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

Press: Dated: 5th October 2023

Subject: Current Weather Status and Extended range Forecast for next two weeks (5-18 October 2023)

1. Salient Features Observed for week ending on 4th October 2023

- **Formation and movement of twin-low pressure systems during the week i.e. one over west coast from Arabian Sea and another over east coast from Bay of Bengal, have caused heavy to very heavy rainfall over West coast as well as over east central and adjoining parts of east and northeast India respectively;**

1) Under the influence of the cyclonic circulation over north Coastal Karnataka & and neighbourhood, a Low-Pressure Area has formed over Eastcentral Arabian Sea off south Konkan-Goa coasts on morning of 29th September which became a Well Marked Low Pressure Area over the same region, at evening of the same date. It intensified into a Depression over the same region at 0830 hours IST on 30th September, 2023 and lay centred near latitude 15.9°N and longitude 72.8°E about 110 km west-northwest of Panjim (Goa) and 130 km south-southwest of Ratnagiri (Maharashtra); moved nearly northeastwards and crossed south Konkan coast between Panjim (Goa) & Ratnagiri (Maharashtra) during 2030-2230 hours IST of 30th September and then it further moved east-northeastwards gradually and lay centered at 0530 hours IST of 1st October, 2023 over south Konkan, near latitude 17.0 °N and longitude 74.0°E, about 70 km east of Ratnagiri (Maharashtra), 130 km north-northeast of Vengrula (Maharashtra) and 170 km north-northeast of Panjim (Goa). It then weakened into Well Marked Low Pressure Area over south Madhya Maharashtra & neighbourhood at 0830 hrs IST on the same date of 1st October. Thereafter, it further weakened into a Low Pressure Area, over the same region at 0530 hrs IST of morning of 2nd October and then it was less marked at 0830 hrs IST on the same date, but its remnant as

cyclonic circulation lay over central parts of Madhya Maharashtra between 4.5 & 7.6 km above mean sea level on 2nd October which became less marked on 3rd October, 2023.

2) Under the influence of the cyclonic circulation over Myanmar and adjoining Eastcentral Bay of Bengal, another Low-Pressure Area has formed over Northeast & adjoining Eastcentral Bay of Bengal on morning of 29th September and it moved west-northwest wards and became a Well Marked Low Pressure Area over Northwest Bay of Bengal on 30th September 2023. It lay over southeast Jharkhand and adjoining areas of Gangetic West Bengal & north Odisha on 1st October and then weekend into Low Pressure Area and lay over South Jharkhand & neighbourhood with the associated cyclonic circulation extended upto mid tropospheric levels on both the dates of 2nd and 3rd October. On 4th October, it lay over western parts of Gangetic West Bengal & adjoining Jharkhand. **Under the influence of this system also Gangetic West Bengal (Barisha (West Midnapore)-52 cm) reported exceptionally heavy rainfall on 04th October 2023.**

- With further Cessation of rainfall activity from more parts of northwest and adjoin parts of central and western parts of India, Southwest Monsoon has further withdrawn from some parts of Jammu-Kashmir, Himachal Pradesh and Uttarakhand; entire Punjab and Haryana-Chandigarh-Delhi; some parts of West Uttar Pradesh, West Madhya Pradesh and East Rajasthan and some more parts of West Rajasthan on 30th September, 2023. The line of withdrawal of Southwest Monsoon passed through Gulmarg, Dharamshala, Pantnagar, Etawah, Morena, Sawai Madhopur, Jodhpur, Barmer and 25.7°N/70.3°E on 30th September 2023. It was further withdrawn from some more parts of Uttarakhand, West Uttar Pradesh, & West Madhya Pradesh; remaining parts of Rajasthan, and some parts of Gujarat state on 3rd October. The line of withdrawal of Southwest Monsoon now passed through Gulmarg, Dharamshala, Mukteshwar, Pilibhit, Orai, Ashoknagar, Indore, Baroda and Porbandar on 3rd & 4th October, 2023. **(Fig. 1)**

- **Analysis of Weekly overall Rainfall distribution during the week ending on 04th October 2023**

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 04th October was 67% over East & Northeast India and 43% over central India while over northwest India had -20% and south Peninsular India had got -8%.

All India Seasonal cumulative rainfall % departure during this year's monsoon Season's **Rainfall** during **1st June to 30th September 2023** is -6%. 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 the week and the season are given in Annex I and II respectively.

Table 1: Rainfall status (Week and season)

Category of the rainfall	WEEK				SEASON			
	28.09.2023 TO 04.10.2023				01.06.2023 TO 30.09.2023			
	Number of Sub-divisions		Sub-divisional % Area of Country		Number of Sub-divisions		Sub-divisional % Area of Country	
LE-LARGE EXCESS (+60% or more)	11		24%		0		0%	
E-EXCESS (+20% to +59%)	2		4%		3		9%	
N-NORMAL (+19% to -19%)	3		9%		26		73%	
D-DEFICIENT (-20% to -59%)	12		40%		7		18%	
LD-LARGE DEFICIENT (-60% to -99%)	6		20%		0		0%	
NR-NO RAIN (-100%)	2		3%		0		0%	
Cumulative rainfall (mm)	Actual (mm)	Normal (mm)	Departure (%)	Category	Actual (mm)	Normal (mm)	Departure (%)	Category
EAST & NORTH-EAST INDIA	74.7	44.6	+67%	LE	1115	1367.3	-18%	N
NORTH-WEST INDIA	6	7.6	-20%	D	593	587.6	+1%	N
CENTRAL INDIA	33.6	23.4	+43%	E	981.7	978	0%	N
SOUTH PENINSULA	38	41.4	-8%	N	659	716.2	-8%	N
Country as a whole	32.5	25.5	+28%	E	820	868.6	-6%	N

2. Large scale features

- Currently, El Niño conditions are prevailing over the equatorial Pacific region. The latest MMCFS forecast indicates that the El Niño conditions are likely to continue during the upcoming season. Other climate models are also indicating the continuation of El Niño conditions during the upcoming season.
- In addition to El Nino-Southern Oscillation (ENSO) conditions over the Pacific, other factors such as

the Indian Ocean SSTs have also some influence on the northeast monsoon. Currently, the Indian Ocean is experiencing positive Indian Ocean Dipole (IOD) conditions, which began in August 2023. The latest MMCFS forecast indicates that the positive IOD conditions are likely to weaken by the end of the year.

- Most of the models are indicating that currently, MJO is in phase 7 with amplitude near 1. It would move to phase 8 and then to phase 1 rapidly, by middle of the week 1 and thereafter, it is likely to move to further east in phase 1 till end of week 1 and then retreat back to phase 8 by end of week 2. Thus, MJO is not conducive for enhancement of convective activity over the Bay of Bengal (BoB) and Arabian Sea during both the weeks

3. Forecast for next two weeks

Forecast for next two weeks

Weather systems & associated Precipitation during Week 1 (05-11 October, 2023) and Week 2 (12- 18 October, 2023)

Weather systems & associated Precipitation during Week 1 (05-11 October, 2023)

Withdrawal of Southwest Monsoon:

- Conditions are becoming favourable for further withdrawal of Southwest Monsoon from remaining parts of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, West Uttar Pradesh, West Madhya Pradesh, Gujarat state; some parts of East Uttar Pradesh, East Madhya Pradesh, Maharashtra during next 2 days.
- The line of withdrawal of Southwest Monsoon passes through Gulmarg, Dharamshala, Mukteshwar, Pilibhit, Orai, Ashoknagar, Indore, Baroda and Porbandar.

Significant Weather features:

- **A Low Pressure Area** lies over western parts of Gangetic West Bengal & neighbourhood. It is very likely to move gradually northeastwards towards Northwest Bangladesh during next 48 hours and become less marked thereafter.
- **A trough** runs from the cyclonic circulation associated with the Low Pressure Area over western parts of Gangetic West Bengal & neighbourhood to East Uttar Pradesh in lower tropospheric levels.
- A fresh Western Disturbance likely to affect Northwest India from the night of 08th October, 2023.

Weather Forecast and Warning during Week 1(05-11 October, 2023):

East India: Rainfall warning: Light/moderate fairly widespread to widespread rainfall/thunderstorm & lightning with **isolated heavy rainfall** very likely over Sub-Himalayan West Bengal & Sikkim on 05th & 06th; Jharkhand, Bihar, Gangetic West Bengal on 05th and over Andaman & Nicobar Islands during 05th to 09th October.

Isolated extremely heavy rainfall very likely over Sub-Himalaya West Bengal and Isolated very heavy rainfall over Sikkim on 05th October.

Northeast India: Light/moderate fairly widespread to widespread rainfall/thunderstorm & lightning with **isolated heavy to very heavy rainfall** very likely over Assam & Meghalaya during 05th-07th; Arunachal Pradesh and Nagaland, Manipur on 05th & 06th October.

Isolated extremely heavy rainfall very likely over Meghalaya on 05th October.

Northwest India: Light/moderate scattered rainfall/thunderstorm & lightning very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand on 09th October.

West & South India: No significant weather over the region during next 5 days.

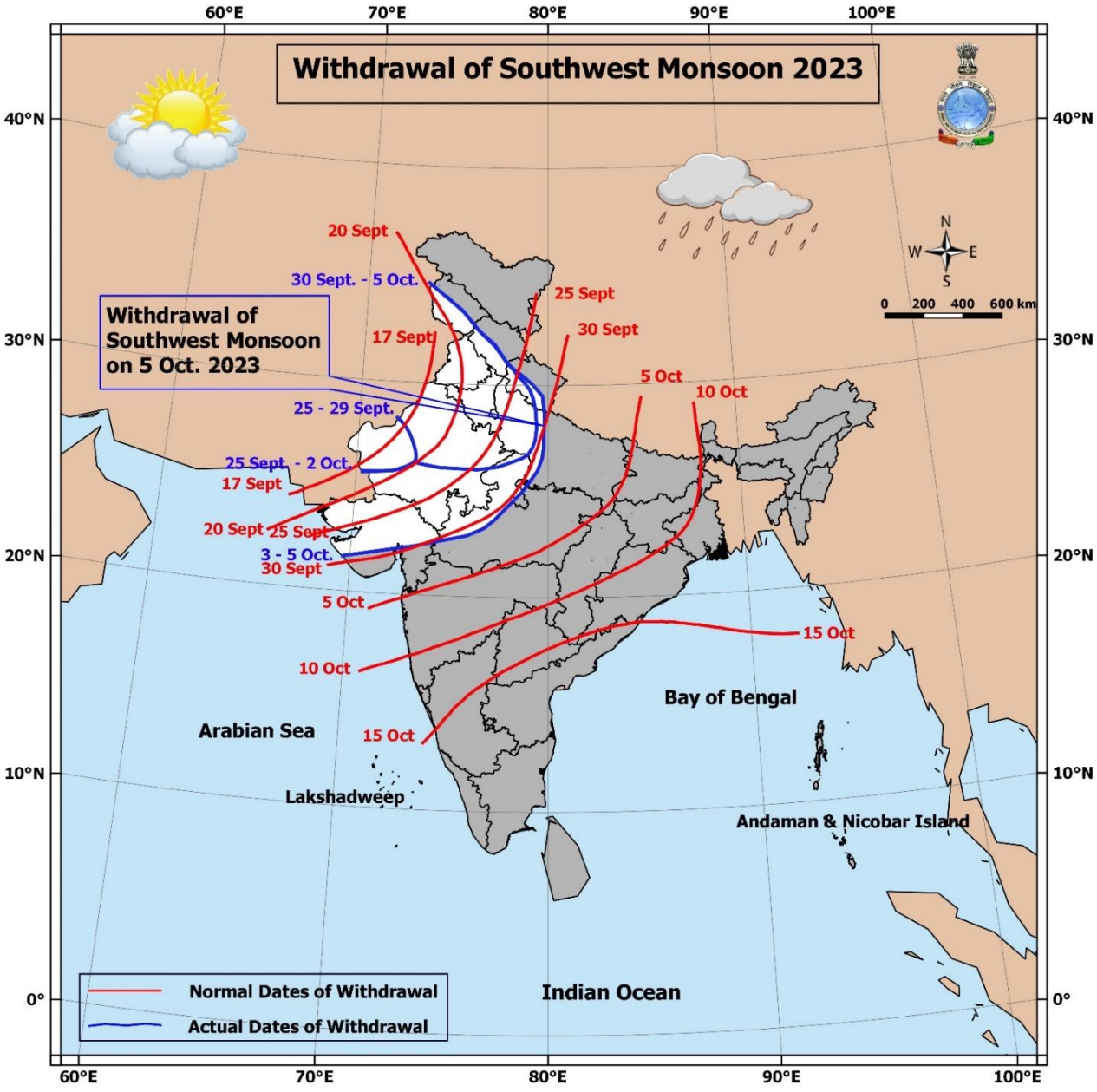
Overall, above normal rainfall activity is likely over Northeast India and below normal/normal rainfall activity likely over rest parts of the country during week 1.

On further Withdrawal of Southwest Monsoon and Rainfall during week 2 (12 to 18 October, 2023):

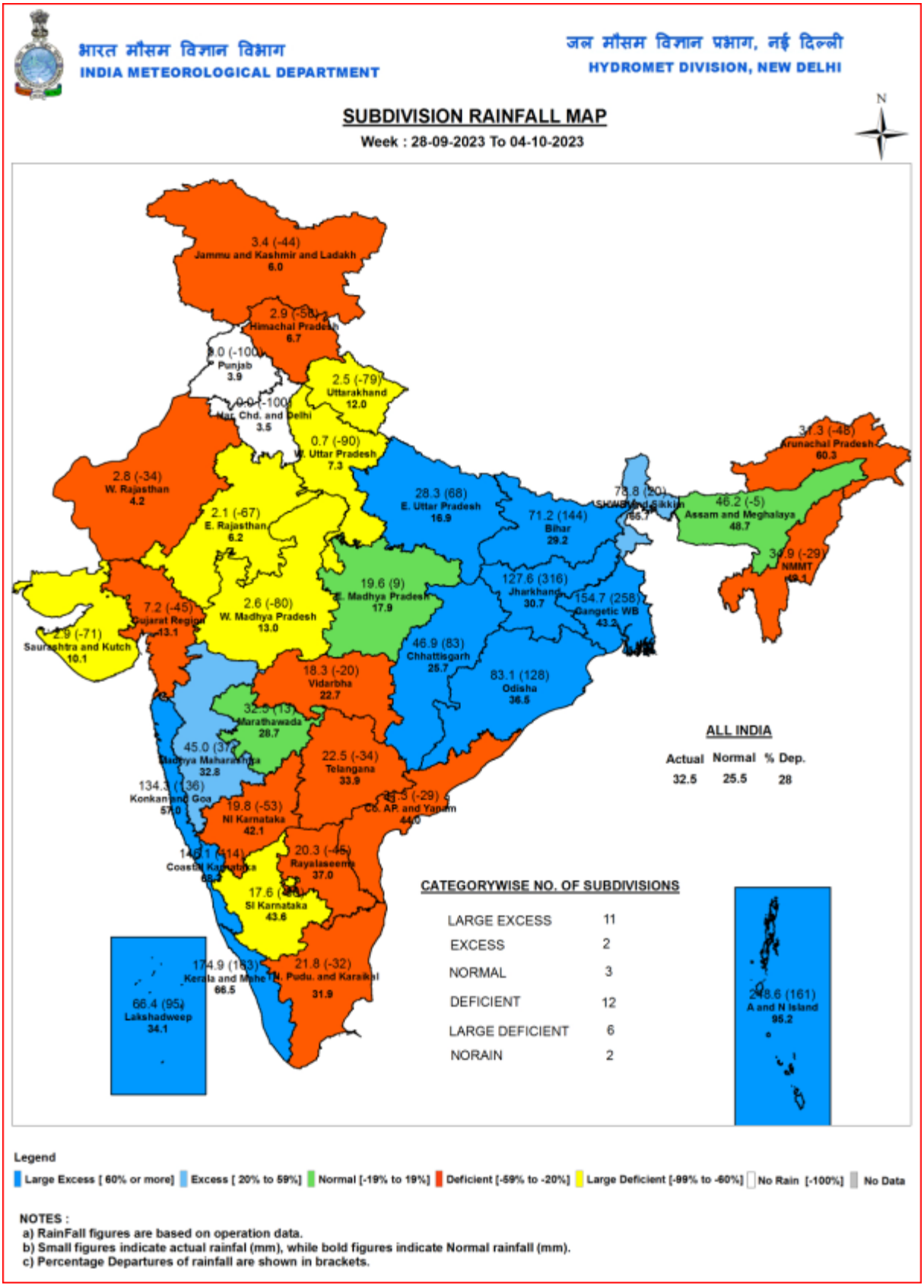
- Conditions likely to become further favourable for further withdrawal of Southwest Monsoon from remaining parts of Maharashtra, Uttar Pradesh and Madhya Pradesh; Some parts of North Peninsular India during the week 2.
- Light to moderate scattered to fairly widespread rainfall activity likely over parts of South Peninsular India, Northeast India and Islands.
- Weather likely to be mainly dry over the plains of Northwest & adjoining Central India except over Western Himalayan Region where isolated rainfall activity is likely during week 2.
- **Overall, above normal rainfall activity is likely over extreme south Peninsular India; below normal over Northeast and Eastcentral India and normal rainfall activity over rest parts of the country during week 2.**

Legends: **Heavy Rain:** 64.5 to 115.5 mm **Very Heavy Rain:** 115.6 to 204.4 mm, **Extremely Heavy Rain**> 204.4 mm

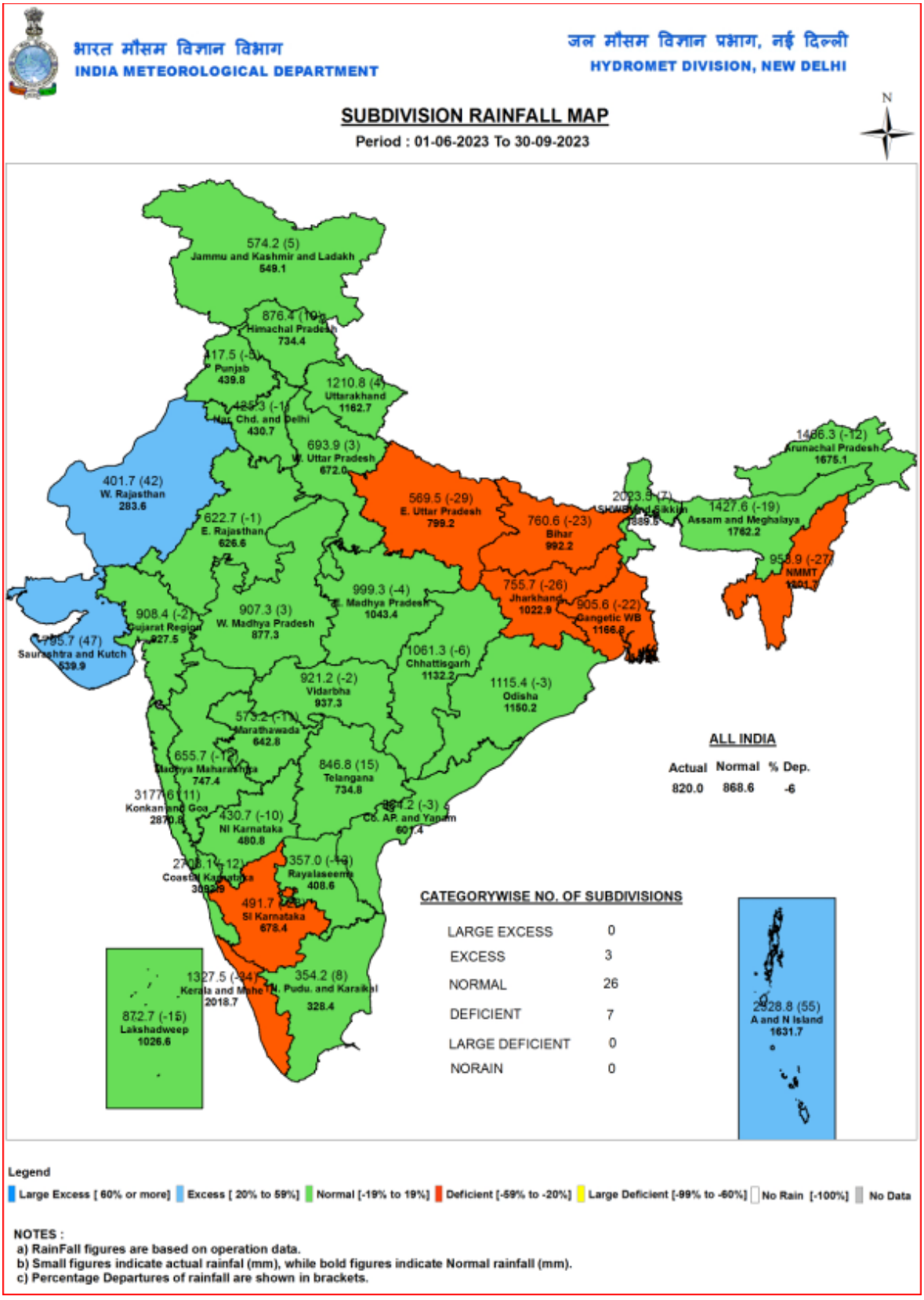
Fig-1 **The line of withdrawal of Southwest Monsoon**



Annex: I


भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT
जल मौसम विज्ञान प्रभाग, नई दिल्ली
HYDROMET DIVISION, NEW DELHI
SUBDIVISION RAINFALL MAP
Week : 28-09-2023 To 04-10-2023
N
3.4 (-44)
Jammu and Kashmir and Ladakh
6.0
2.9 (-58)
Himachal Pradesh
6.7
0.0 (-100)
Punjab
3.9
2.5 (-79)
Uttarakhand
12.0
0.0 (-100)
Har. Chd. and Delhi
3.5
0.7 (-90)
W. Uttar Pradesh
7.3
2.8 (-34)
W. Rajasthan
4.2
2.1 (-67)
E. Rajasthan
6.2
28.3 (68)
E. Uttar Pradesh
16.9
71.2 (144)
Bihar
29.2
73.8 (20)
Sikkim
46.2 (-5)
Assam and Meghalaya
48.7
37.3 (-48)
Arunachal Pradesh
60.3
36.9 (-29)
NMMT
49.1
19.6 (9)
E. Madhya Pradesh
17.9
127.6 (316)
Jharkhand
30.7
154.7 (258)
Gangetic WB
43.2
7.2 (-45)
Gujarat Region
13.1
2.6 (-80)
W. Madhya Pradesh
13.0
2.9 (-71)
Saurashtra and Kutch
10.1
46.9 (83)
Chhattisgarh
25.7
83.1 (128)
Odisha
36.5
18.3 (-20)
Vidarbha
22.7
32.5 (13)
Marathawada
28.7
45.0 (37)
Madhya Maharashtra
32.8
22.5 (-34)
Telangana
33.9
134.3 (36)
Konkan and Goa
57.0
19.8 (-53)
NI Karnataka
42.1
43.3 (-29)
Co. AP. and Yanam
44.0
146.1 (414)
Coastal Karnataka
20.3 (-45)
Rayalaseema
37.0
17.6 (
SI Karnataka
43.6
174.9 (183)
Kerala and Mahe
66.5
21.8 (-32)
TN. Pudu. and Karaikal
31.9
66.4 (95)
Lakshadweep
34.1
248.6 (161)
A and N Island
95.2
ALL INDIA
Actual Normal % Dep.
32.5 25.5 28
CATEGORYWISE NO. OF SUBDIVISIONS
LARGE EXCESS 11
EXCESS 2
NORMAL 3
DEFICIENT 12
LARGE DEFICIENT 6
NORAIN 2
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.

Annex II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INDIA METEOROLOGICAL DEPARTMENT
जल मौसम विज्ञान प्रभाग, नई दिल्ली
HYDROMET DIVISION, NEW DELHI
SUBDIVISION RAINFALL MAP
Period : 01-06-2023 To 30-09-2023
N
574.2 (5)
Jammu and Kashmir and Ladakh
549.1
876.4 (10)
Himachal Pradesh
734.4
417.5 (-3)
Punjab
439.8
1210.8 (4)
Uttarakhand
1162.7
425.3 (-1)
Nor. Chd. and Delhi
430.7
693.9 (3)
W. Uttar Pradesh
672.0
401.7 (42)
W. Rajasthan
283.6
622.7 (-1)
E. Rajasthan
626.6
569.5 (-29)
E. Uttar Pradesh
799.2
760.6 (-23)
Bihar
992.2
2023.9 (7)
Sikkim and Sakkim
1889.6
1427.6 (-19)
Assam and Meghalaya
1762.2
1486.3 (-12)
Arunachal Pradesh
1675.1
958.9 (-27)
NMMT
1321.7
999.3 (-4)
E. Madhya Pradesh
1043.4
907.3 (3)
W. Madhya Pradesh
877.3
908.4 (-2)
Gujarat Region
927.5
755.7 (-26)
Jharkhand
1022.9
905.6 (-22)
Gangetic WB
1166.8
795.7 (47)
Saurashtra and Kutch
539.9
1061.3 (-6)
Chhattisgarh
1132.2
1115.4 (-3)
Odisha
1150.2
921.2 (-2)
Vidarbha
937.3
573.2 (-1)
Marathawada
642.8
655.7 (-1)
Madhya Maharashtra
747.4
846.8 (15)
Telangana
734.8
3177.6 (11)
Konkan and Goa
2870.8
891.2 (-3)
Cst. AP. and Yanam
921.4
430.7 (-10)
NI Karnataka
480.8
2708.1 (-12)
Coastal Karnataka
3082.9
357.0 (-13)
Rayalaseema
408.6
491.7 (-28)
SI Karnataka
678.4
1327.5 (-34)
Kerala and Mahe
2018.7
354.2 (8)
TN. Pudu. and Karaikal
328.4
872.7 (-15)
Lakshadweep
1026.6
2928.8 (55)
A and N Island
1631.7
ALL INDIA
Actual Normal % Dep.
820.0 868.6 -6
CATEGORYWISE NO. OF SUBDIVISIONS
LARGE EXCESS 0
EXCESS 3
NORMAL 26
DEFICIENT 7
LARGE DEFICIENT 0
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 :
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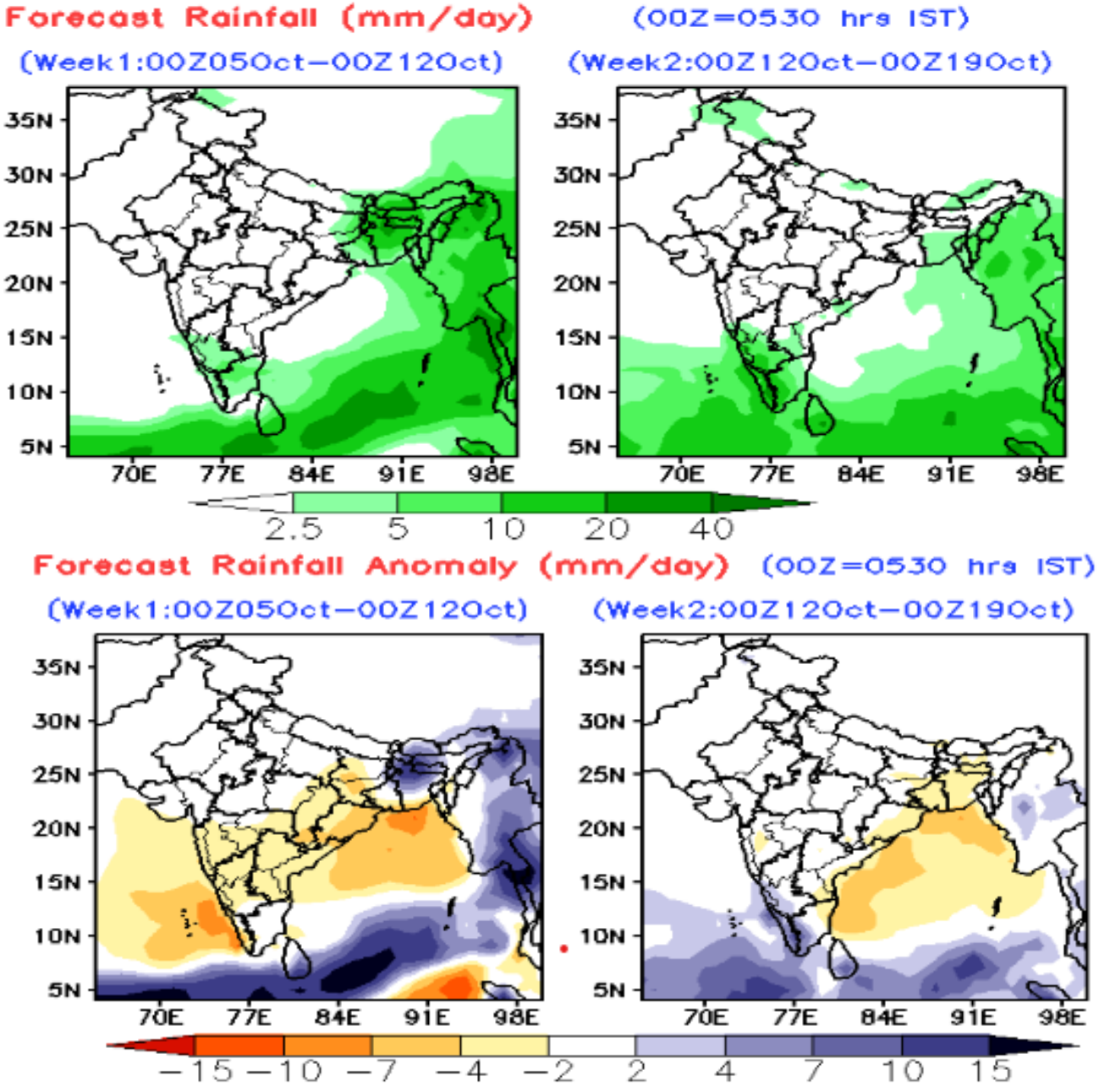
Annexure III



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