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

Press: Dated: 22 June, 2023

Subject: Current Weather Status and Extended range Forecast for next two weeks (22 June-5 July 2023)

1. Salient Observed Features for week ending on 21 June 2023

- **Further Advance of Southwest Monsoon till 21 June 2023:** The Southwest Monsoon has further advanced into some more parts of Karnataka, Andhra Pradesh, Westcentral & Northwest Bay of Bengal; some parts of Gangetic West Bengal and Jharkhand; some more parts of Bihar and remaining parts of Sub-Himalayan West Bengal & Sikkim **on 19th June 2023**.The Northern Limit of Monsoon (NLM) passed through Lat. 17.0°N/ Long. 60°E, Lat. 17°N/ Long. 65°E, Lat. 17°N/ Long. 70°E, Ratnagiri, Koppal, Puttaparthi, Shriharikota, Lat. 15.0°N/ Long. 83.0°E, Lat.18.0°N/Long.87.0°E, Lat.22°N/Long.89.5°E, Malda, Forbesganj, Lat.28°N/Long.86°E from the beginning of the week till 18th June 2023; it passed through Lat. 17.0°N/ Long. 60°E, Lat. 17°N/ Long. 65°E, Lat. 17°N/ Long. 70°E, Ratnagiri, Raichur, Kavali, Lat. 18°N/ Long. 85°E, Lat. 20.5°N/Long. 87.5°E, Canning, Sriniketan, Dumka, Lat. 26.5°N/ Long. 87°E and Lat. 28°N/ Long. 86°E **on 19th June 2023 and remained the same till the end of the week (i.e. till 21 June)(refer Annex I).**
- **Very Severe Cyclonic Storm** "Biparjoy" (pronounced as "Biporjoy") over Northeast Arabian Sea moved nearly northeastwards and crossed North Gujarat and adjoining Pakistan coasts between Mandvi (Gujarat) and Karachi (Pakistan), close to Jakhau Port (Gujarat) near Latitude 23.28°N and Longitude 68.56°E between 2230 and 2330 hours IST of 15th June, 2023 as a Very Severe Cyclonic Storm with a maximum sustained wind speed of 115-125 kmph gusting to 140 kmph; after crossing, it weakened into a **Severe Cyclonic Storm** and lay centered at 2330 hours IST of 15th June, 2023 over Saurashtra & Kutch, about 10 km north of Jakhau Port (Gujarat) and 30 km west-northwest of Naliya; moving east-

northeastwards, it weakened into a **Cyclonic Storm** in the morning of the next day and lay centered at 0830 hours IST of 16th June, 2023 over Saurashtra & Kutch, about 30 km west-northwest of Bhuj; then moving nearly northeastwards, it weakened further into a **Deep Depression** around midnight of that day and lay centered at 2330 hours IST of 16th June, 2023 over southeast Pakistan and adjoining southwest Rajasthan and Kutch, about 100 km northeast of Dholavira, 140 km west-northwest of Deesa and 130 km south-southwest of Barmer; moving northeastwards/ east-northeastwards, it further weakened into a **Depression** in the evening of the next day and lay centered at 1730 hours IST of 17th June, 2023 over south Rajasthan and adjoining north Gujarat, about 30 km north-northwest of Jalore and 90 km south-southwest of Jodhpur; it maintained the intensity of Depression on 18th and moved across south Rajasthan but weakened into a **Well Marked Low pressure** area and lay over central parts of northeast Rajasthan and neighbourhood in the morning of 19th. Then, its remnant moved to central parts of Uttar Pradesh as a Low pressure area towards the end of the week with the associated cyclonic circulation extending upto middle tropospheric level.

- **Under the influence of the Very Severe Cyclonic Storm and its remnants**, fairly widespread to widespread rainfall/thunderstorm activity had been reported over Gujarat State during 15-18 June along with heavy to very heavy and extremely heavy rainfall over both Saurashtra & Kutch and Gujarat Region on one or two days; as the remnants of the system moved inland, it caused severe weather over parts of Northwest India and weather activity had been more intense over Rajasthan; accordingly, fairly widespread to widespread rainfall/thunderstorm activity had been reported over Rajasthan during 17-20 along with heavy to very heavy rainfall reported over the areas on all these days; extremely heavy rainfall also had been reported over West and East Rajasthan on two days each during the same period; under the influence of the remnants, fairly widespread rainfall activity had occurred over Uttar Pradesh on one or two days towards the end of the week along with heavy to very heavy rainfall activity over these areas during the same period and isolated extremely heavy rainfall over East Uttar Pradesh on 20 and 21 June 2023; under their influence, remaining areas of Northwest India and adjoining areas of Madhya Pradesh also received isolated to scattered rainfall/thunderstorm activity during the week along with isolated heavy to very heavy rainfall activity over West Madhya Pradesh on one or two days and isolated heavy rainfall activity over Uttarakhand on a single day; isolated hailstorm activity also had been reported over Uttarakhand on one day along with.
- **Convergence of strong southerlies/southwesterlies from Bay of Bengal** over to the areas had caused widespread rainfall/thunderstorm activity over Northeast India and adjoining Sub Himalayan West

Bengal & Sikkim throughout the week; trough in westerlies in the lower tropospheric levels from east Bihar/Sub Himalayan West Bengal to North Bay of Bengal also supported moisture incursion over to the areas during the first half of the week thus contributing towards the rainfall activity; **heavy to very heavy rainfall activity had been reported over Assam & Meghalaya throughout the week along with extremely heavy rainfall activity over the same areas on most of the days** whereas heavy to very heavy rainfall activity had been reported over Sub-Himalayan West Bengal & Sikkim on most of the days along with extremely heavy rainfall activity over the same areas on two to three days; heavy rainfall activity had been reported over remaining parts of Northeast India on four to five days along with heavy to very heavy rainfall activity on a single day.

- **During all dates of the week ending on 21 June, Heat Wave/Severe Heat Wave** conditions prevailed over East Uttar Pradesh, East Madhya Pradesh, Bihar, Chhattisgarh and interior parts of Odisha, western parts of Jharkhand, Telangana & Coastal Andhra Pradesh and Vidarbha. It was abated today on 22 June due to clouding and rainfall activities over many parts of these areas. Heat wave also reported from isolated pockets of Gangetic West Bengal during the week till 18 June and abated thereafter. **With this, heat wave abated from entire India on 22 June 2023**
- The highest maximum temperature of **46.0^{o}C** had been recorded at **Sambalpur (Odisha)** on **18th June 2023** and the lowest minimum temperature of **15.5^{o}C** had been recorded at **Itanagar (Arunachal Pradesh)** on **17th June 2023** over **t**he plains of the country during the week.
- **Analysis of Weekly overall Rainfall distribution during the week ending on 21 June 2023 and monsoon Season's Rainfall Scenario (1 -21 June 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 21 June 2023 was -6%, over south Peninsula as -63%, central India as -47% **while northwest India had +108 %.** All India Seasonal cumulative rainfall % departure during this year's **monsoon Season's Rainfall** for the period **1-21 June 2023** is -33% and over northwest India, it is +37%. 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 II and III respectively.

Table 1: Rainfall status (Week and season)

Region	WEEK			SEASON		
	15.06.2023 TO 21.06.2023			01.06.2023 TO 21.06.2023		
	Actual	Normal	% Dep	Actual	Normal	% Dep
EAST & NORTH-EAST INDIA	108.3	83.1	+30%	171	207.6	-18%
NORTH-WEST INDIA	38.9	18.7	+108%	57.7	42	+37%
CENTRAL INDIA	25.3	47.9	-47%	38	94.3	-60%
SOUTH PENINSULA	14.9	40.2	-63%	46.2	108.9	-58%
Country as a whole	40.7	43.1	-6%	66.9	99.2	-33%

2. Large scale features

- Currently, ENSO-neutral conditions prevailing over the equatorial Pacific region. Also, neutral IOD conditions are present over the Indian Ocean and the latest MMCFS forecast indicates that the neutral IOD conditions are likely to continue during the remaining period of the pre-monsoon season.

- The Madden Julian Oscillation (MJO) Index is currently in Phase 1 with amplitude less than 1. Thereafter, it would move across phase 2 and 3 during week 1 and 4 and 5 during week 2, Hence, MJO is likely to support strongly further the enhancement of current convective activity over both the the Bay of Bengal (BoB) and Arabian Sea (AS) during both week 1 and 2.

3. Forecast for next two week

Weather systems, further advance of Monsoon & associated Precipitation during Week 1 (22-28 June, 2023) and Week 2 (29 June-5 July, 2023)

Forecast for week 1 (22-28 June, 2023):

Advance of Southwest Monsoon (refer Map in Annexure I) as on 22 June 2023: The Southwest Monsoon has further advanced into some parts of Telangana, most parts of Andhra Pradesh, some parts of Odisha, remaining parts of Westcentral Bay of Bengal & some more parts Northwest Bay of Bengal, some more parts of Gangetic West Bengal, Jharkhand and Bihar today, the 22nd June.

The Northern Limit of Monsoon (NLM) now passes through Lat. 16.5°N/ Long. 55°E, Lat. 17.0°N/ Long. 60°E, Lat. 17°N/ Long. 65°E, Lat. 17°N/ Long. 70°E, Ratnagiri, Raichur, Khammam, Malkangiri, Paralakhemundi, Lat. 21.5°N/Long. 87.5°E, Haldia, Bokaro, Patna, Raxaul and Lat. 28°N/ Long. 84°E.

Conditions are favourable for further advance of Southwest Monsoon over some more parts of south Peninsular India, remaining parts of Odisha, Gangetic West Bengal, Jharkhand and Bihar and some parts of Chhattisgarh, Uttar Pradesh, Uttarakhand, Madhya Pradesh during next 2-3 days.

Significant Weather features, further advance of southwest Monsoon, Forecast and Warning for Week 1(22-28 June 2023)

Synoptic system as on 22 June 2023 and further till 28 June 2023

- A **Low Pressure Area** lies over central parts of Uttar Pradesh and likely become less marked during 24-hours

- A trough runs from south Punjab to the cyclonic circulation associated with Low Pressure Area over central parts of Uttar Pradesh and extends upto 1.5 km above mean sea level. **This lower level trough likely to further extends upto Odisha –West Bengal coast off northwest Bay of Bengal by 24 June. At lower levels, easterly winds likely to further strengthen across northern parts of indo-Gangetic plains with higher moisture convergence during 2nd half of the week 1**

- A cyclonic circulation lies over west-central & adjoining Northwest Bay of Bengal off north Andhra Pradesh south Odisha coasts between 3.1 & 5.8 km above mean sea level tilting southwards with height.
- An east-west shear zone now runs roughly along lat. 14°N at 5.8 km above mean sea level.
- **Model consensus shows that "A cyclonic circulation likely to develop over northwest Bay of Bengal off Odisha coast around 26 June. Under its influence a low pressure area likely to develop over the same region around 28 June"**

Under such synoptic features:

Southwest monsoon likely to advance further into some more parts of Peninsular India, Maharashtra and central and north India during 2nd half of the week 1.

Forecast and Warning for Week 1(22-28 June 2023)

- Light to moderate rainfall at some places with isolated heavy to very heavy rainfall is very likely over Uttar Pradesh and north Madhya Pradesh on 22nd June.

Northeast & adjoining East India:

- Light/moderate rainfall at most places with isolated thunderstorm & lightning very likely during next 7 days.
- Isolated **extremely heavy rainfall** likely over west Assam & Meghalaya on 22nd June and isolated **Heavy to Very Heavy falls** over Assam & Meghalaya on 23rd; Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh on 22nd & 23rd and Nagaland on 22nd June. It is likely to be isolated heavy to very heavy rainfall over these areas during 26-28 June
- Isolated **heavy rainfall** also likely over Bihar on 22nd & 23rd; Jharkhand on 22nd; Gangetic West Bengal on 22nd & 25th; and Odisha during 22nd-26th with isolated **Very Heavy falls** over Odisha 23rd -25th June. Rainfall likely increase from 27 June over eastern India and It is likely to be isolated heavy to very heavy over Odisha, south Jharkhand and adjoining areas of Gangetic West Bengal **during 27-28 June**

Northwest India:

- Light/moderate fairly widespread rainfall with isolated thunderstorm & lightning over Himachal Pradesh, Uttarakhand, Uttar Pradesh during 23rd-28th and over plains of Northwest India except west Rajasthan from 25th June. It is likely to be Light rainfall/thunderstorm & lightning at isolated places over west Rajasthan during 27-38 June

- Isolated **heavy/very rainfall** very likely over Uttarakhand during 22nd-26th; Himachal Pradesh during 24th-26th; Punjab, Haryana, Chandigarh and Uttar Pradesh on 25th & 26th June. It is likely to be isolated heavy to very heavy over east Rajasthan and adjoining areas of south Haryana and Punjab, Uttarakhand, Uttar Pradesh **during 27-28 June**

Central India:

- Light/moderate scattered to fairly widespread rainfall with isolated thunderstorm & lightning over the region during next 7 days.
- Isolated **heavy to very rainfall** very likely over Madhya Pradesh during 23rd-26th; Chhattisgarh during 22nd-26th and Vidarbha during 24th-26th June. It is likely to be isolated heavy to very heavy over southern parts of Madhya Pradesh and south Chhattisgarh **during 27-28 June.**

South India:

- Light/moderate scattered to fairly widespread rainfall with isolated thunderstorm & lightning very likely over the region during next 7 days.
- **Isolated Heavy rainfall** also likely over South Interior Karnataka and Rayalaseema on 22nd; Coastal Andhra Pradesh during 22nd-24th, Coastal Karnataka & Telangana during 22nd-26th and Interior Karnataka on 25th & 26th June. . It is likely to be isolated heavy to very heavy over coastal Karnataka and Kerala and telangana **during 27-28 June.**

West India:

- Light/moderate isolated to scattered rainfall with isolated thunderstorm & lightning very likely over Madhya Maharashtra, Marathawada, Gujarat Region during 23rd-25th June and increase thereafter.
- **Isolated Heavy rainfall** also likely over Konkan & Goa during 23rd-26th; over Madhya Maharashtra and Gujarat Region on 25th & 26th June. It is likely to be isolated heavy to very heavy over Konkan & Goa and Gujarat Region on **during 27-28 June.**

Maximum Temperatures and Heat Wave warning during Week 1(22-28 June 2023)

- Fall by 3-5°C in maximum temperatures very likely over Northwest, Central and East India during next 5 days.
- No significant heat wave likely during the week

Rainfall for Week 2 (29 June-5 July, 2023):

- ✓ Light to moderate fairly widespread to widespread rainfall/thunderstorm is likely over west coast and adjoining areas of south Peninsular India during most days of the week. **Isolated heavy to very heavy rainfall is also likely along west coasts of India and Gujarat state** and isolated heavy rainfall over rest of these areas during many dates of the week.

❖ Light to moderate scattered/fairly widespread rainfall/thunderstorm is likely over east & northeast India during the week. **Increase of rainfall over northeast India during the week 2 with isolated heavy to very heavy rainfall over these areas during many days of the week.**

❖ Scattered to fairly widespread rainfall/thundershower is also likely over many parts of northwest India except west Rajasthan during 1st half of the week with reduction thereafter. It is likely to be isolated heavy over east Rajasthan, Uttarakhand, Uttar Pradesh **during 1st half of the week and reduction thereafter**

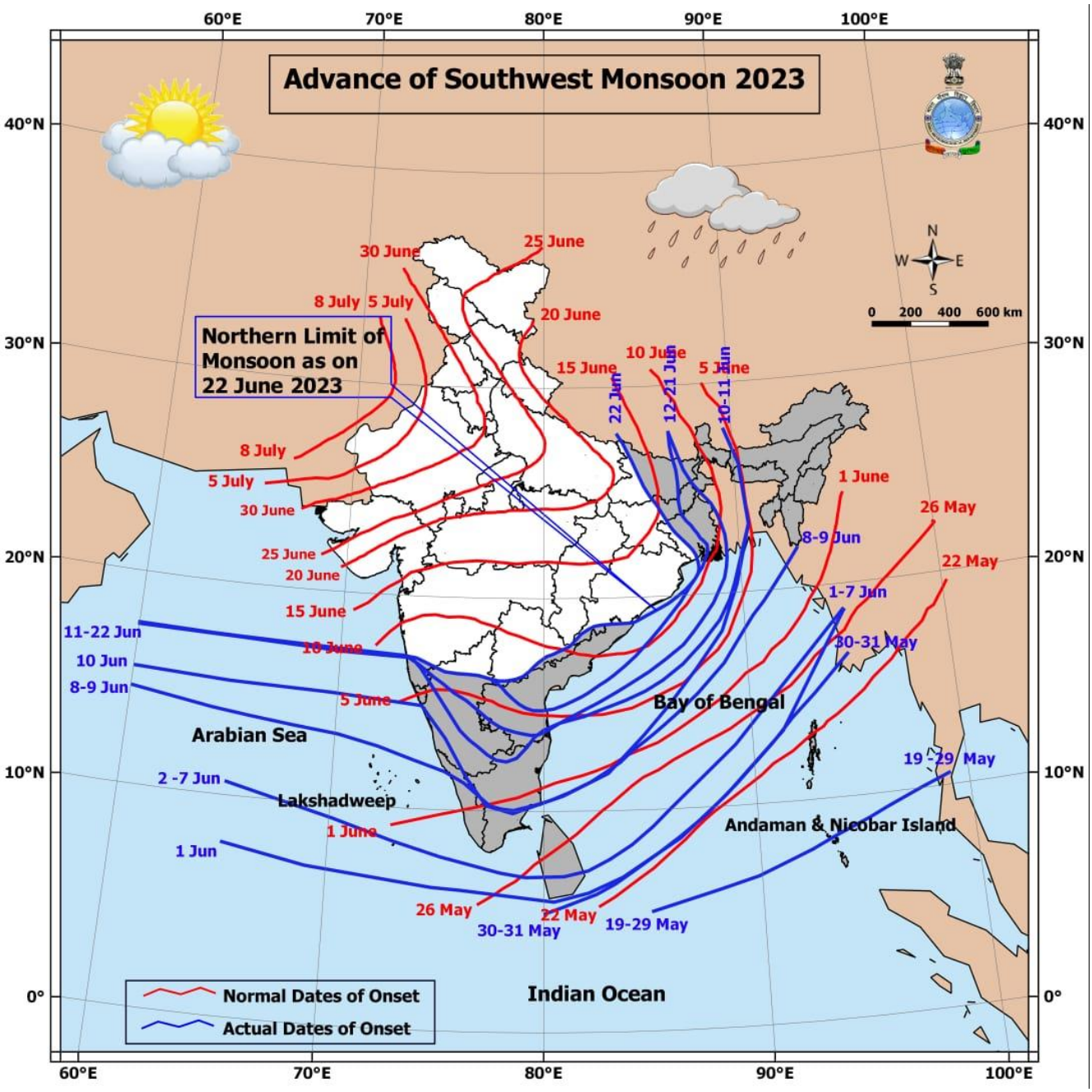
- ✓ **Overall, rainfall activity is likely to be above normal over west coast of India, Gujarat state and adjoining areas of west central India, northeast India; near normal over rest parts of the country outside Western Himalayan region, parts of east central India and soma parts of Andhra Pradesh and Telangana where it is likely to be below normal.**

Maximum Temperature for week 2 (29 June-5 July, 2023):

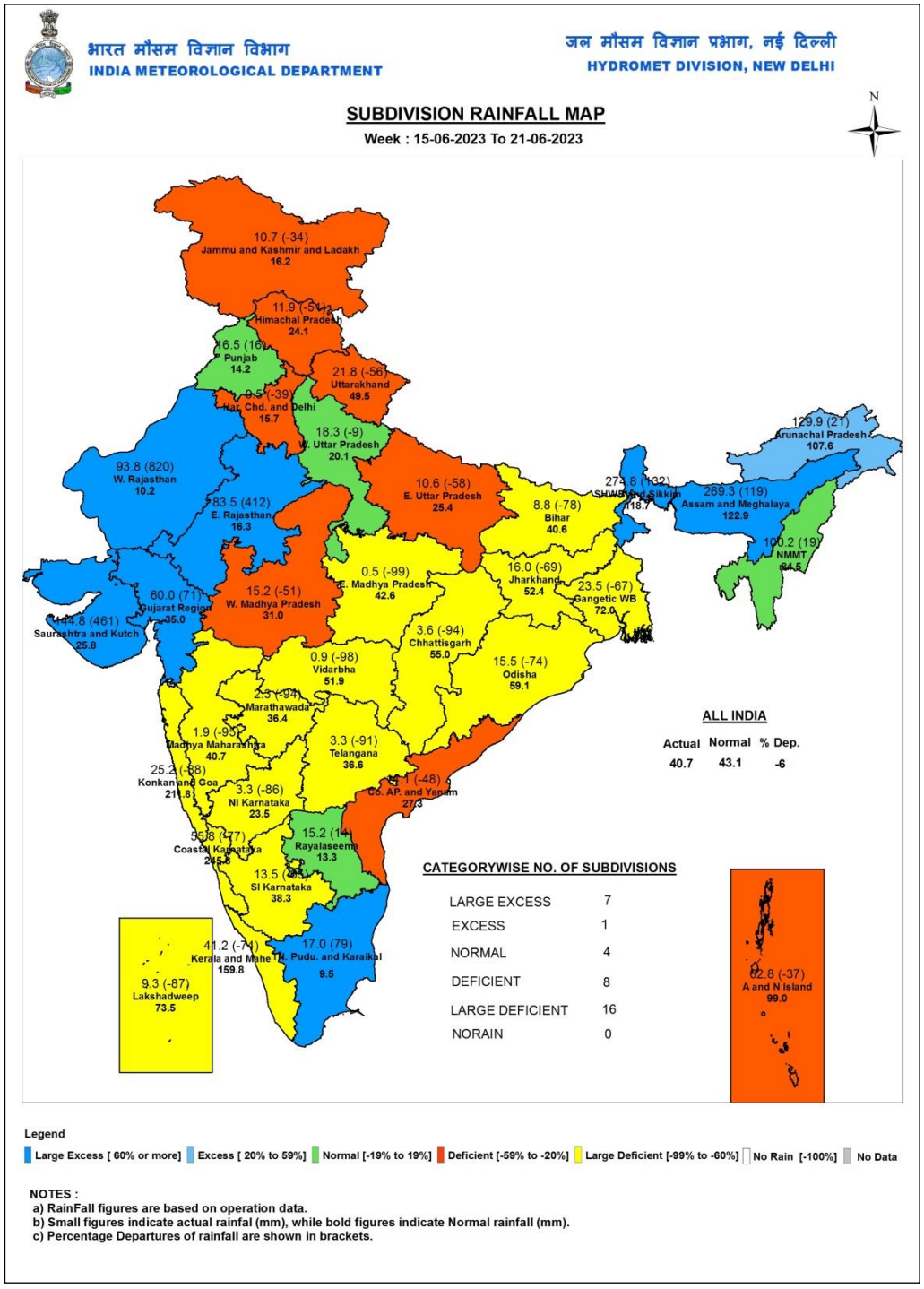
- **No heat wave likely over India during the week 2. However, above normal maximum temperature likely over eastern parts of India, northeast India and along west coast of India.**

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

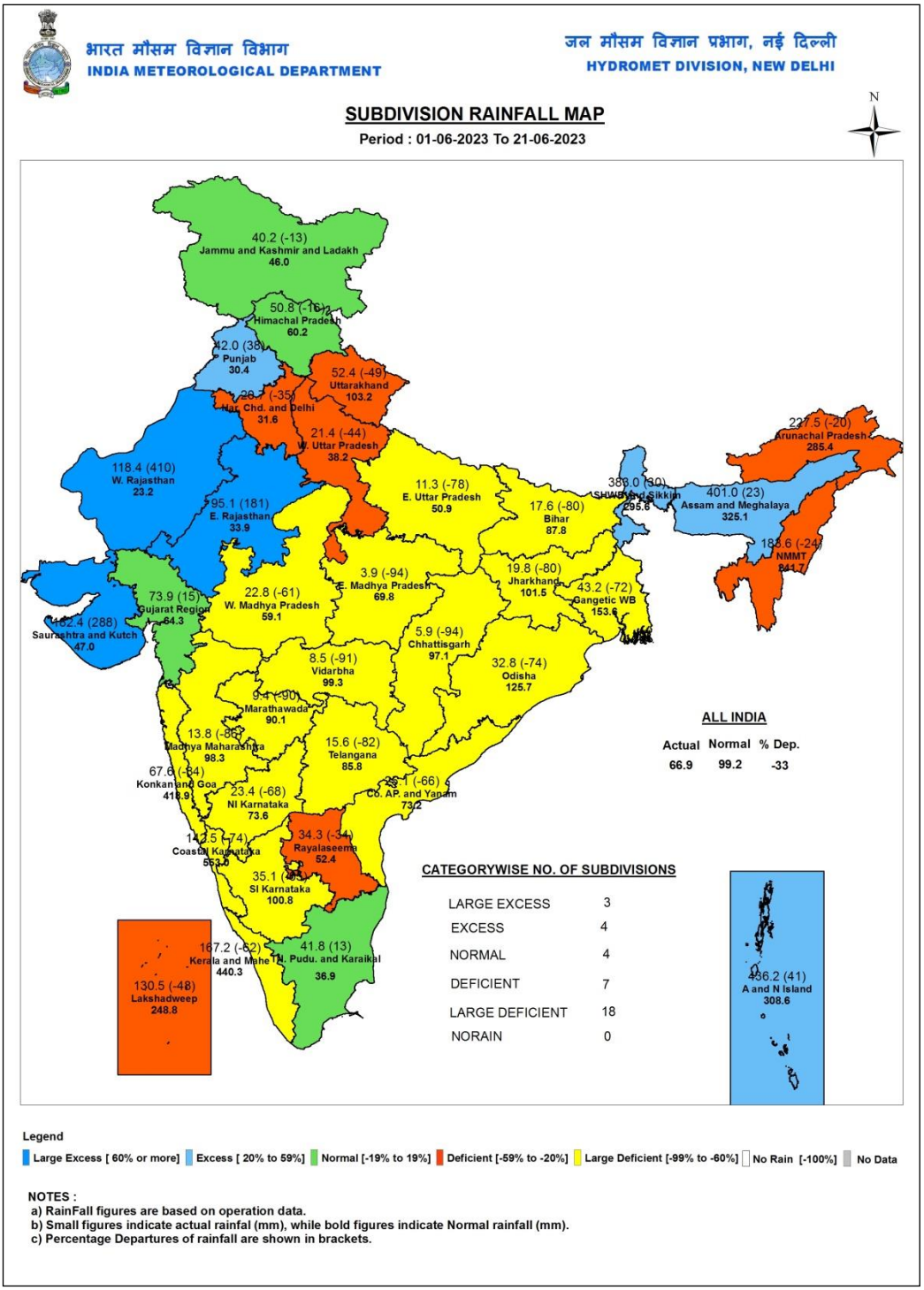
Annex: I


Advance of Southwest Monsoon 2023
Northern Limit of Monsoon as on 22 June 2023
Normal Dates of Onset
Actual Dates of Onset
Arabian Sea
Bay of Bengal
Indian Ocean
Lakshadweep
Andaman & Nicobar Island
0 200 400 600 km
60°E
70°E
80°E
90°E
100°E
40°N
30°N
20°N
10°N
0°

Annex II


भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT
जल मौसम विज्ञान प्रभाग, नई दिल्ली
HYDROMET DIVISION, NEW DELHI
SUBDIVISION RAINFALL MAP
Week : 15-06-2023 To 21-06-2023
N
10.7 (-34)
Jammu and Kashmir and Ladakh
16.2
11.9 (-51)
Himachal Pradesh
24.1
16.5 (16)
Punjab
14.2
21.8 (-56)
Uttarakhand
49.5
0.5 (-39)
Nat. Chd. and Delhi
15.7
18.3 (-9)
W. Uttar Pradesh
20.1
93.8 (820)
W. Rajasthan
10.2
83.5 (412)
E. Rajasthan
16.3
10.6 (-58)
E. Uttar Pradesh
25.4
8.8 (-78)
Bihar
40.6
274.8 (132)
Sikkim
118.7
129.9 (21)
Arunachal Pradesh
107.6
269.3 (119)
Assam and Meghalaya
122.9
100.2 (19)
NMMT
84.5
0.5 (-99)
E. Madhya Pradesh
42.6
16.0 (-69)
Jharkhand
52.4
23.5 (-67)
Gangetic WB
72.0
60.0 (71)
Gujarat Region
35.0
15.2 (-51)
W. Madhya Pradesh
31.0
144.8 (461)
Saurashtra and Kutch
25.8
3.6 (-94)
Chhattisgarh
55.0
0.9 (-98)
Vidarbha
51.9
15.5 (-74)
Odisha
59.1
2.5 (-94)
Marathawada
36.4
1.9 (-95)
Madhya Maharashtra
40.7
3.3 (-91)
Telangana
36.6
25.2 (-88)
Konkan and Goa
211.8
3.3 (-86)
NI Karnataka
23.5
11 (-48)
Co. A.P. and Yanam
27.3
55.8 (-77)
Coastal Karnataka
245.5
15.2 (14)
Rayalaseema
13.3
13.5 (-85)
SI Karnataka
38.3
41.2 (-74)
Kerala and Mahe
159.8
17.0 (79)
N. Pudu. and Karaikal
9.5
9.3 (-87)
Lakshadweep
73.5
82.8 (-37)
A and N Island
99.0
ALL INDIA
Actual Normal % Dep.
40.7 43.1 -6
CATEGORYWISE NO. OF SUBDIVISIONS
LARGE EXCESS 7
EXCESS 1
NORMAL 4
DEFICIENT 8
LARGE DEFICIENT 16
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.

Annex III


भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT
जल मौसम विज्ञान प्रभाग, नई दिल्ली
HYDROMET DIVISION, NEW DELHI
SUBDIVISION RAINFALL MAP
Period : 01-06-2023 To 21-06-2023
N
40.2 (-13)
Jammu and Kashmir and Ladakh
46.0
50.8 (-16)
Himachal Pradesh
60.2
42.0 (38)
Punjab
30.4
52.4 (-49)
Uttarakhand
103.2
28.7 (-35)
Nat. Chd. and Delhi
31.6
21.4 (-44)
W. Uttar Pradesh
38.2
118.4 (410)
W. Rajasthan
23.2
95.1 (181)
E. Rajasthan
33.9
11.3 (-78)
E. Uttar Pradesh
50.9
17.6 (-80)
Bihar
87.8
389.0 (30)
Sub Himd and Sikkim
299.8
227.5 (-20)
Arunachal Pradesh
285.4
401.0 (23)
Assam and Meghalaya
325.1
183.6 (-24)
NMMT
241.7
3.9 (-94)
E. Madhya Pradesh
69.8
19.8 (-80)
Jharkhand
101.5
43.2 (-72)
Gangetic WB
153.6
73.9 (15)
Gujarat Region
64.3
22.8 (-61)
W. Madhya Pradesh
59.1
82.4 (288)
Saurashtra and Kutch
47.0
5.9 (-94)
Chhattisgarh
97.1
8.5 (-91)
Vidarbha
99.3
32.8 (-74)
Odisha
125.7
9.4 (-90)
Marathawada
90.1
13.8 (-86)
Madhya Maharashtra
98.3
15.6 (-82)
Telangana
85.8
67.6 (-84)
Konkan and Goa
418.9
23.4 (-68)
NI Karnataka
73.6
7.1 (-66)
Co. AP. and Yanam
73.2
34.3 (-34)
Rayalaseema
52.4
Coastal Karnataka
35.1
SI Karnataka
100.8
167.2 (-52)
Kerala and Mahe
440.3
41.8 (13)
TN. Pudu. and Karaikal
36.9
130.5 (-48)
Lakshadweep
248.8
436.2 (41)
A and N Island
308.6
ALL INDIA
Actual Normal % Dep.
66.9 99.2 -33
CATEGORYWISE NO. OF SUBDIVISIONS
LARGE EXCESS 3
EXCESS 4
NORMAL 4
DEFICIENT 7
LARGE DEFICIENT 18
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.
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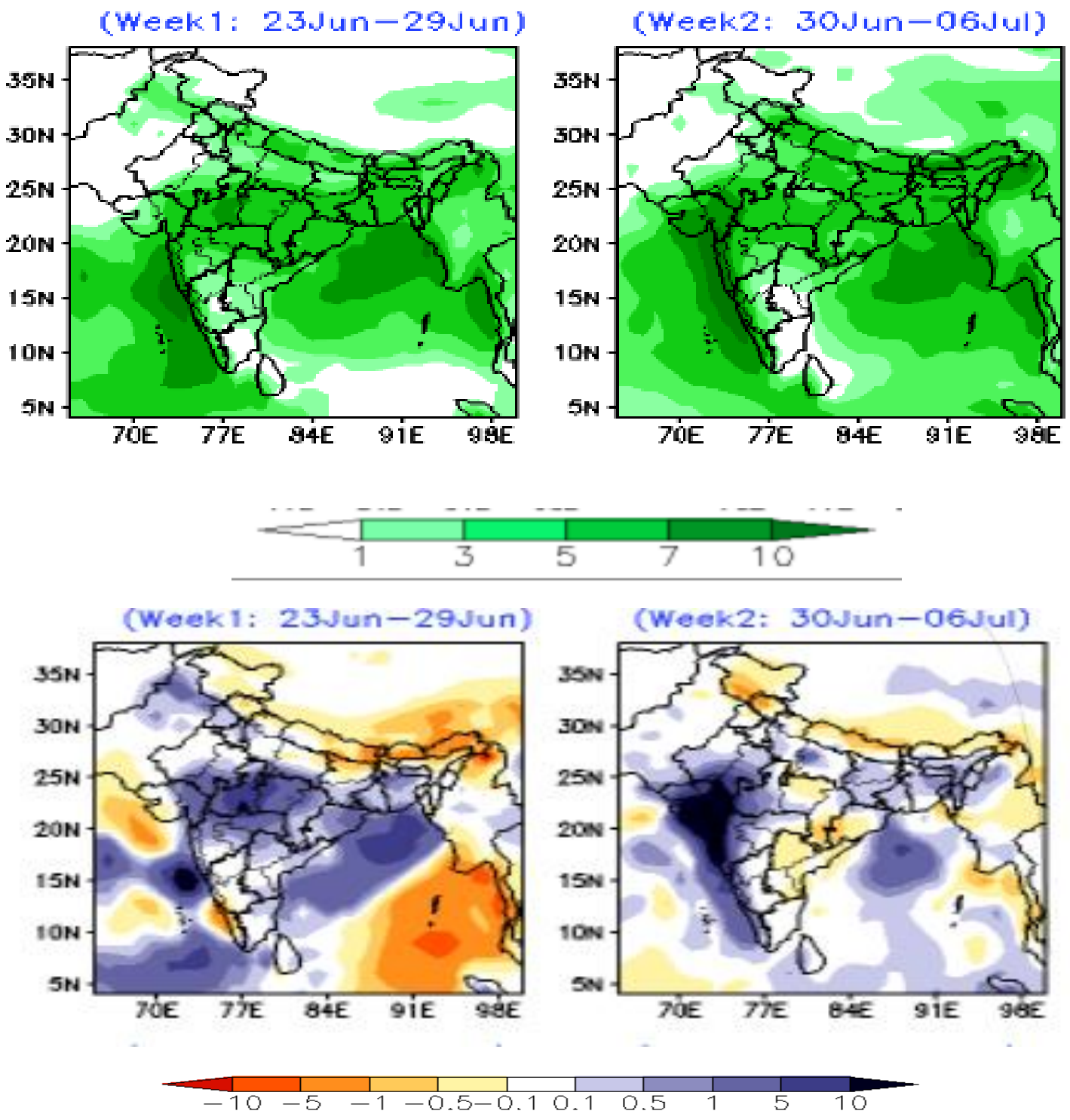
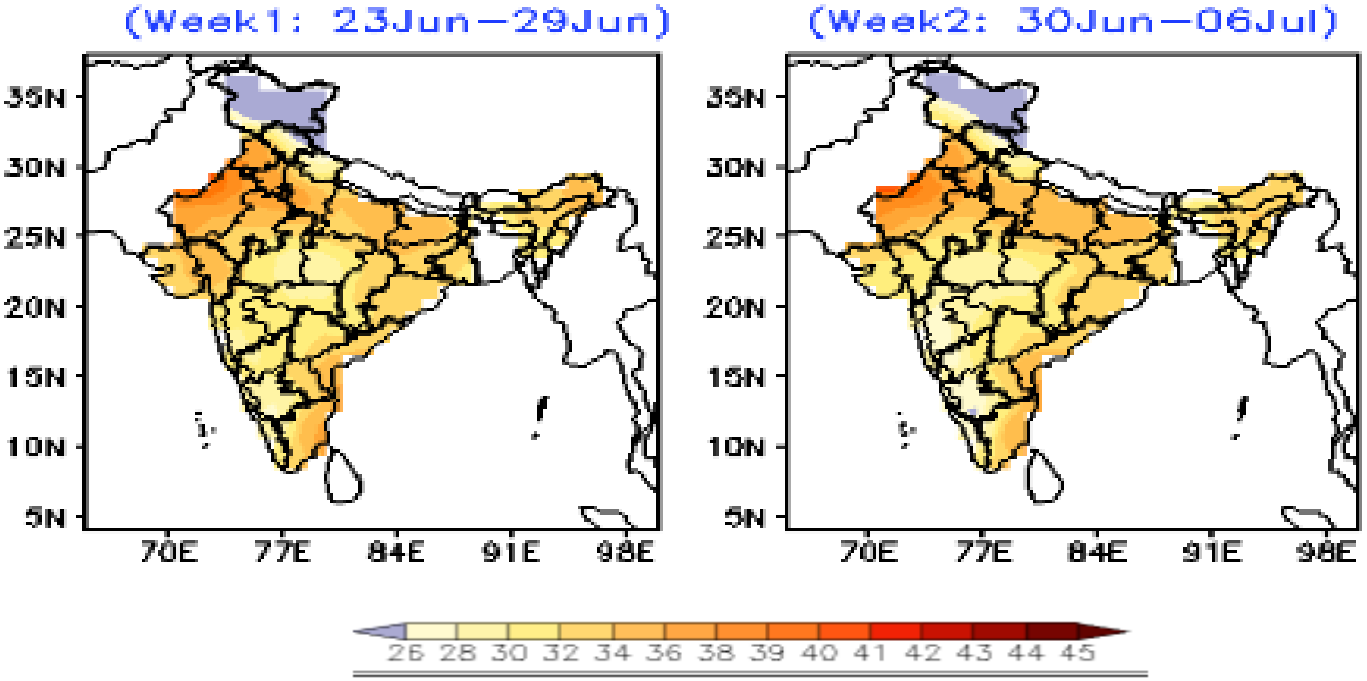
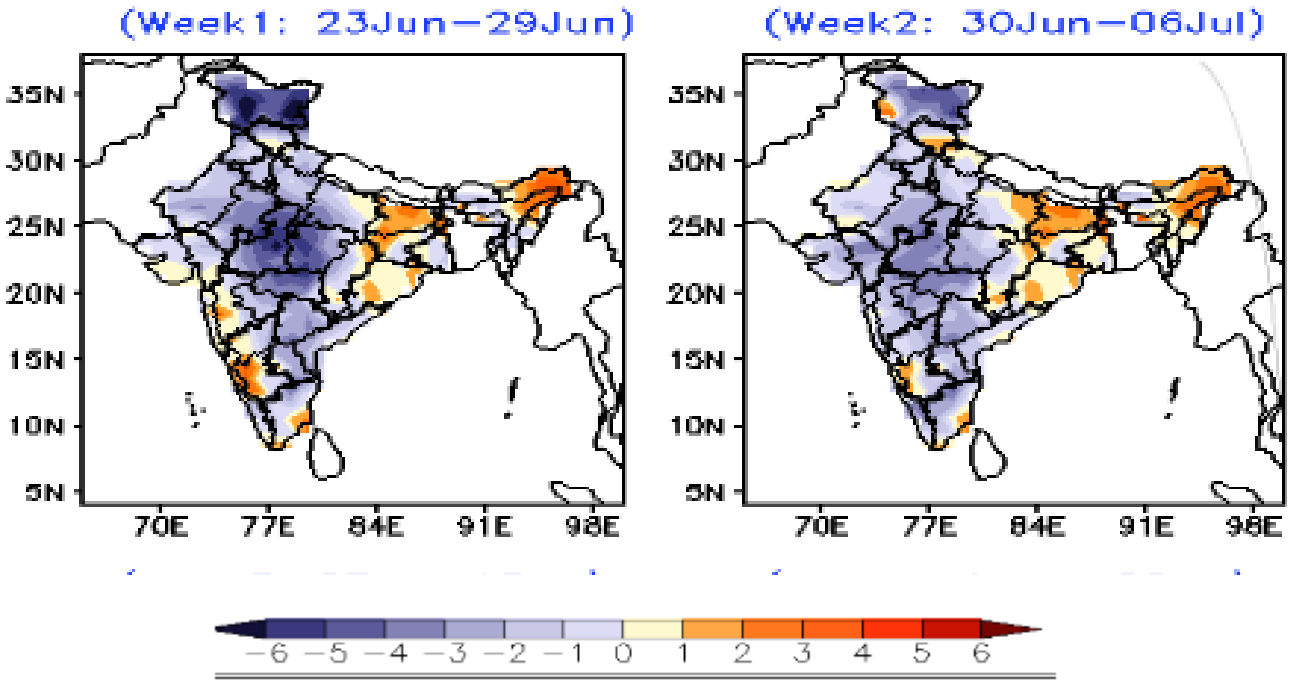
Annexure IV


(Week1: 23Jun−29Jun)
(Week2: 30Jun−06Jul)
35N
30N
25N
20N
15N
10N
5N
70E
77E
84E
91E
98E
1
3
5
7
10
(Week1: 23Jun−29Jun)
(Week2: 30Jun−06Jul)
−10
−5
−1
−0.5
−0.1
0.1
0.5
1
5
10

Annexure V


(Week1: 23Jun–29Jun)
(Week2: 30Jun–06Jul)
35N
30N
25N
20N
15N
10N
5N
70E
77E
84E
91E
98E
26 28 30 32 34 36 38 39 40 41 42 43 44 45


(Week1: 23Jun–29Jun)
(Week2: 30Jun–06Jul)
35N
30N
25N
20N
15N
10N
5N
70E
77E
84E
91E
98E
−6 −5 −4 −3 −2 −1 0 1 2 3 4 5 6