



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

Dated: 15 July, 2021

Subject: Current Weather Status and Extended range Forecast for next two weeks (15-28 July 2021)

a. Significant weather features observed for week ending on 14 July 2021

❖ Advance of Southwest Monsoon

➤ In association with continued prevalence of moist easterly winds from the Bay of Bengal in the lower tropospheric levels, enhanced cloud cover and scattered to fairly widespread rainfall activity during previous twenty four hours, the Southwest Monsoon has further advanced into most parts of Rajasthan and Punjab and some more parts of Haryana and West Uttar Pradesh on 12th July 2021 after a hiatus of about three weeks; the Northern Limit of Southwest monsoon (NLM) passed through Jaisalmer, Nagaur, Bharatpur, Aligarh, Karnal and Ganganagar on 12th July 2021; it has further advanced into remaining parts of Uttar Pradesh, Punjab, Haryana and Rajasthan and entire Delhi and thus covered the entire country on 13th July 2021, against the normal date of 8th July. **(Fig.1)**

❖ Major Weather Systems and Associated Severe Weather

◆ A Low Pressure Area has formed over Westcentral & adjoining Northwest Bay of Bengal off north Andhra Pradesh-south Odisha coasts in the early morning hours of 11th July 2021 and it persisted over the same areas on 12th; the Low Pressure Area has become less marked, however, its remnant cyclonic circulation extending upto mid-tropospheric levels lay over south Odisha - north Andhra Pradesh coasts on 13th and over south Chhattisgarh & neighbourhood on 14th July 2021,

tilting southwestwards with height; this system along with an east west shear zone in lower/mid tropospheric levels roughly along 18°-19°N which persisted on most of the days of the week have caused fairly widespread to widespread rainfall/thunderstorm activity over parts of East, Central and Peninsular India and adjoining areas of Maharashtra on many days during the week; heavy/very heavy rainfall at isolated places also had been reported over these areas along with.

- ◆ Formation of the above Low pressure area has caused strengthening of the monsoon flow and its convergence along the west Coast has caused fairly widespread to widespread rainfall/thunderstorm activity along with heavy to very heavy/ extremely heavy rainfall along the west coast and over the Ghats sections of Maharashtra and Karnataka during the week.

- ◆ Another Low Pressure Area has formed over south Gujarat & adjoining Northeast Arabian Sea on 12th July 2021; it lay over Saurashtra coast & neighbourhood on 13th and over coastal areas of Kutch & neighbourhood on 14th July 2021; this Low pressure area along with its associated cyclonic circulation extending upto mid tropospheric levels and the positioning of the monsoon trough to the south of its normal position have caused fairly widespread to widespread rainfall/thunderstorms activity along with isolated heavy/very heavy rainfall over Gujarat State during the second half of the week.

- ◆ Convergence of strong easterlies from Bay of Bengal in the lower tropospheric levels causing moisture incursion into the region and its continued prevalence over the region from the middle of the week has caused fairly widespread to widespread rainfall/thunderstorm activity over Western Himalayan Region and isolated to scattered rainfall/thunderstorm activity over adjoining plains of Northwest India during the week; it has also caused isolated heavy/very heavy rainfall activity on a few days and isolated extremely heavy rainfall activity over Himachal Pradesh and Haryana on one day each during the week.

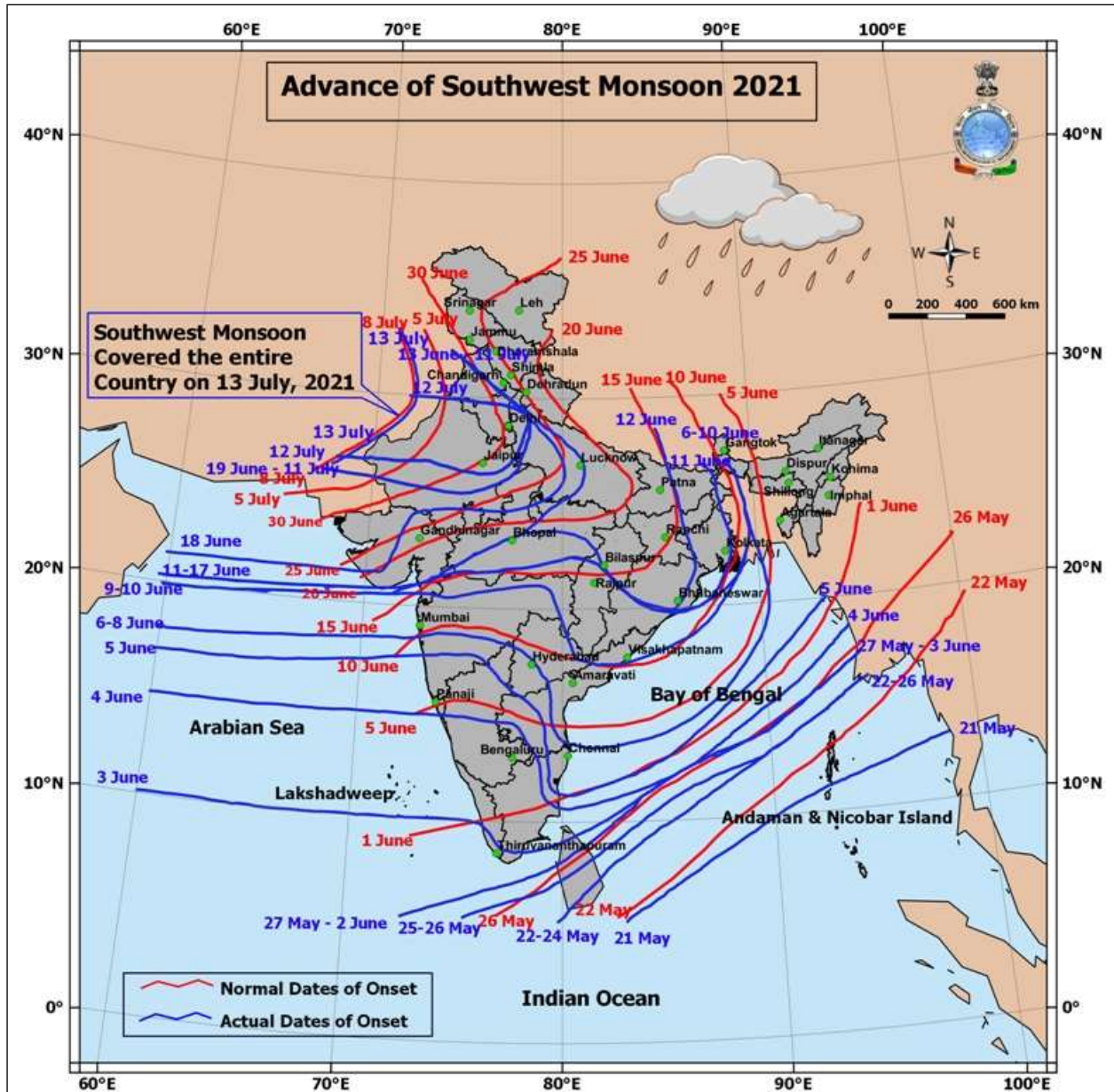


Fig.1

❖ Heavy Rain:

- ◆ Heavy to Very heavy rainfall with extremely heavy falls at isolated places had occurred over Konkan & Goa on two days; over Haryana, Chandigarh & Delhi, Himachal Pradesh and Madhya Maharashtra on one day each during the week.
- ◆ Heavy to Very heavy rainfall at isolated places had occurred over Telengana and Coastal Karnataka on five days each; over Assam & Meghalaya, Bihar and Kerala & Mahe on three days each; over Sub Himalayan West Bengal & Sikkim, Uttarakhand, Himachal Pradesh, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh and South

interior Karnataka on two days each; over Andaman & Nicobar Islands, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Gangetic West Bengal, East Uttar Pradesh, Haryana, Chandigarh & Delhi, Punjab, Jammu & Kashmir, West Madhya Pradesh, Gujarat Region and Coastal Andhra Pradesh & Yanam on one day each during the week.

◆ **Heavy rainfall at isolated places** had occurred over Coastal Andhra Pradesh & Yanam and Tamil Nadu, Puducherry & Karaikkal on five days each; over Nagaland, Manipur, Mizoram & Tripura and Gujarat Region on four days each; over Sub Himalayan West Bengal & Sikkim, Odisha, East & West Uttar Pradesh, Punjab, Himachal Pradesh, East & West Madhya Pradesh, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra, Marathwada, Chhattisgarh, Rayalseema and North Interior Karnataka on three days each; over Andaman & Nicobar Islands, Arunachal Pradesh, Bihar, Uttarakhand, East & West Rajasthan, Vidarbha, Coastal & South Interior Karnataka and Kerala & Mahe on two days each; over Assam & Meghalaya, Gangetic West Bengal, Jammu Kashmir & Ladakh and Telengana on one day each during the week.

Temperature Scenario:

◆ **Heatwave conditions at isolated places** had occurred over West Rajasthan on one day during the week.

◆ The highest maximum temperature of **44.8 °C** had been recorded at **Bikaner (West Rajasthan)** on **11th July 2021** and the lowest minimum temperature of **18.0°C** had been recorded at **Rajnandgaon (Chhattisgarh)** on both **11th & 14th July 2021** over the plains of the country during the week.

LEGEND: A few days- 3 days, Many days- 4 to 5 days and Most days- 6 to 7 days during the week.

b. Weekly rainfall and seasonal rainfall Scenario

Weekly Rainfall Scenario (8-14 July, 2021)

During the week, rainfall for the country as a whole was below Long Period Average (LPA) by **-7%**. Details are given in Table 1

The Meteorological sub-division-wise rainfall for the season till 14 July 2021 is given in **Annexure I**.

Southwest Monsoon season's Rainfall Scenario (1 June to 14 July, 2021)

For the country as a whole, cumulative **rainfall during this year's Southwest Monsoon season's Rainfall till 7 July, 2021 is below normal with -5 % departure from**

LPA. Details of the rainfall distribution over the four broad geographical regions of India are given Table 1

Table 1: Rainfall status (Week and season)

Region	WEEK			SEASON		
	08.07.2021 TO 14.07.2021			01.06.2021 TO 14.07.2021		
	Actual	Normal	% Departure	Actual	Normal	% Departure
EAST & NORTH-EAST INDIA	61.7	102.3	-40%	500.5	548.8	-9%
NORTH-WEST INDIA	38.7	49.1	-21%	135.1	159.3	-15%
CENTRAL INDIA	67.3	68.0	-1%	287.8	305.4	-6%
SOUTH PENINSULA	74.7	46.9	59%	279.9	252.5	+11%
country as a whole	59.0	63.5	-7%	273.2	288.9	-5%

c. Chief synoptic conditions as on 8 July , 2021

- ◆ The axis of Monsoon Trough at mean sea level passes through Amreli, Surat, Buldana, Adilabad, Jagdalpur, Vishakhapatnam and thence east-southeastwards to Eastcentral Bay of Bengal and extends upto 1.5 km above mean sea level.
- ◆ The east-west shear zone runs roughly along Lat. 19°N and now seen between 2.1 km & 7.6 km above mean sea level tilting southwards with height.
- ◆ A cyclonic circulation lies over east Vidarbha & neighbourhood and extends upto 4.5 km above mean sea level tilting southwestwards with height.
- ◆ The off-shore trough at mean sea level lies off Karnataka-Kerala coasts

d. Large scale features as on 8 July , 2021

- Presently, neutral ENSO conditions are seen over the equatorial Pacific along with substantially 3 warmer subsurface temperatures over the region. Atmospheric patterns also reflect neutral ENSO conditions. The latest MMCFS and other global model forecast indicate that neutral ENSO conditions will continue during the upcoming monsoon season.

- At present, neutral Indian Ocean Dipole (IOD) conditions are prevailing over the Indian Ocean. The latest forecast from the MMCFS and other global models together indicate possibility of development of negative IOD conditions during the monsoon season.
- The Index of Madden Julian Oscillation (MJO) currently lies in Phase 4 with amplitude close to 1. It is likely to move into Phase 5 with amplitude slightly greater than 1 from the beginning of Week 1, propagate further eastwards and enter Phase 6 with gradual reduction in amplitude during the later half of week 2. Hence the phase of MJO is likely to favour enhancement of convective activity over the north Indian Ocean (NIO) during Week 1 & also in major part of Week 2.

e. Forecast for next two week

Weather systems & associated Precipitation during Week 1 (15 to 21 July, 2021) and Week 2 (22 to 28 July, 2021)

Rainfall for week 1: (15 to 21 July, 2021)

- The axis of Monsoon Trough at mean sea level passes through south of normal position along Amreli, Surat, Buldana, Adilabad, Jagdalpur, Vishakhapatnam and thence east-southeastwards to Eastcentral Bay of Bengal and extends upto 1.5 km above mean sea level. The east-west shear zone roughly passes along Lat. 19°N across central India between 2.1 km & 7.6 km above mean sea level tilting southwards with height.
- As per Numerical Weather Prediction Models forecasts, monsoon trough is likely to shift northwards along with weakening of east-west convergence zone from 17th July. Monsoon trough is also likely to stay north of the normal position during 18-20 July and then gradually may shift back southwards thereafter. A low pressure area is likely to form over northwest & adjoining west-central Bay of Bengal off south Odisha coast towards the end of Week 1.

Under the influence of these meteorological conditions;

- Fairly widespread to widespread rainfall very likely to continue over Himachal Pradesh and Uttarakhand with isolated heavy falls till 16th, increasing to isolated heavy to very heavy falls over these regions during 18th to 20th July.
- Isolated to scattered rainfall over plains of Northwest India till 16th July with Isolated Heavy rainfall over Haryana today on 15th July. There is likelihood of enhanced rainfall activity over these areas from 17th July with widespread rainfall is likely over Haryana, Punjab, north Rajasthan, north

Madhya Pradesh and south Uttar Pradesh during 17th-19th July and scattered to fairly widespread activity over these areas thereafter during 20th and 21st July . **Isolated heavy to very heavy rainfall** is very likely over north Rajasthan, Haryana, northwest Madhya Pradesh and west Uttar Pradesh during 17th to 19th July over Jammu and Kashmir on 20 July with reduction thereafter. **Isolated heavy rainfall** is also very likely over Punjab and east Uttar Pradesh during 17th to 19th July with reduction thereafter.

- Widespread rainfall with isolated heavy falls likely over northeast India and sub-Himalayan west Bengal and Sikkim till 16th July with increase in rainfall during 17th -19th July. Isolated very heavy rainfall likely over this region during 17-19 July with reduction thereafter.
- Fairly widespread to widespread rainfall in almost all dates during the week very likely over Konkan & Goa, Kerala and coastal and south interior Karnataka with **isolated heavy to very heavy falls over the region during the same period**. **Isolated extremely heavy falls** also very likely over Konkan & Goa on 15th.
 - Scattered to fairly widespread rainfall likely with isolated heavy rains likely over rest parts of Peninsular India, rest parts of central India and Bihar and Gangetic west Bengal till 17th July with slight increase in distribution & intensity thereafter with fairly widespread to widespread rainfall over region till 20th July, 2021. **With likely formation of low pressure area over northwest & adjoining west-central BoB off south Odisha coast towards the end of Week 1, rainfall likely to increase over east central India and west coast of India from 21 July. (Annexure IV).**

Rainfall for week 2: (22 to 28 July, 2021)

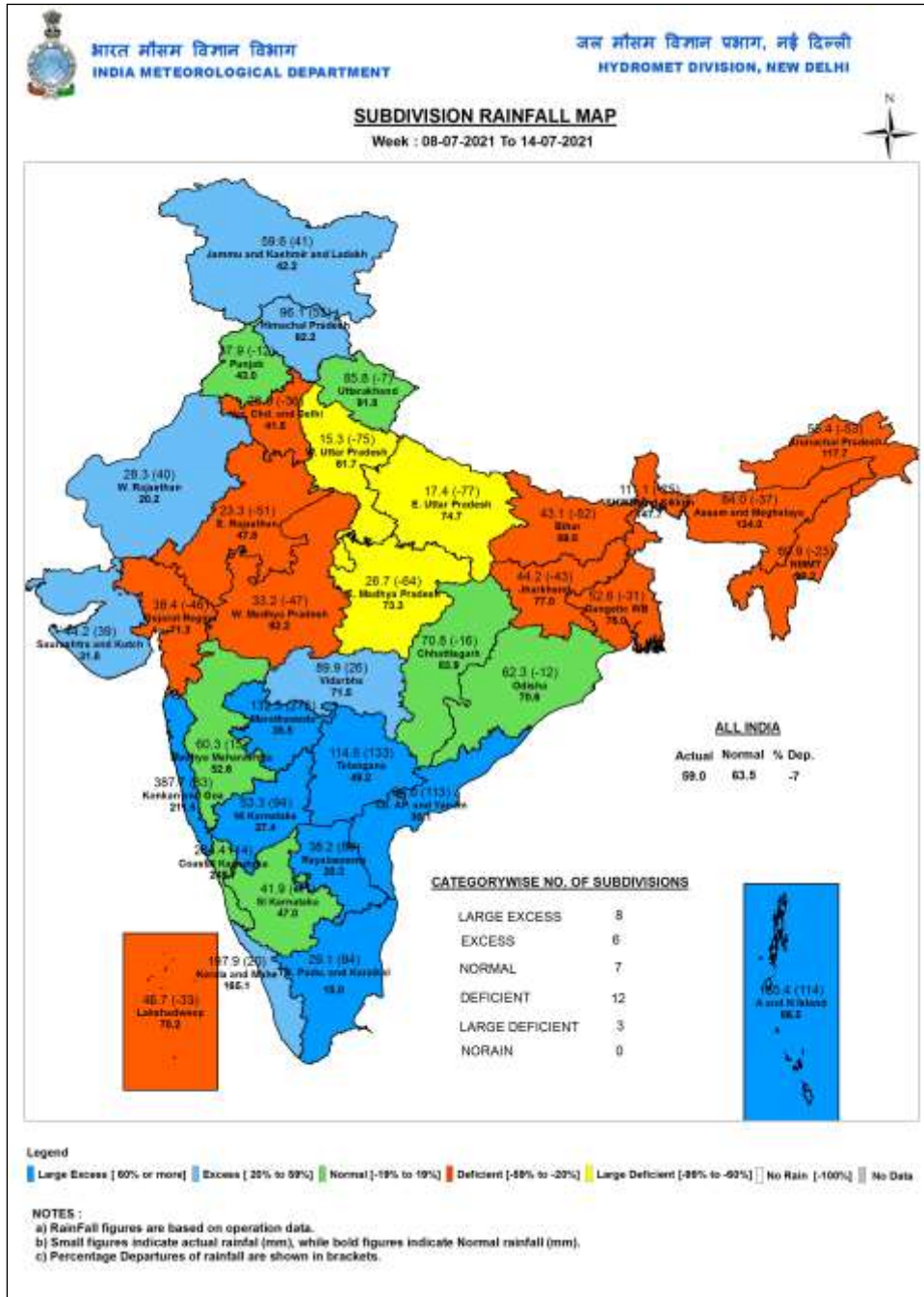
- **With shifting of the monsoon trough towards south during the week 2, Southwest monsoon is likely to be in active phase over central India and adjoining parts of northwest India, west coast of the country and adjoining Peninsular India. The off-shore trough along the west coast is also likely to persist during most days of the week.**
- Widespread rainfall with isolated heavy to very heavy falls very likely along the west coast and central parts of India, Gujarat state, east Rajasthan and east coasts of India. Fairly widespread to widespread rainfall with isolated heavy falls is likely over parts of northwest during 2nd half of the week.
- Overall, normal to above normal rainfall activity is likely over west coast, northwest India (excluding Jammu & Kashmir and Ladakh), central & adjoining east India. Below normal rainfall activity is likely over Jammu & Kashmir and Ladakh, parts of southeast Peninsular India, northeastern states & adjoining east India.

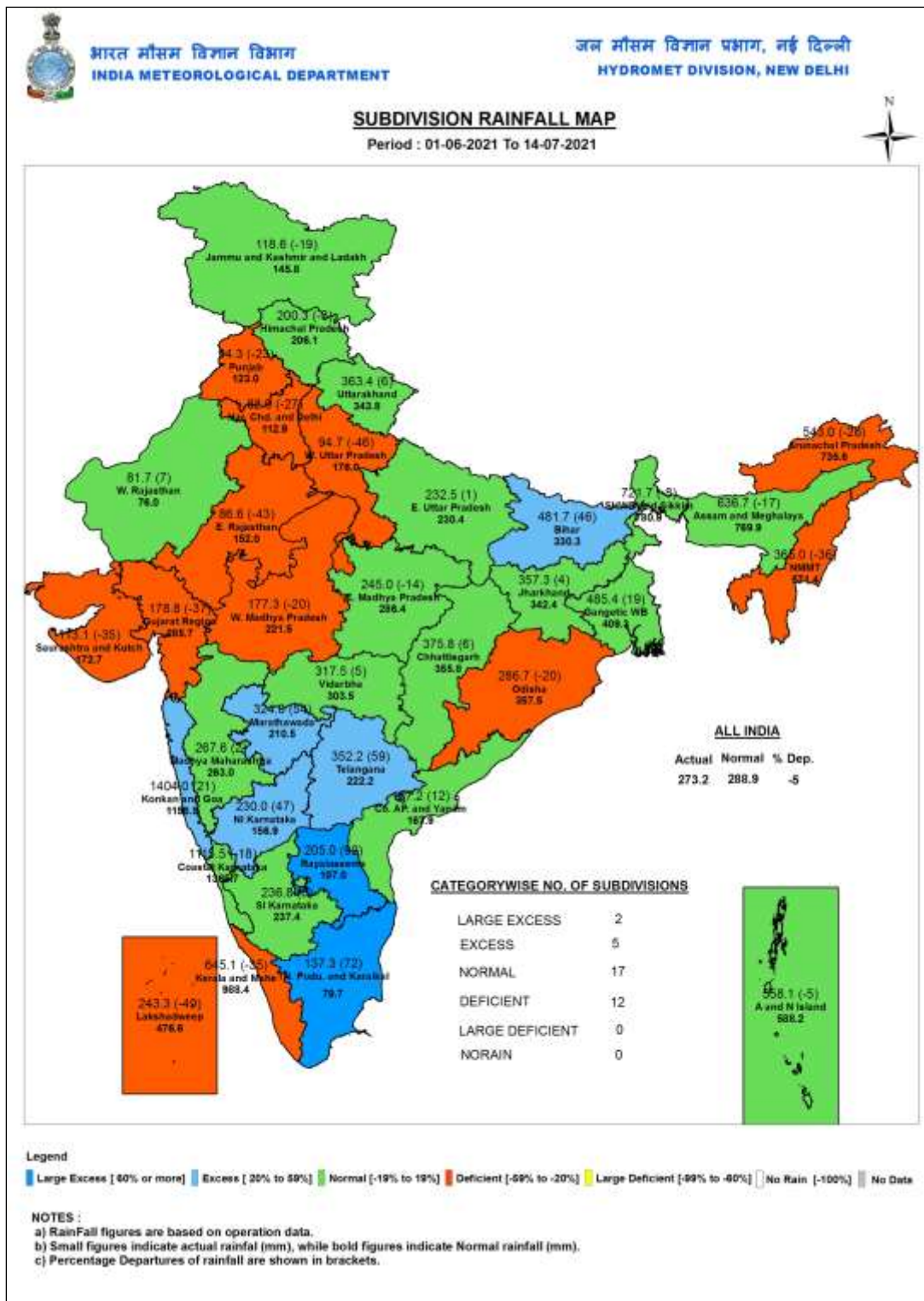
f. Cyclogenesis:

Considering existing environmental features and model guidance, it may be concluded that no cyclogenesis is likely over the north Indian Ocean during the forecast period. However, a low pressure area is likely to form over northwest & adjoining west-central BoB off south Odisha coast towards the end of Week 1.

https://rsmcnewdelhi.imd.gov.in/uploads/archive/24/24_ad0818_Extended%20Range%20Outlook_15072021.pdf

Next weekly update will be issued on next Thursday i.e. 22 July 2021

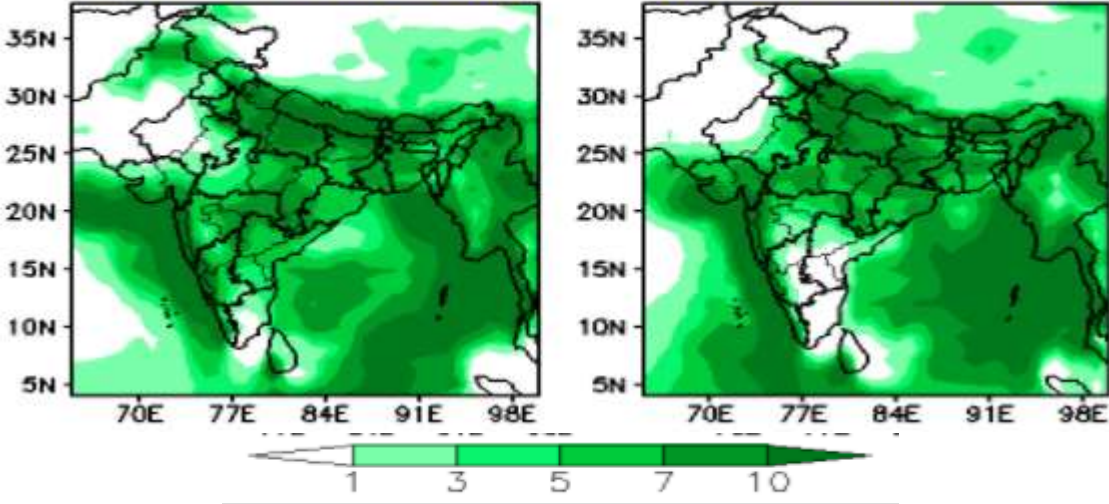




Forecast Rainfall (mm/day)

(Week1: 16Jul-22Jul)

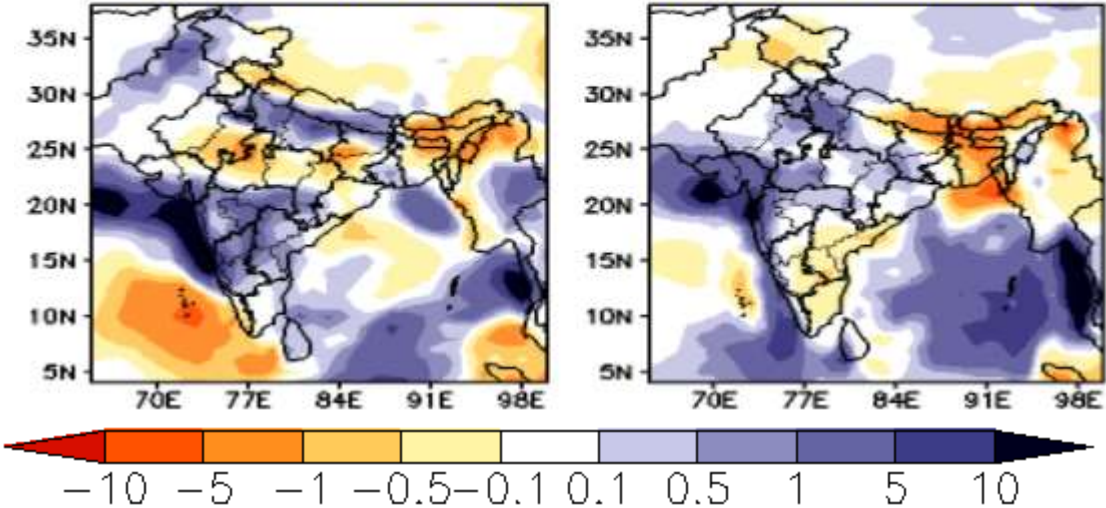
(Week2: 23Jul-29Jul)



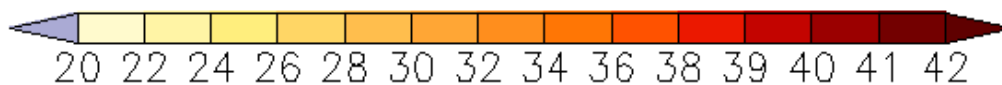
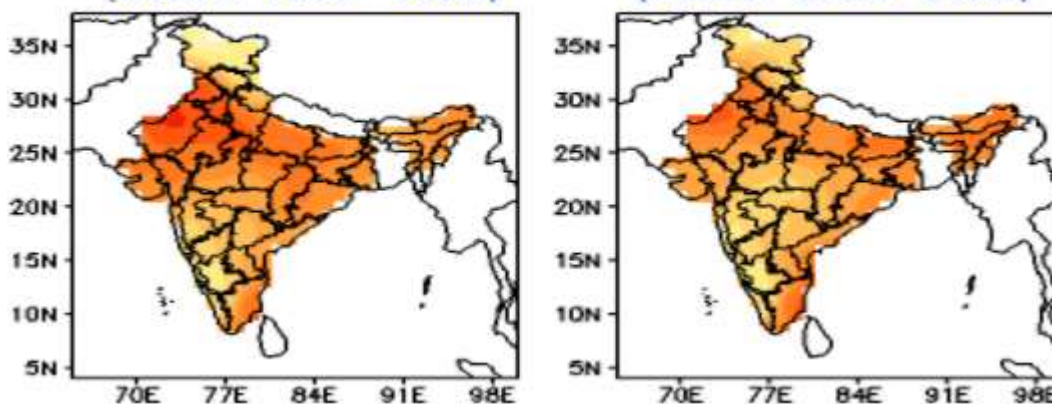
Forecast Rainfall Anomaly (mm/day)

(Week1: 16Jul-22Jul)

(Week2: 23Jul-29Jul)



MME Bias corrected forecast Tmax (Deg)
(Week1: 16Jul-22Jul) (Week2: 23Jul-29Jul)



MME forecast Tmax anomaly (Deg C)
(Week1: 16Jul-22Jul) (Week2: 23Jul-29Jul)

