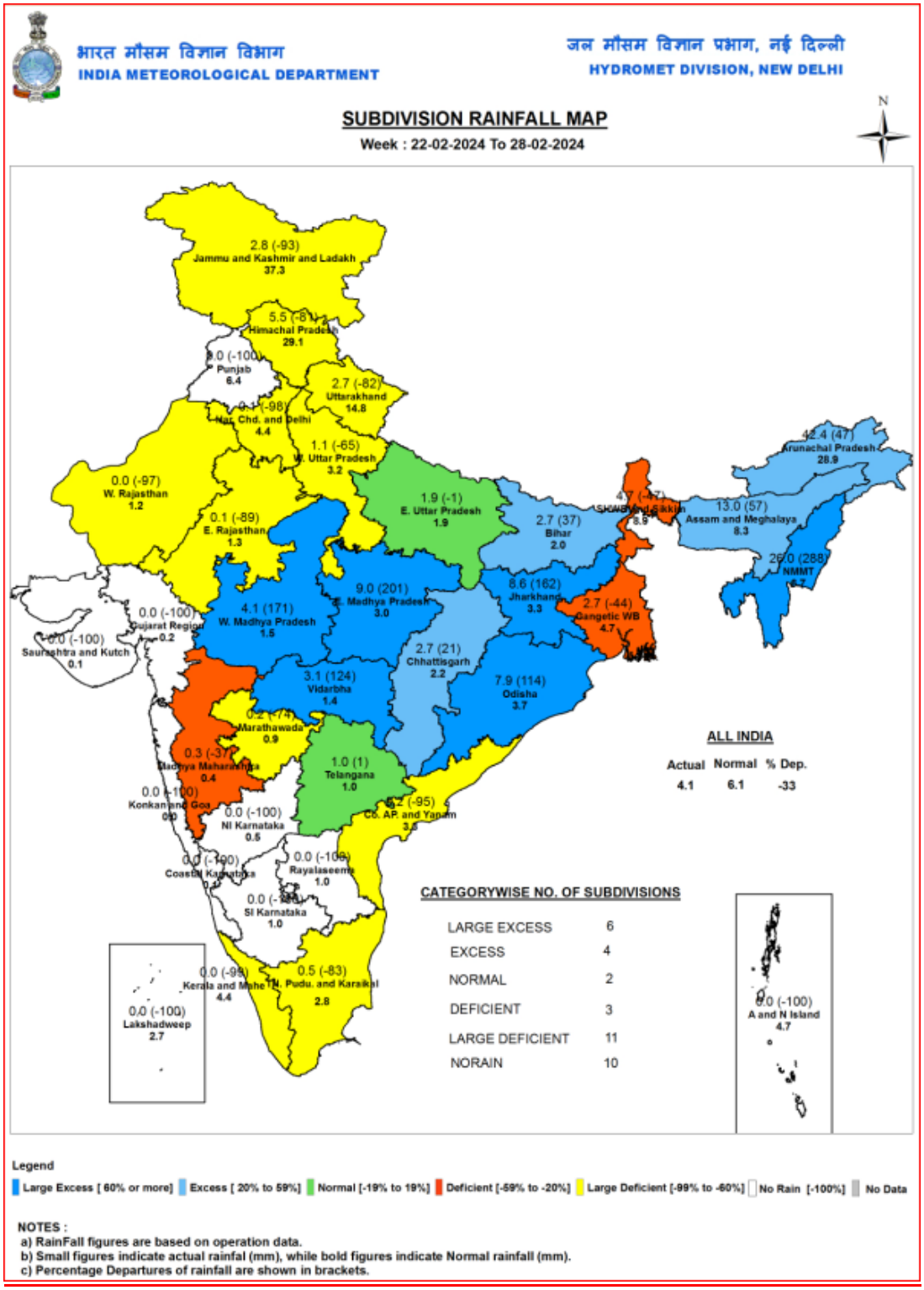
Maximum temperatures for Week 1 (29 February to 06 March, 2024):

- Maximum temperatures are between 33-37°C over many parts of south Peninsular India & Gujarat and less than 33°C over rest parts of the country. These are above normal by 2-4°C over parts of south Peninsular India & Gujarat.
- These are very likely to below normal to near normal over most parts of the country except extreme south Peninsular India and east coast, where it is likely to be above normal by 1-3°C.
- **Hot and humid weather very likely to prevail over Kerala and Rayalaseema during 1st half of the week.**

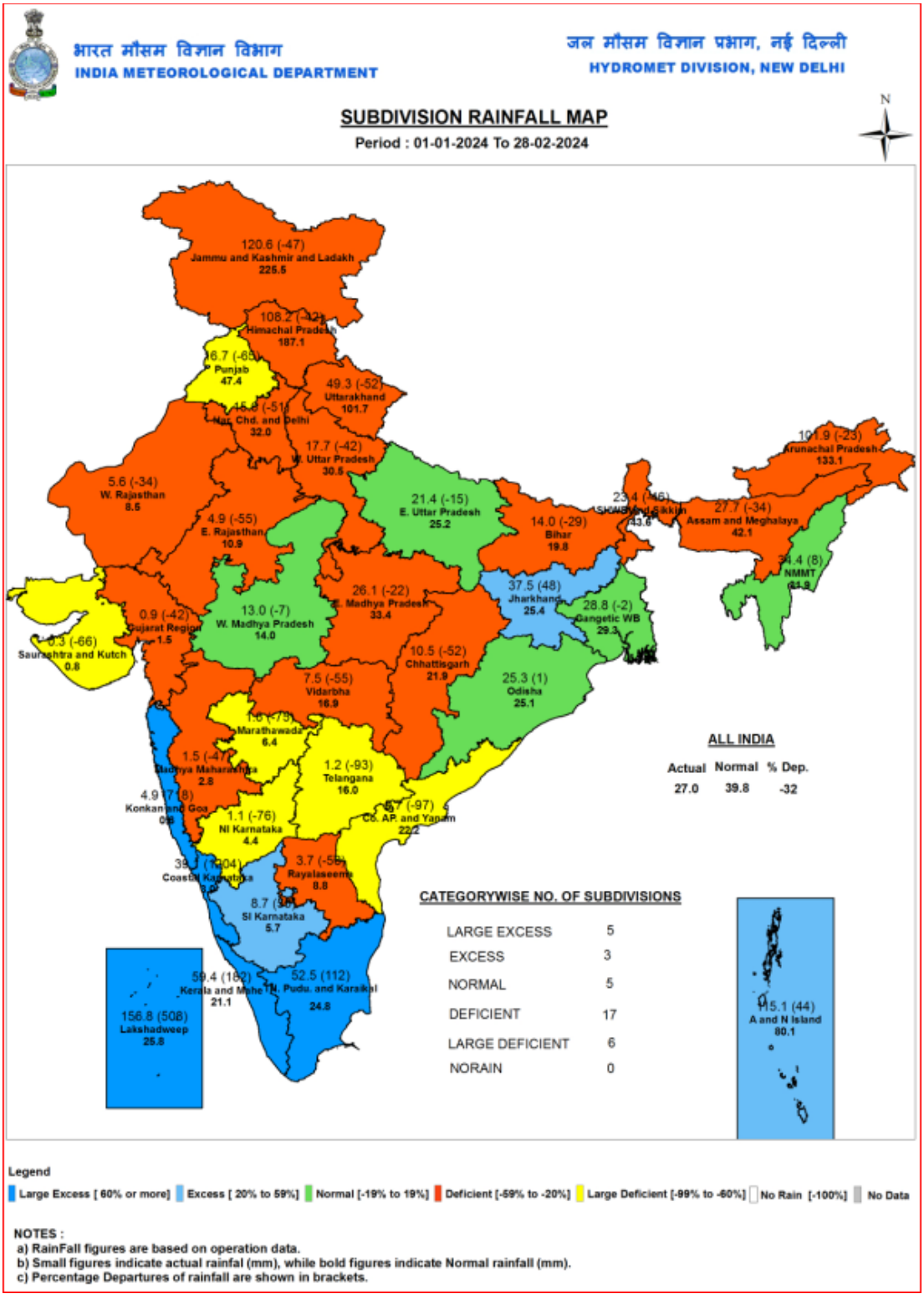
Maximum temperatures for Week 2 (07 to 13 March, 2024):

- The maximum temperatures are likely to rise gradually by 2-4°C over most parts of the country as compared to week 1.
- These are very likely to below normal to near normal over most parts of the country except extreme south Peninsular India, Maharashtra & Karnataka Coast, Andhra Pradesh and South Odisha, where it is likely to be above normal by 1-3°C.
- **Hot and humid weather very likely to prevail over south Peninsular India, Maharashtra & Karnataka Coast, Andhra Pradesh and South Odisha during some days of the week(Annex IV)**

Annex: I


भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT
जल मौसम विज्ञान प्रभाग, नई दिल्ली
HYDROMET DIVISION, NEW DELHI
SUBDIVISION RAINFALL MAP
Week : 22-02-2024 To 28-02-2024
N
2.8 (-93)
Jammu and Kashmir and Ladakh
37.3
5.5 (-8)
Himachal Pradesh
29.1
0.0 (-100)
Punjab
6.4
2.7 (-82)
Uttarakhand
14.8
0.1 (-98)
Haryana, Chd. and Delhi
4.4
1.1 (-65)
W. Uttar Pradesh
3.2
0.0 (-97)
W. Rajasthan
1.2
0.1 (-89)
E. Rajasthan
1.3
1.9 (-1)
E. Uttar Pradesh
1.9
2.7 (37)
Bihar
2.0
4.7 (-47)
Sikkim
8.9
42.4 (47)
Arunachal Pradesh
28.9
13.0 (57)
Assam and Meghalaya
8.3
26.0 (288)
NMMT
6.7
9.0 (201)
E. Madhya Pradesh
3.0
8.6 (162)
Jharkhand
3.3
2.7 (-44)
Gangetic WB
4.7
4.1 (171)
W. Madhya Pradesh
1.5
0.0 (-100)
Gujarat Region
0.2
0.0 (-100)
Saurashtra and Kutch
0.1
2.7 (21)
Chhattisgarh
2.2
3.1 (124)
Vidarbha
1.4
7.9 (114)
Odisha
3.7
0.2 (-74)
Marathawada
0.9
0.3 (-37)
Madhya Maharashtra
0.4
0.0 (-100)
Konkan and Goa
0.0
1.0 (1)
Telangana
1.0
0.2 (-95)
Co. AP. and Yanam
3.5
0.0 (-100)
NI Karnataka
0.5
0.0 (-100)
Coastal Karnataka
0.0
0.0 (-100)
Rayalaseema
1.0
0.0 (-100)
SI Karnataka
1.0
0.0 (-99)
Kerala and Mahe
4.4
0.5 (-83)
TN. Pudu. and Karaikal
2.8
0.0 (-100)
Lakshadweep
2.7
0.0 (-100)
A and N Island
4.7
ALL INDIA
Actual Normal % Dep.
4.1 6.1 -33
CATEGORYWISE NO. OF SUBDIVISIONS
LARGE EXCESS 6
EXCESS 4
NORMAL 2
DEFICIENT 3
LARGE DEFICIENT 11
NORAIN 10
Legend
Large Excess [60% or more]
Excess [20% to 59%]
Normal [-19% to 19%]
Deficient [-59% to -20%]
Large Deficient [-99% to -60%]
No Rain [-100%]
No Data
NOTES :
a) RainFall figures are based on operation data.
b) Small figures indicate actual rainfall (mm), while bold figures indicate Normal rainfall (mm).
c) Percentage Departures of rainfall are shown in brackets.

Annex II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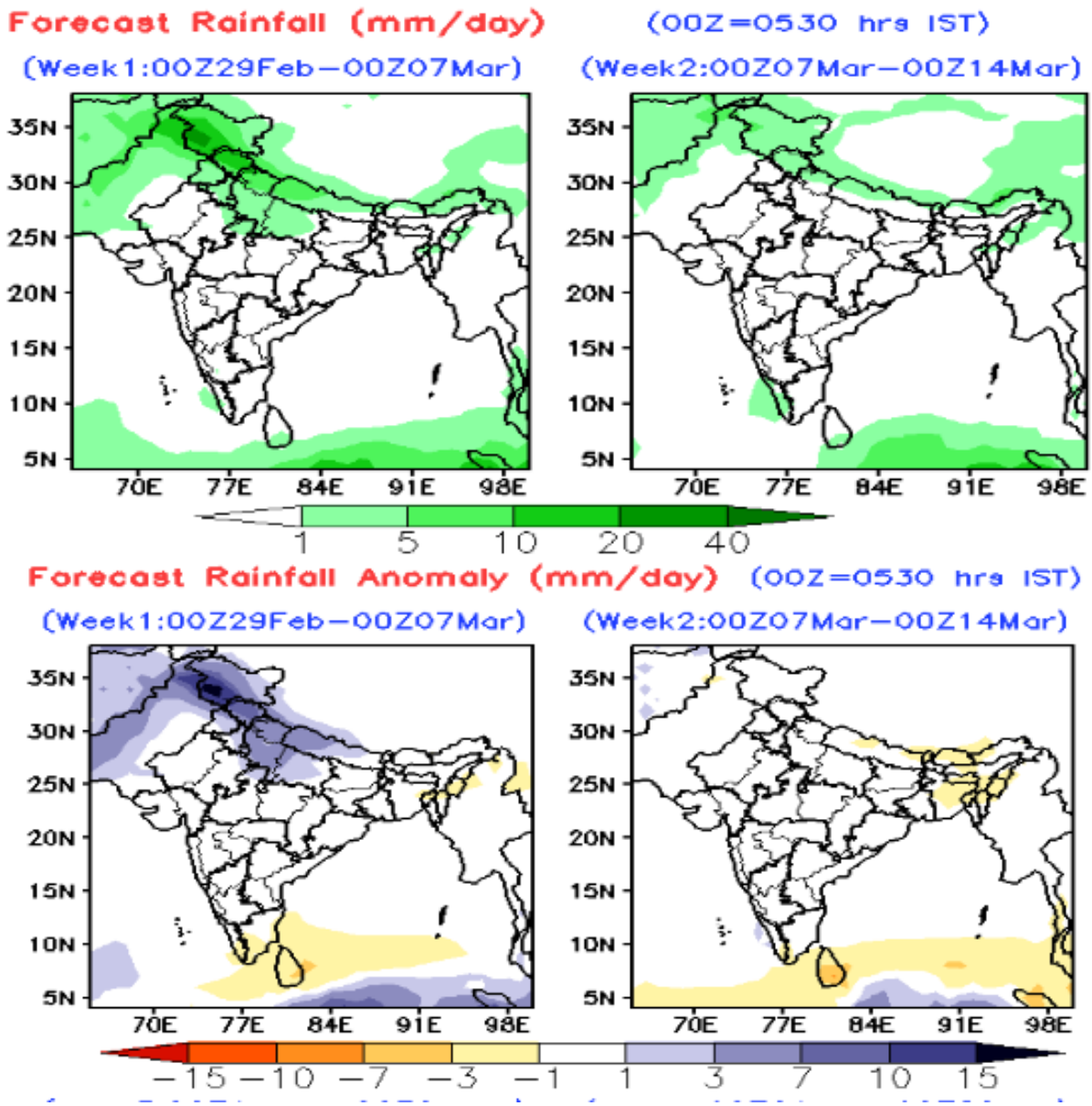
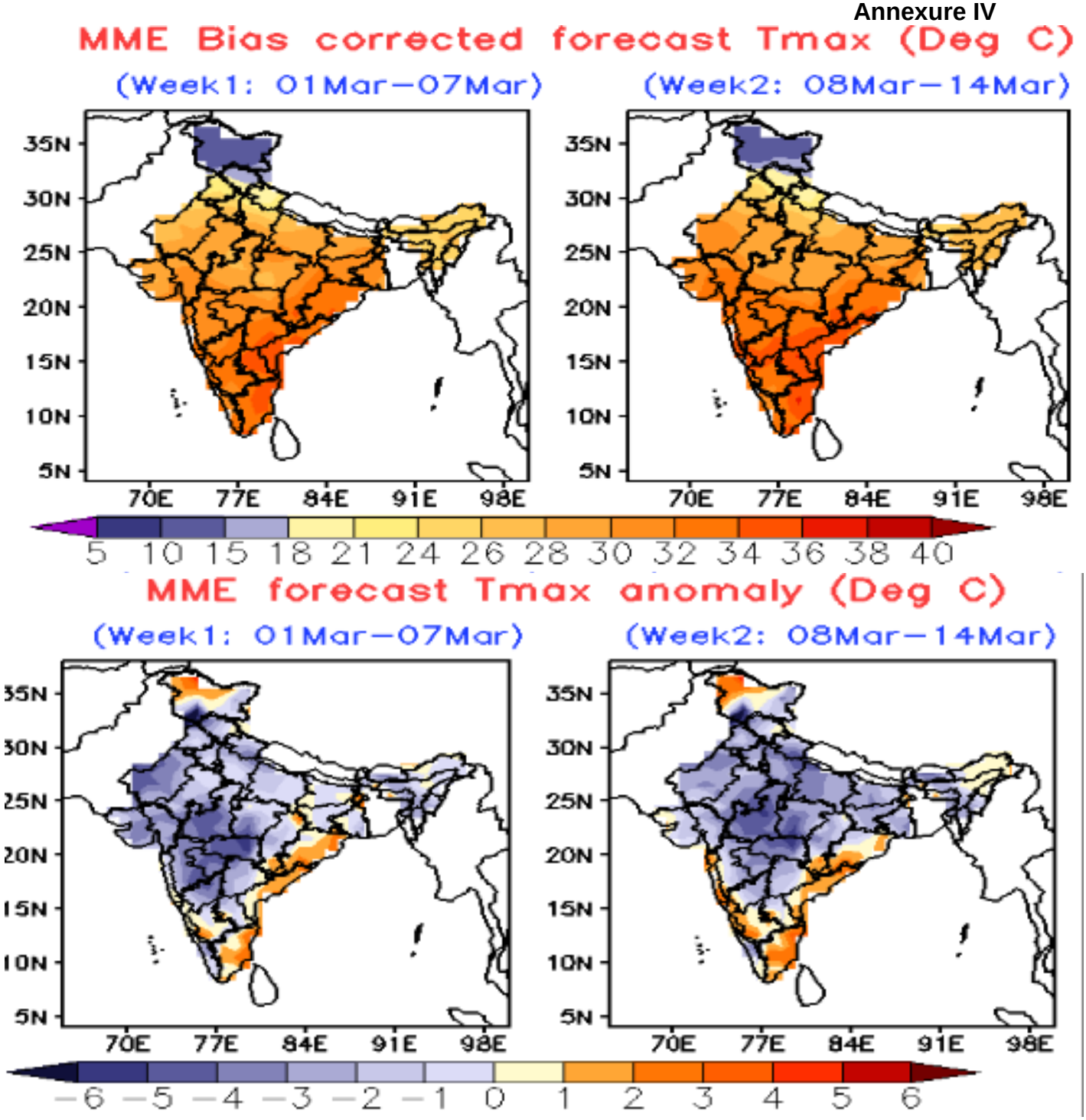
HYDROMET DIVISION, NEW DELHI
SUBDIVISION RAINFALL MAP
Period : 01-01-2024 To 28-02-2024
N
120.6 (-47) Jammu and Kashmir and Ladakh 225.5
108.2 (-42) Himachal Pradesh 187.1
16.7 (-65) Punjab 47.4
49.3 (-52) Uttarakhand 101.7
15.8 (-51) Nat. Chd. and Delhi 32.0
17.7 (-42) W. Uttar Pradesh 30.5
5.6 (-34) W. Rajasthan 8.5
4.9 (-55) E. Rajasthan 10.9
21.4 (-15) E. Uttar Pradesh 25.2
14.0 (-29) Bihar 19.8
23.4 (-46) Sikkim 43.6
27.7 (-34) Assam and Meghalaya 42.1
101.9 (-23) Arunachal Pradesh 133.1
4.4 (8) NMMT 61.8
37.5 (48) Jharkhand 25.4
28.8 (-2) Gangetic WB 29.3
26.1 (-22) E. Madhya Pradesh 33.4
13.0 (-7) W. Madhya Pradesh 14.0
0.9 (-42) Gujarat Region 1.5
0.3 (-66) Saurashtra and Kutch 0.8
10.5 (-52) Chhattisgarh 21.9
25.3 (1) Odisha 25.1
7.5 (-55) Vidarbha 16.9
16 (-79) Marathawada 6.4
1.5 (-4) Madhya Maharashtra 2.8
4.9 (-8) Konkan and Goa 0.0
1.2 (-93) Telangana 16.0
1.1 (-76) NI Karnataka 4.4
3.7 (-58) Rayalaseema 8.8
8.7 (-3) SI Karnataka 5.7
59.4 (182) Kerala and Mahe 21.1
52.5 (112) TN, Pudu. and Karaikal 24.8
156.8 (508) Lakshadweep 25.8
15.1 (44) A and N Island 80.1
ALL INDIA
Actual Normal % Dep.
27.0 39.8 -32
CATEGORYWISE NO. OF SUBDIVISIONS
LARGE EXCESS 5
EXCESS 3
NORMAL 5
DEFICIENT 17
LARGE DEFICIENT 6
NORAIN 0
Legend
Large Excess [60% or more]
Excess [20% to 59%]
Normal [-19% to 19%]
Deficient [-59% to -20%]
Large Deficient [-99% to -60%]
No Rain [-100%]
No Data
NOTES :
a) RainFall figures are based on operation data.
b) Small figures indicate actual rainfal (mm), while bold figures indicate Normal rainfall (mm).
c) Percentage Departures of rainfall are shown in brackets.

Annexure III



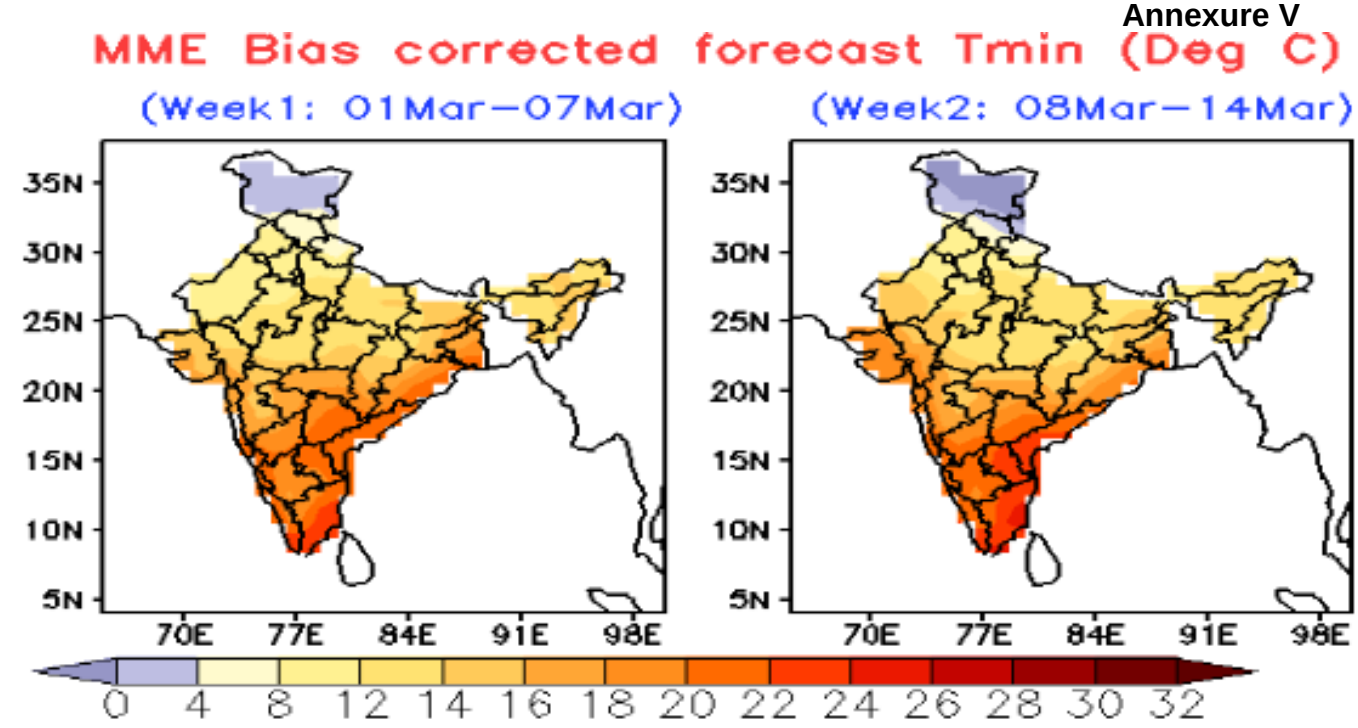
Extended range froecast of weekly dsitirubtion of rainfall in mm per day (top panel) and anomalies (lower panesl) from IMD MME

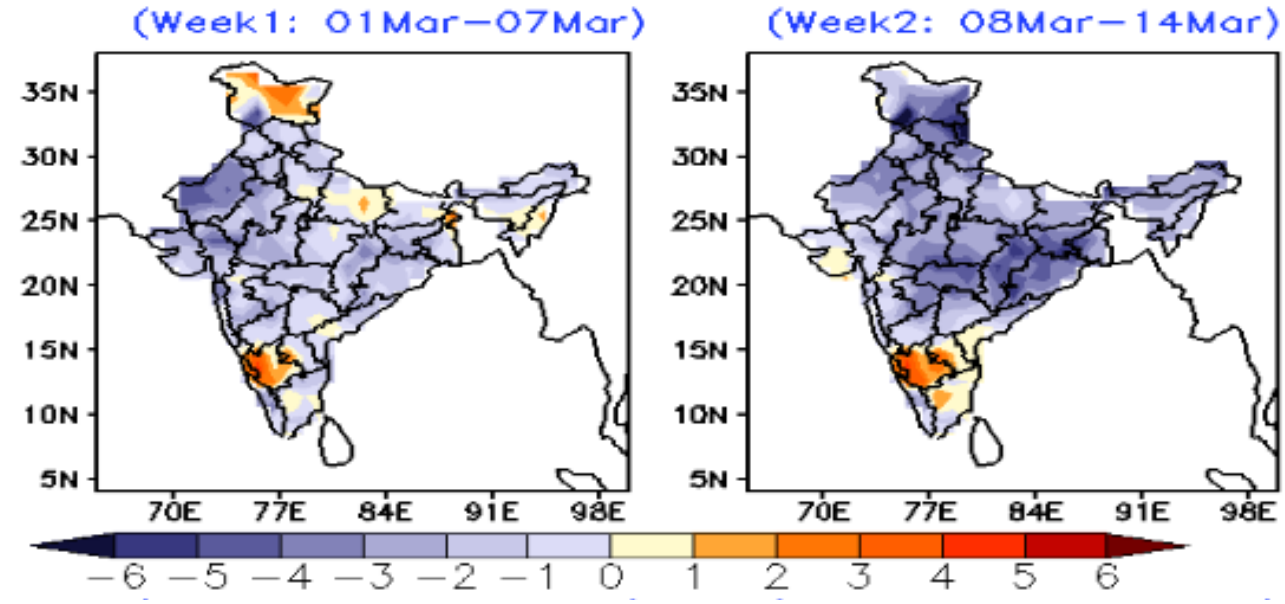
Annexure IV



Extended range froecast of MAXIMUM Tmperature (top panel) and anomalies(lower panesl) from IMD MME

Annexure V





Extended range froecast of Minimum Tmperature (top panel) and anomalies(lower panesl) from IMD MME

Annexure VI

EXTENDED RANGE OUTLOOK FOR HEAT WAVE

Week 1: 01.03.2024 - 07.03.2024

Week 2: 08.03.2024 - 14.03.2024

PROBABILITY OF HEATWAVE	CONFIDENCE
LOW (1-33% PROBABILITY)	
MODERATE (34-67% PROBABILITY)	
HIGH (68-100% PROBABILITY)	