



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

Dated: 8 July, 2021

Subject: Current Weather Status and Extended range Forecast for next two weeks (8-21 July 2021)

a. Significant weather features observed for week ending on 7 July 2021

❖ Advance of Southwest Monsoon

➤ Since the prevailing meteorological conditions and large scale atmospheric features remained unfavorable, further advance of Southwest monsoon has not taken place in this week. Hence, a hiatus in the advance of Southwest Monsoon has been observed after 19th June 2021, which has been still continued till 7 July in this week. The Northern Limit of Southwest monsoon (NLM) continued to pass through Lat. 26°N / Long. 70°E, Barmer, Bhilwara, Dholpur, Aligarh, Meerut, Ambala and Amritsar till the end of the week. **(Fig.1)**

❖ Major Weather Systems and Associated Severe Weather

◆ Under the influence of a trough at mean sea level from Northwest India to Northeast India across the plains of North India which persisted on many days during the week and convergence of strong southerlies/ southwesterlies from Bay of Bengal causing moisture incursion into the region have caused fairly widespread to widespread rainfall/thunderstorms over Northeast and adjoining areas of East India during the week; heavy/ very heavy rainfall had been reported over Assam & Meghalaya on all the days along with extremely heavy rainfall on one day during the week; Arunachal Pradesh and Sub Himalayan West Bengal & Sikkim also had reported heavy/ very heavy rainfall on

many days whereas Nagaland , Manipur , Mizoram& Tripura had reported heavy/ very heavy rainfall activity on two to three days during the week.

◆ Movement of Western Disturbances and a cyclonic circulation in the lower tropospheric levels over North Pakistan and neighbourhood which persisted throughout the week have caused fairly widespread to widespread rainfall/thunderstorm activity over Jammu Kashmir & Ladakh , Himachal Pradesh, Haryana, Chandigarh & Delhi and Punjab on one or two days and isolated rainfall/thunderstorm activity over these areas on a few days during the week; it has also caused isolated to scattered rainfall/thunderstorm activity over Uttarakhand and isolated rainfall/thunderstorm activity over other parts of Northwest India on a few days during the week; isolated heavy rainfall also had been reported over Western Himalayan Region and over Punjab on one or two days along with.

◆ Under the influence of north-south troughs and cyclonic circulations in the lower tropospheric levels supported by moisture incursion from Bay of Bengal, scattered to fairly widespread rainfall /thunderstorms activity had occurred over parts of East India and adjoining areas of Central India and Peninsular India during the week along with isolated heavy/very heavy rainfall over Bihar and isolated heavy rainfall over Chhattisgarh on all the days of the week and isolated heavy rainfall over remaining parts of these areas on two to three days during the week.

◆ A cyclonic circulation over south Rajasthan & neighbourhood in the middle levels which persisted almost throughout the week supported by moisture incursion from Arabian Sea have caused isolated rainfall/thunderstorm activity over Gujarat State and adjoining areas of south Rajasthan and West Madhya Pradesh during the week; it has also caused isolated heavy rainfall over Gujarat Region and West Madhya Pradesh on one or two days during the week.

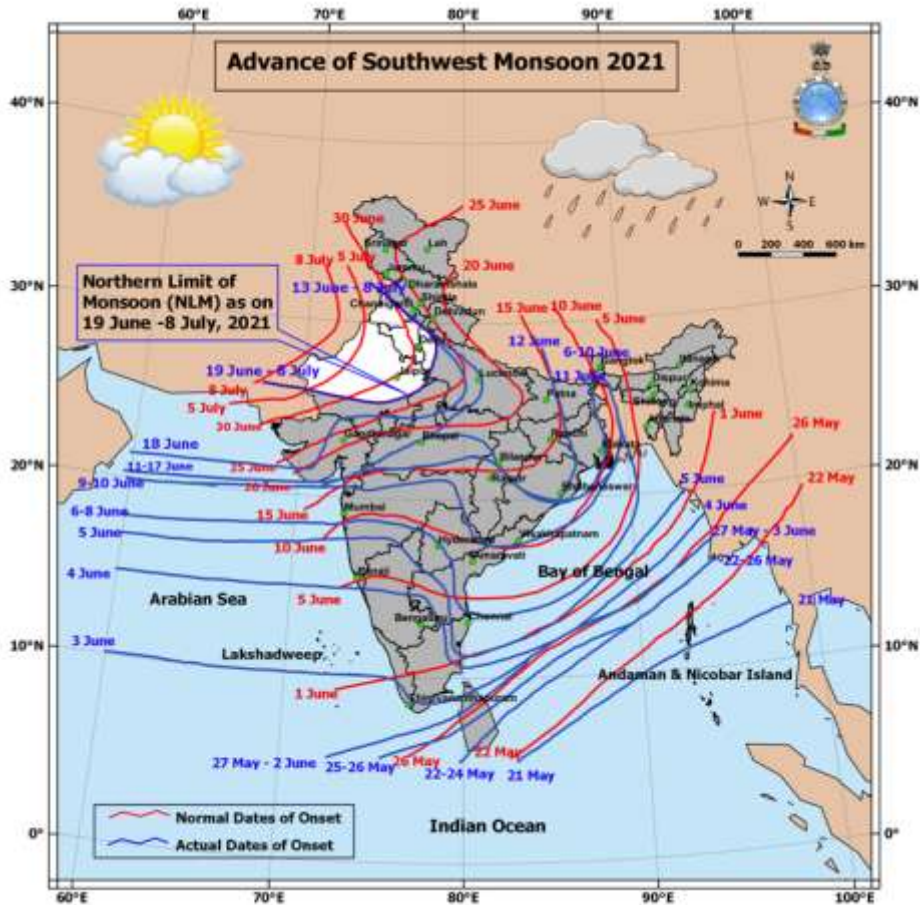


Fig.1

❖ Heavy Rain:

◆ Heavy Rain:

◆ Heavy to Very heavy rainfall with extremely heavy falls at isolated places had occurred over Assam & Meghalaya on one day during the week.

◆ Heavy to Very heavy rainfall at isolated places had occurred over Sub Himalayan West Bengal & Sikkim on four days; over Assam & Meghalaya and Bihar on three days each; over Arunachal Pradesh on two days; over Nagaland, Manipur, Mizoram & Tripura, Odisha, Rayalseema, Tamil Nadu, Puducherry & Karaikkal, Coastal Karnataka and Kerala & Mahe on one day each during the week.

◆ Heavy rainfall at isolated places had occurred over Chhattisgarh on seven days; over Tamil nadu, Puducherry & Karaikkal on five days; over Arunachal Pradesh, Bihar, Coastal Andhra Pradesh & Yanam and Rayalseema on four days each; over Assam & Meghalaya, Odisha, Telengana and South Interior Karnataka on three days each; over Nagaland, Manipur, Mizoram & Tripura, West Bengal & Sikkim, Jharkhand, East Uttar Pradesh, Punjab, Jammu Kashmir & Ladakh, East Madhya Pradesh, Gujarat Region, Vidarbha and North Interior Karnataka on two days each; over

Uttarakhand, Himachal Pradesh, West Madhya Pradesh, Konkan & Goa and Kerala & Mahe on one day each during the week.

Temperature Scenario:

- ◆ Heatwave conditions at most places with severe heatwave conditions at isolated places had occurred over Haryana, Chandigarh & Delhi on one day during the week.
- ◆ Heatwve to severe heatwave conditions at isolated places had occurred over Punjab, West Uttar Pradesh and West Madhya Pradesh on one day each during the week.
- ◆ Heatwave conditions at isolated places had occurred over East Uttar Pradesh, Punjab and West Uttar Pradesh on two days each; over West Rajasthan, Haryana, Chandigarh & Delhi and West Madhya Pradesh on one day each during the week.
- ◆ The highest maximum temperature of **45.5°C** had been recorded at **Ganganagar (West Rajasthan)** on **7th July 2021** and the lowest minimum temperature of **17.6°C** had been recorded at **Seoni (East Madhya Pradesh)** on **3rd 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 (1-7 July, 2021)

During the week, rainfall for the country as a whole was below Long Period Average (LPA) by **-46%**. Details are given in Table 1

The Meteorological sub-division-wise rainfall for the season till 7 July 2021 is given in **Annexure I**.

Southwest Monsoon season's Rainfall Scenario (1 June to 7 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		
	01.07.2021 TO 07.07.2021			01.06.2021 TO 07.07.2021		
	Actual	Normal	% Departure	Actual	Normal	% Departure
EAST & NORTH-EAST INDIA	81.8	99.4	-18%	438.9	446.5	-2%
NORTH-WEST INDIA	10.7	34.9	-69%	96.4	110.2	-13%
CENTRAL INDIA	21.7	68.2	-68%	220.5	237.4	-7%
SOUTH PENINSULA	39.6	45.4	-13%	205.8	205.6	0%
country as a whole	31.4	58.5	-46%	214.3	225.4	-5%

c. Chief synoptic conditions as on 8 July , 2021

- ◆ The northern Limit of southwest monsoon (NLM) continues to pass through Lat. 26°N / Long. 70°E, Barmer, Bhilwara, Dholpur, Aligarh, Meerut, Ambala and Amritsar.
- ◆ The moist easterly winds in lower level from Bay of Bengal has started to establish over eastern India. It is likely to spread into northwest India covering Punjab and north Haryana by 10th July. Accordingly, southwest monsoon likely to advance over remaining parts of West Uttar Pradesh, some more parts of Punjab, Haryana and Rajasthan and Delhi around 10th July.
- ◆ A trough at mean sea level runs from Northwest Uttar Pradesh to Northeast Bay of Bengal now runs from Punjab to Northeast Bay of Bengal across Haryana, south Uttar Pradesh, southwest Bihar, Jharkhand and Gangetic West Bengal.
- ◆ Acyclonic circulation lies over East Uttar Pradesh at 0.9 km above mean sea level persists and extends upto 1.5 km above mean sea level.
- ◆ A cyclonic circulation lies over Northwest Bay of Bengal & adjoining coastal areas of Odisha & West Bengal and extends upto 4.5 km above mean sea level.
- ◆ A north-south trough runs from above cyclonic circulation over Northwest Bay of Bengal & adjoining coastal areas of Odisha & West Bengal to south Coastal Andhra Pradesh at 3.1 km above mean sea level.
- ◆ A Western Disturbance as a trough in mid & upper tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long.74°E to the north of Lat.30°N persists.

- ◆ A cyclonic circulation LIES over north Pakistan & adjoining Punjab at 1.5 km above mean sea level persists and now extends upto 2.1 km above mean sea level.
- ◆ A cyclonic circulation lies over south Rajasthan & neighbourhood at 3.1 km above mean sea level.
- ◆ A low pressure area is likely to form over westcentral & adjoining Northwest Bay of Bengal off north Andhra Pradesh-south Odisha coasts around 11th July.

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 2 with amplitude more than 1. It is likely to continue in same phase during first half of Week 1. Thereafter, it will propagate eastwards and move to phase 3 with amplitude gradually decreasing becoming less than 1 during later part of week 1. Thereafter, it will move across phase 4 during week 2 and reach phase 2 during the end of the week 2 with amplitude remaining less than 1. Hence the phase of MJO is likely to favour enhancement of convective activity over the north Indian Ocean during the forecast period.

e. Forecast for next two week

Weather systems & associated Precipitation during Week 1 (08 to 14 July, 2021) and Week 2 (15 to 21 July, 2021)

Revival of monsoon:

- **Prevailing meteorological conditions, large scale atmospheric features and dynamical models suggest revival of monsoon over south and eastcentral India from 8th July and over northwest and central India from 10th July.**
- A cyclonic circulation lies over Northwest Bay of Bengal & adjoining coastal areas of Odisha & West Bengal and extends upto middle tropospheric levels.
- A shear zone is also likely to develop over the central parts of the country from tomorrow, the 9th July, 2021 and likely to persist for subsequent 4-5 days.

- Forecasts based on model consensus shows the formation of low pressure system over Bay of Bengal around 11th July
- Moist easterly winds in lower tropospheric levels from Bay of Bengal likely to establish gradually over parts of eastern India and spread into northwest India covering Punjab and north Haryana by 10th July.
- Hence, from 10th July, further advance of monsoon is likely in Delhi, remaining parts of UP, and some more parts of Punjab, Haryana and subsequently remaining parts of the country during 11th -12th July.

Rainfall for week 1: (08 to 14 July, 2021)

- Under the influence of above favourable meteorological conditions:
 - ❖ Scattered to widespread rainfall very likely over Northwest India from 10th July onwards and **isolated heavy rainfall** also very likely over Jammu, Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad & Punjab on 11th & 12th; Uttarakhand & West Uttar Pradesh during 08th to 14th; Himachal Pradesh, East Rajasthan & Haryana, Chandigarh & Delhi during 10th to 14th and East Uttar Pradesh during 08th to 10th July, 2021. Isolated **heavy to very heavy rainfall** also very likely over Uttarakhand on 11th & 12th July, 2021.
 - ❖ Fairly widespread to widespread rainfall with **isolated heavy falls** very likely over Central & adjoining east India (Madhya Pradesh, Vidharbha, Chhattisgarh and Odisha) during most days of the week and **isolated heavy to very heavy rainfall** also very likely over Vidharbha and Chhattisgarh on 08th & 09th; West Madhya Pradesh on 10th & 11th and over East Madhya Pradesh on 09th July, 2021.
- Due to strengthening of Southwest Monsoon winds from Arabian Sea to west coast and likely formation of off-shore trough; fairly widespread to widespread rainfall activity with **isolated heavy falls** is very likely along the west coast and remaining parts of south Peninsular India during most days of the week. **Isolated heavy to very heavy falls** very likely over Maharashtra & Goa, Coastal Andhra Pradesh and Telangana, Karnataka and Kerala & Mahe during 08th to 12th July. **Isolated extremely heavy rainfall is also over Konkan & Goa on 13th & 14th July, 2021.**

- Due to likely revival of Southwest Monsoon, rainfall intensity & distribution very likely to decrease over Northeast India (Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura) from 9th July onwards (**Annexure IV**).

Rainfall for week 2: (15 to 21 July, 2021)

- **Southwest monsoon is likely to be in active phase over most parts of the country. Due to likely strengthening of westerly winds and off-shore trough along west coast, widespread rainfall with isolated heavy to very heavy falls very likely along the west coast.**
- **Due to likely active monsoon trough at lower levels, fairly widespread to widespread rainfall with isolated heavy falls is very likely over plains of northwest India, central & east India and south Peninsula.**
- **Normal to above normal rainfall activity is likely over plains of northwest India, central & east India and south Peninsula. Below normal rainfall activity is likely over Western Himalayan Region and northeastern states.**

Temperature for week 1: (08 to 14 July, 2021)

- **Maximum Temperature Departures as on 07-07-2021:** Maximum temperatures were markedly above normal (5.1°C to more) at most places over Punjab; at many places over Vidarbha; at a few places over Himachal Pradesh, Uttarakhand, West Uttar Pradesh and West Madhya Pradesh and at isolated places over East Uttar Pradesh, Haryana, Chandigarh & Delhi, East Uttar Pradesh and East Madhya Pradesh; appreciably above normal (3.1°C to 5.0°C) at most places over Marathwada; at many places over Gujarat Region and Madhya Maharashtra; at a few places over Telangana and North Interior Karnataka and at isolated places over West Rajasthan; above normal (1.6°C to 3.1°C) at most places over Gengetic West Bengal and Jharkhand; at many places over Jammu, Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad, Kerala & Mahe, Assam & Meghalaya, Odisha and South Interior Karnataka state; at a few places over Bihar Coastal Andhra Pradesh & Yanam and Andaman & Nicobar Islands. **These are near normal over remaining parts of the country.**
- **No significant change in maximum temperatures over most parts of northwest & central India till tomorrow and fall by 2-4°C.**
- **Heat Wave conditions very likely in isolated pockets over Punjab, Haryana, Chandigarh & Delhi and West Rajasthan till tomorrow, the 09th July, 2021 and abate**

thereafter due to rainfall activity over these areas.

Temperature for week 2: (15 to 21 July, 2021)

- These are very likely to be near normal or above normal by about 2°C over most parts of Northwest, central & adjoining east India and near normal or below normal over remaining parts of the country.
- **No heat wave likely over any part of the country during the week.**

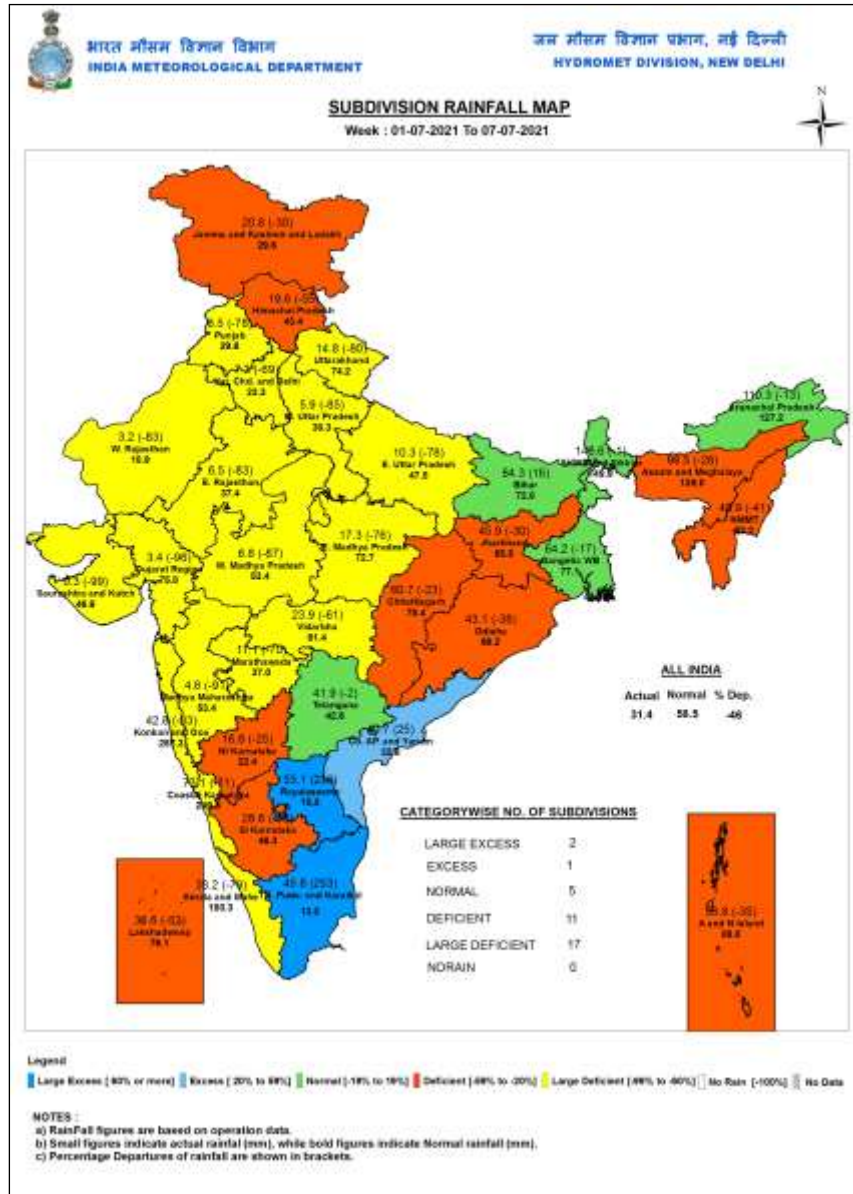
f.Cyclogenesis:

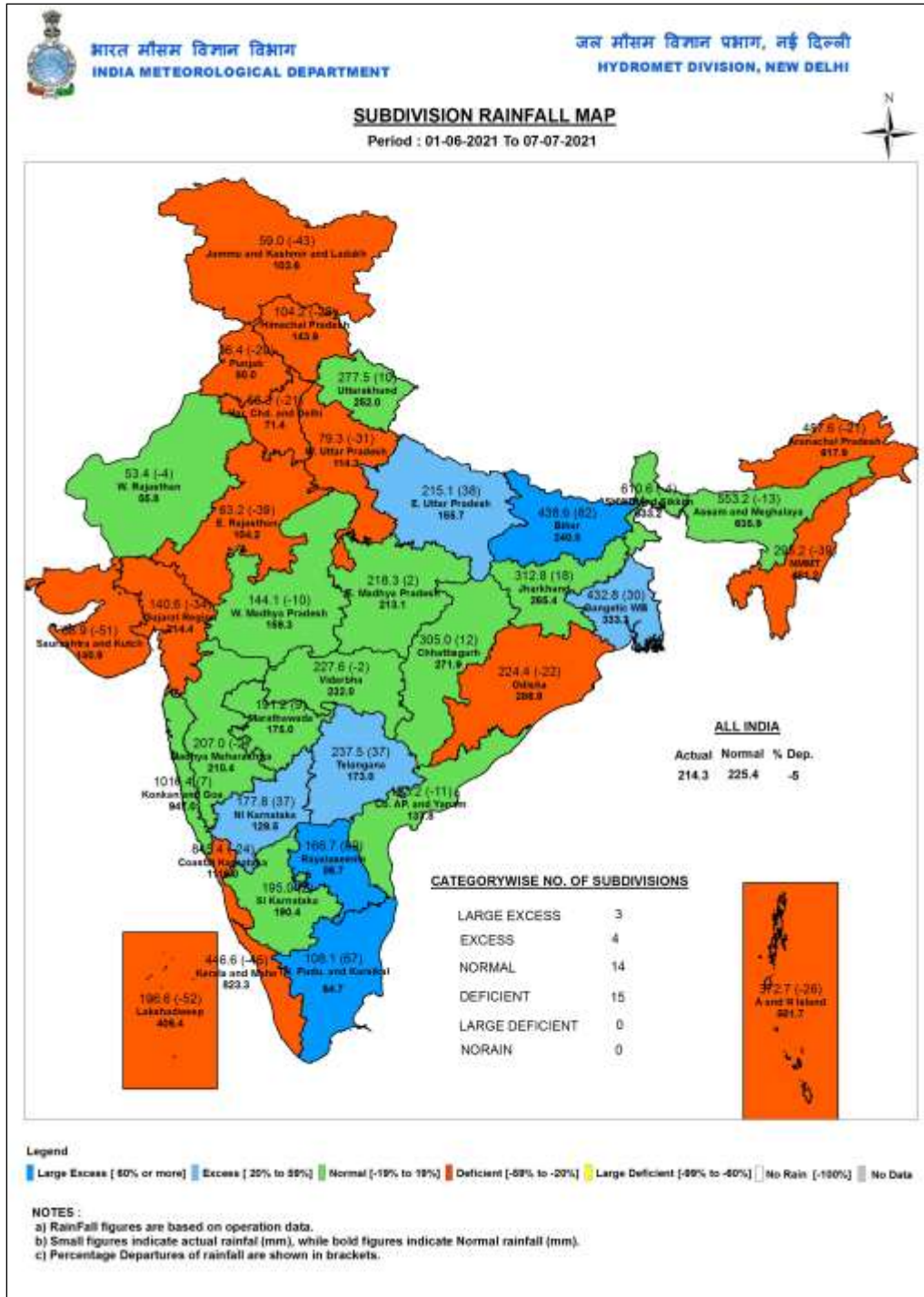
Considering existing environmental features and model guidance, it may be concluded that no cyclogenesis is likely over the north Indian Ocean during the forecast period. However, a low pressure area is likely to form over northwest & adjoining westcentral BoB off south Odisha-north Andhra Pradesh coasts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

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Next weekly update will be issued on next Thursday i.e. 15 July 2021

Annex I

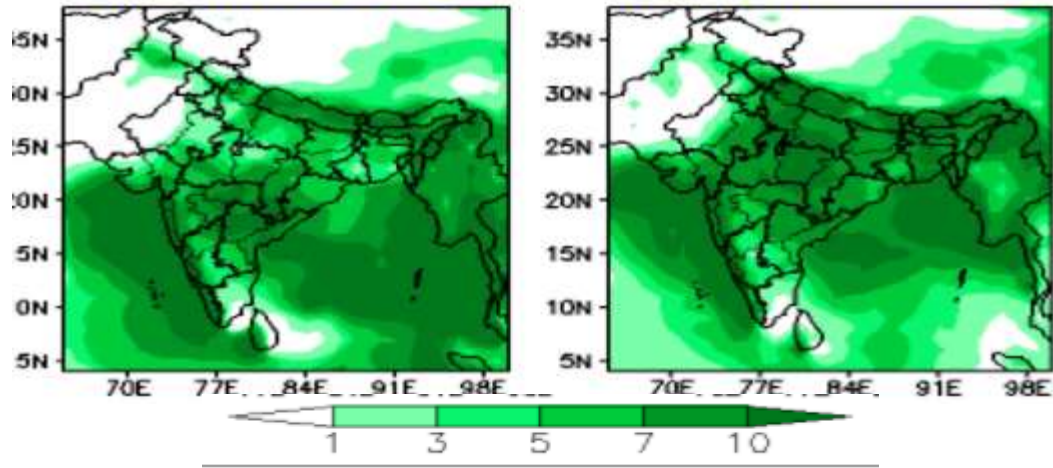




Forecast Rainfall (mm/day)

(Week1: 09Jul-15Jul)

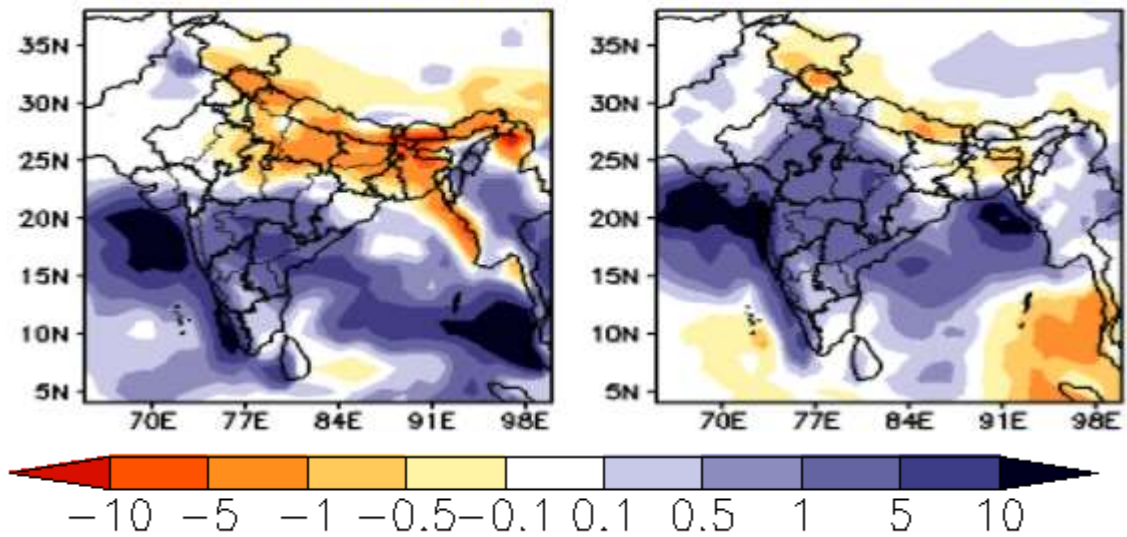
(Week2: 16Jul-22Jul)



Forecast Rainfall Anomaly (mm/day)

(Week1: 09Jul-15Jul)

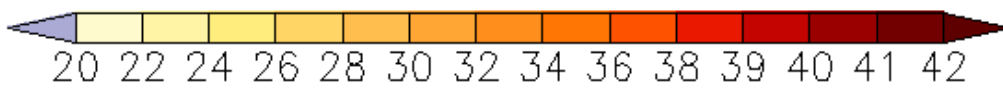
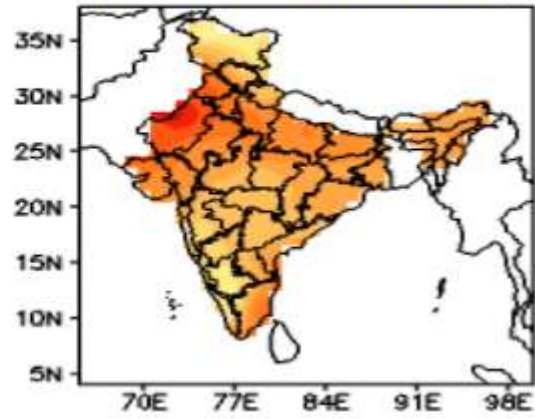
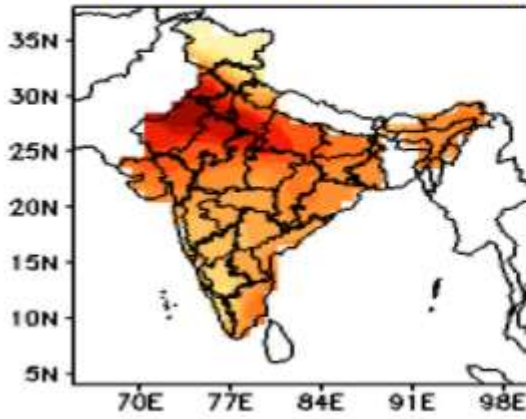
(Week2: 16Jul-22Jul)



MME Bias corrected forecast Tmax (Deg)

(Week1: 09Jul-15Jul)

(Week2: 16Jul-22Jul)



MME forecast Tmax anomaly (Deg C)

(Week1: 09Jul-15Jul)

(Week2: 16Jul-22Jul)

