

Preparation of IBF-Textual and graphical format using recent cases –Hindcast mode

Dr. R.K. Jenamani

Mr Shobhit Katiyar

Dr. Sashikant

Mr. Krishna Mishra

Mr. Surendra Pratap Singh

Objective

- Shared Experiences
- Trigger thoughts for effective IBF and RBW to generate at High Tempo (Nowcast, SR, ER) and Spatial(Dist/Not Sub-Div)(like cyclone SOP and stake holders)
- Maharashtra Heavy rainfall spell and associated hazards and impact 14-24 July-Dr Jenamani
- Raj-MP flood 29 July-8 Aug 2021 –Sri Krishan Mishra
- Delhi Heavy rain episode 21 Aug 2021 and Dehradun Heavy Rain 24-25 Aug 2021-Mr Shobhit Katiya

Recreating IBF for Maharashtra Flood 14-24 July

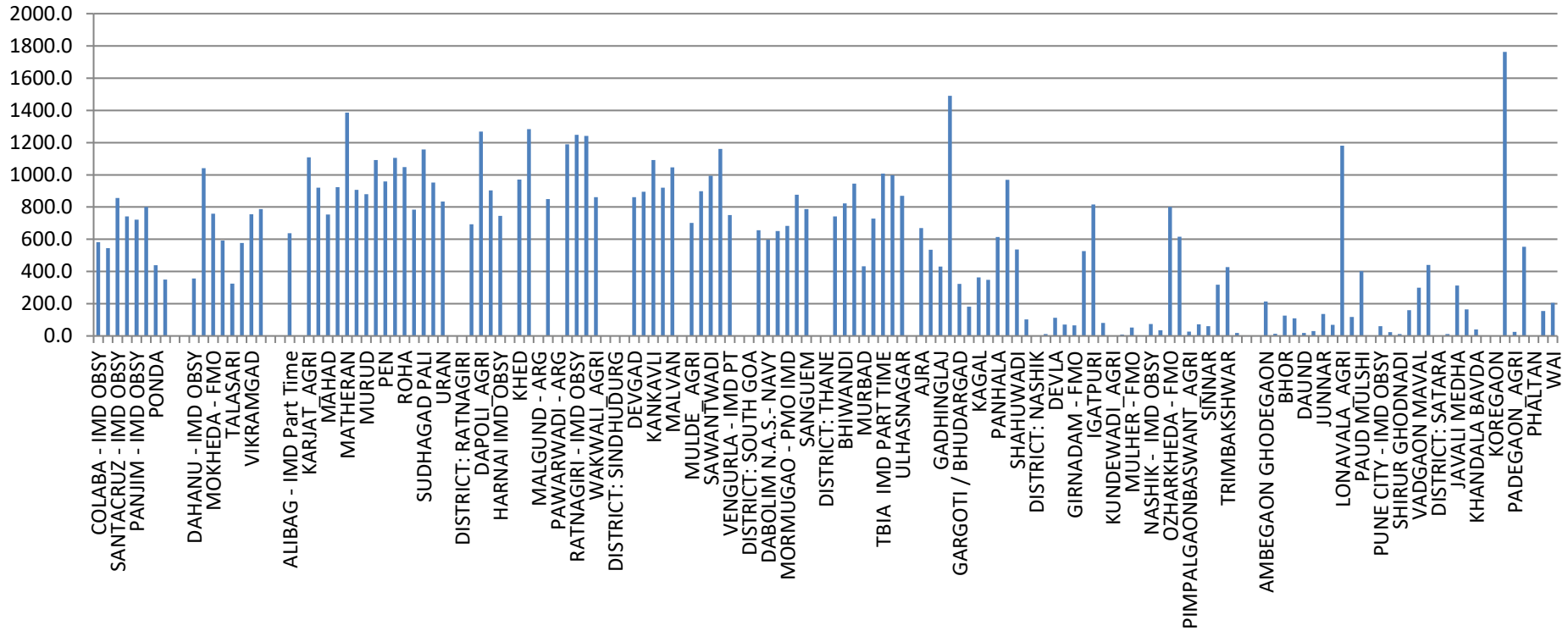
- **Event Characteristics (Scale, intensity and duration) in Forecast Products**
- **Lead time and certainty of the event**
- **Impact at the similar scale in the past**

Unusual long Heavy rainfall spell of 29 July-7 August 2021 over western parts of WMP and Eastern parts of E Raj

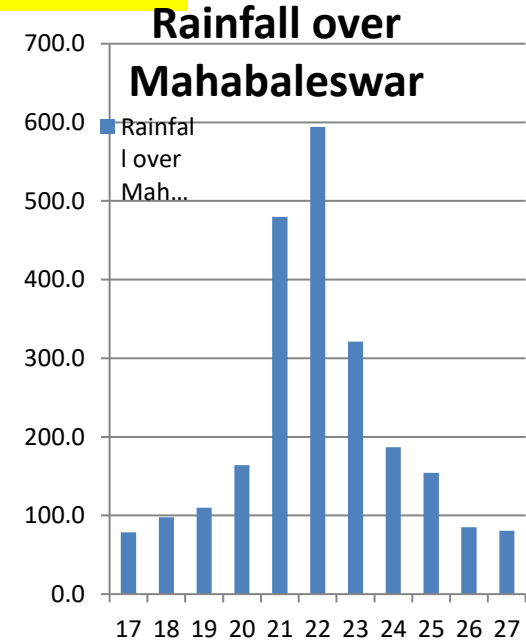
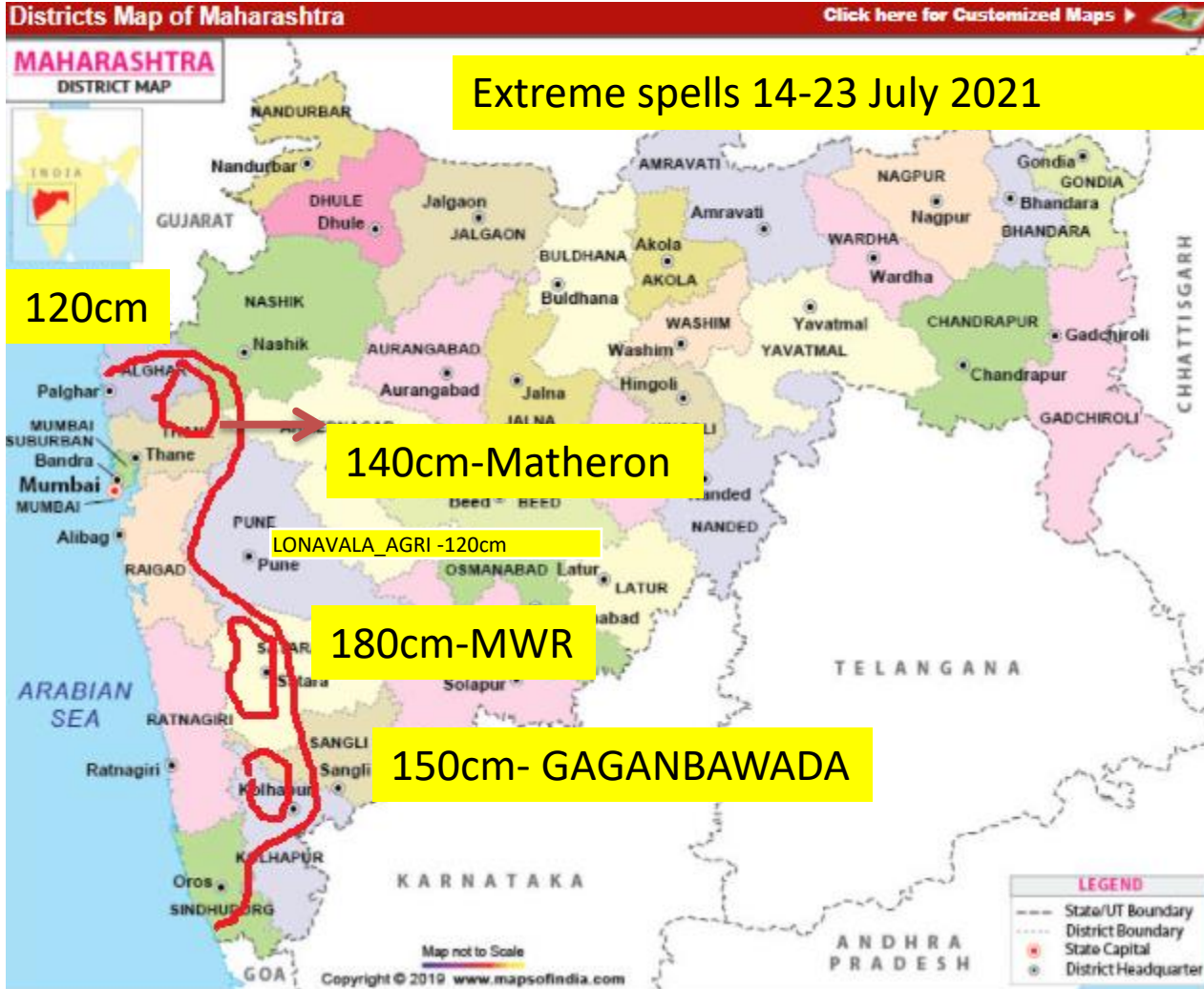
- Event-Heavy rainfall long spell around 10 days with cumulative 80-120cm
- Hazards caused-
 - Primary-Flash flood, Riverine flood
 - Secondary – Long term inundation affecting lives further
- Impact ?

Maharashtra Flood: 14-23 July 2021(10-days of unusual heavy rainfall spell-1200-1800mm rainfall)

Rainfall during 14-23 July 2021



14-23 July 2021(10-days of unusual heavy rainfall spell-1200-1800mm rainfall)



Components of IB assessments of Maharashtra Flood 2021

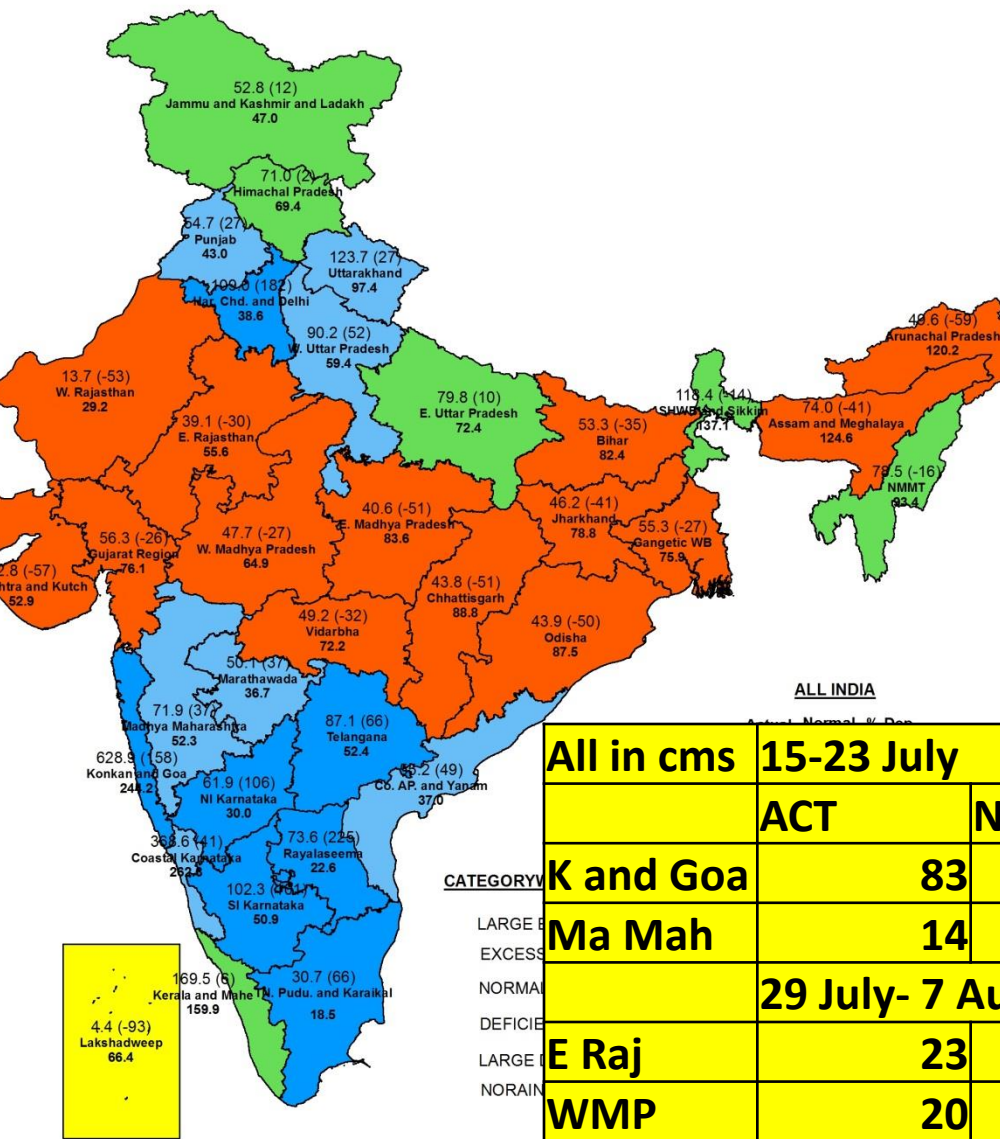
- Event- 120-180cm in 10days- Heavy rainfall unusual higher and longer spell-Climate extremes)
- Period-14-25 July 2021
- Hazards caused-
 - Primary-Flash flood, Land slides, Riverine flood
 - Secondary – Long term inundation affecting lives further
- A landslide in Talai village in Maharashtra's Raigad district killed 38 people on Thursday. Heavy rainfall over
- Three separate incidents of landslides in Mahad tehsil, which took place on Thursday, is likely to rise, police said. While 32 bodies were found at one spot in Talai, four others were recovered from another location in Sakharsutarwadi village. Fifteen people have been reportedly rescued so far, but over 30 to 35 more are feared trapped under the debris, officials say.

**Maharashtra 14-23 July 2021(10-days) of unusual heavy rainfall spell
when 1200-1800mm rainfall was observed - Chiplun, Maharashtra worst affected –I
Impact Table**

District affected	<u>Raigad</u> , <u>Ratnagiri</u> , <u>Sindhudurg</u> , <u>Satara</u> , <u>Sangli</u> and <u>Kolhapur</u>
Village Affected:	1020
Lives lost	<u>Death toll 228, highest in Raigad with 95"</u>
Impact on Livestock	28,700 poultry deaths and around 300 other animal deaths in Kolhapur, Sangli, Satara and Sindhudurg districts
Crops	2 <u>lakh</u> (200,000) hectares of crops have been damaged in the floods
Infrastructural facilities were impacted and damaged	<ul style="list-style-type: none">➤ around 800 bridges have been submerged➤ drinking water supply of around 700 villages was affected➤ about 14,700 electric transformers, affecting the power supply to nearly 9.5 lakh (950,000) consumers.
Landslides	<ul style="list-style-type: none">➤ 5-6 landslides were reported

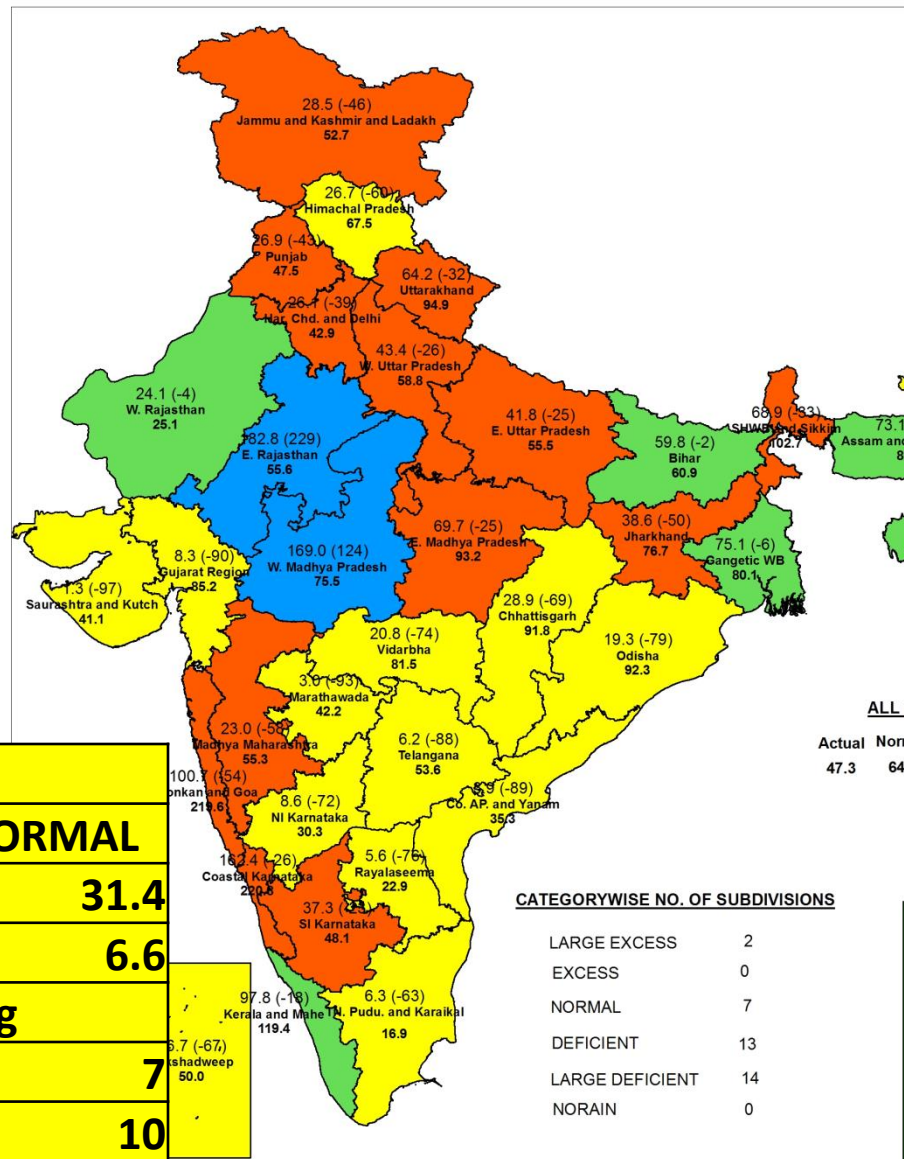
SUBDIVISION RAINFALL MAP

Week : 15-07-2021 To 21-07-2021



SUBDIVISION RAINFALL MAP

Period : 01-08-2021 To 07-08-2021



Legend

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

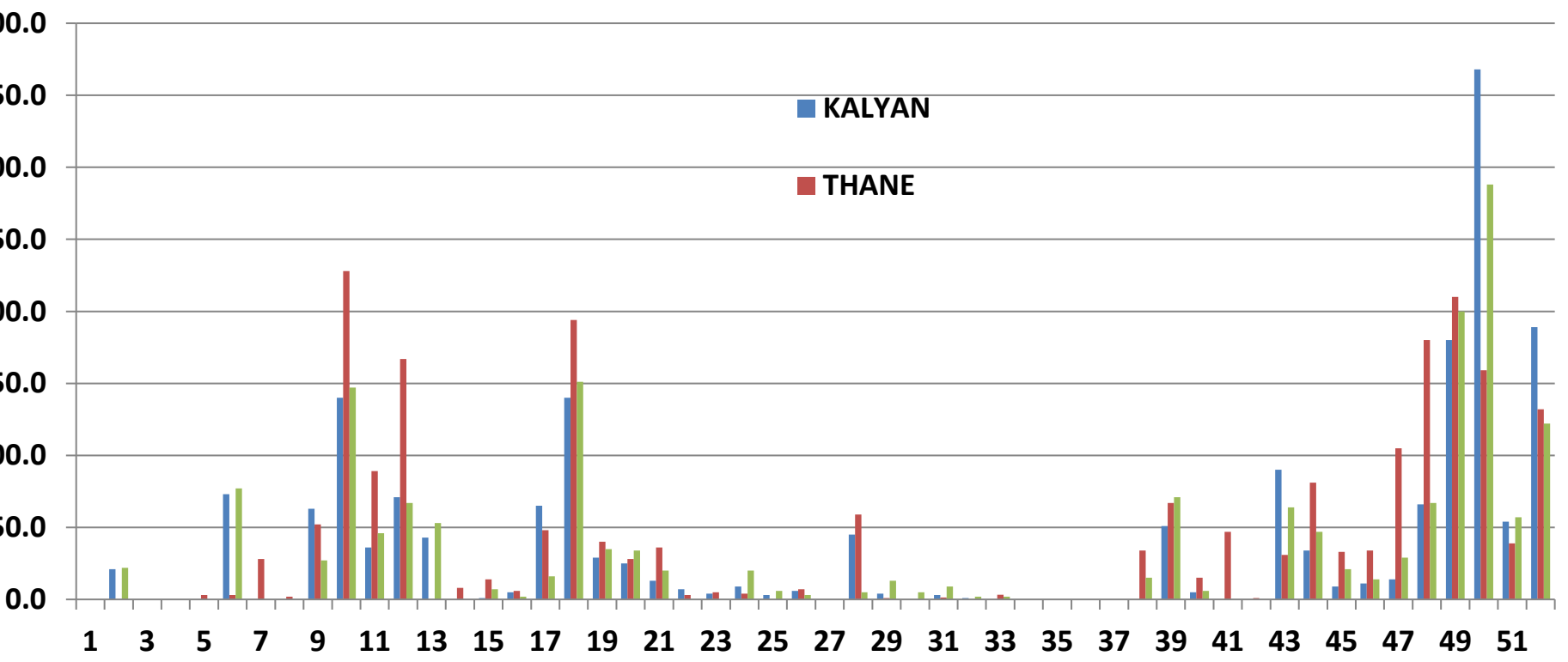
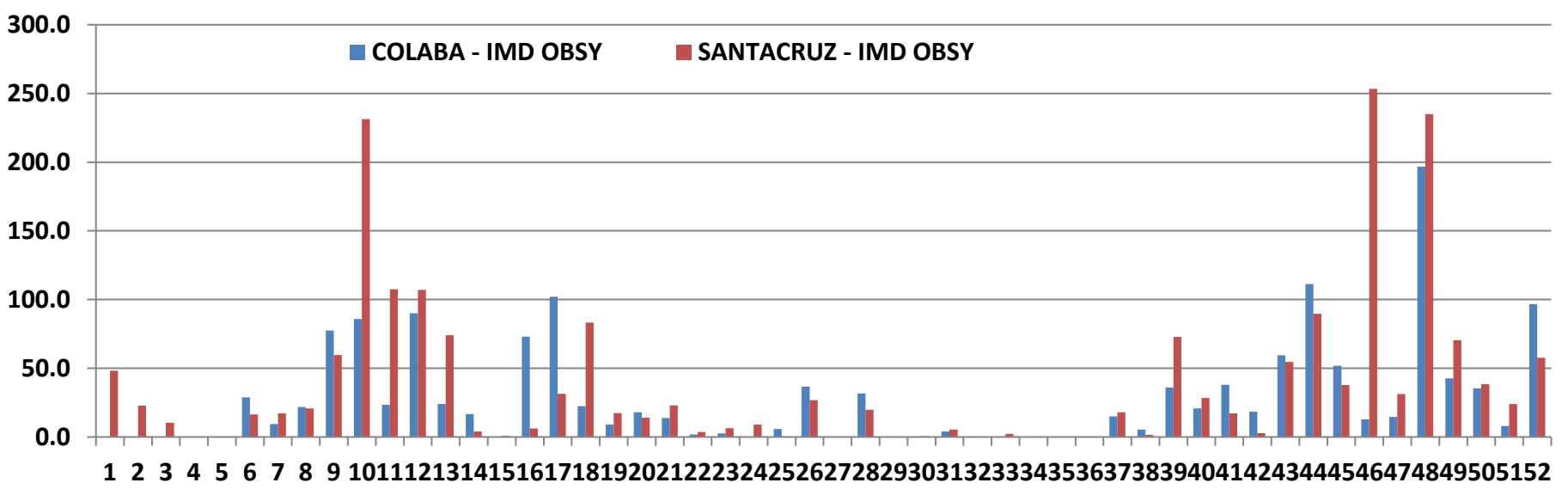
NOTES :

a) RainFall figures are based on operation data.

b) Small figures indicate actual rainfall (mm), while bold figures indicate Normal rainfall (mm).

Mumbai- 15-22 July 2021(a week of unusual spell-80-1200mm rainfall)

- A. 15-16 July- **SCZ-25.2cm Convective-Start of event with max in 2-3 hours at early morning**
- 16-17 July-11cm Thane
- B.17-18- **20-24 cm over Colaba and SCZ with max at 1-3am (occurrence of a VERY INTENSE SPELL over VIKHROLI-CHEMBUR areas of Mumbai in the early hours on Sunday with 20-22cm)**
- C. 18-19-8-10 cm- **Main Mumbai IMD, but sub-urban SANPADA-19CM, Thane and Ullahsnagar-20-22cm**
- D.19-20- **Rammandir-21cm, Kalyan 37 and Ullahsnagar-28cm**
- 20-21-8-11cm with moderate over the main city IMD stations and Sanpada 11 cm
- 21-22- Mahahlaxmi 14cm, Colaba-10cm, **13-18cm Kalyan and Thane**



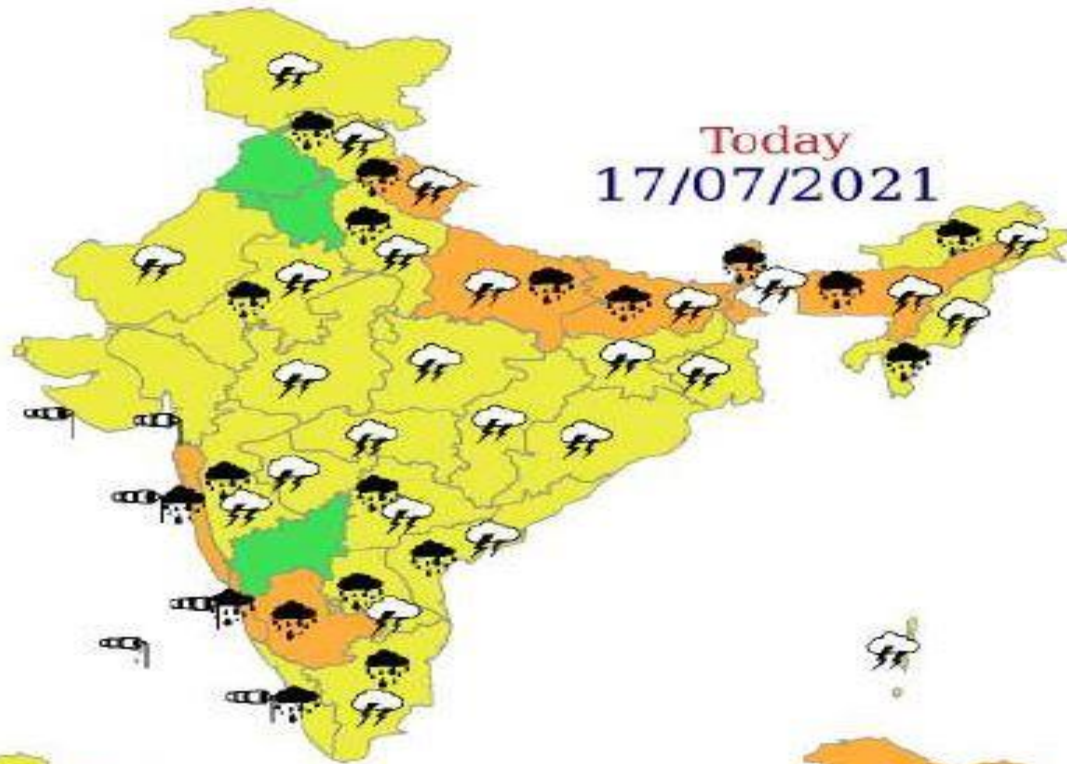
Synoptic evident

➤ 16-19 July spell

- EAST –WEST SHEAR ZONE near Konkan area
- Off-shore trough only Maharashtra-Karnatak coast
- Monsoon trough shifted over south Gujarat
- Circulation over the NEAR BY AREA

➤ 20-22 July

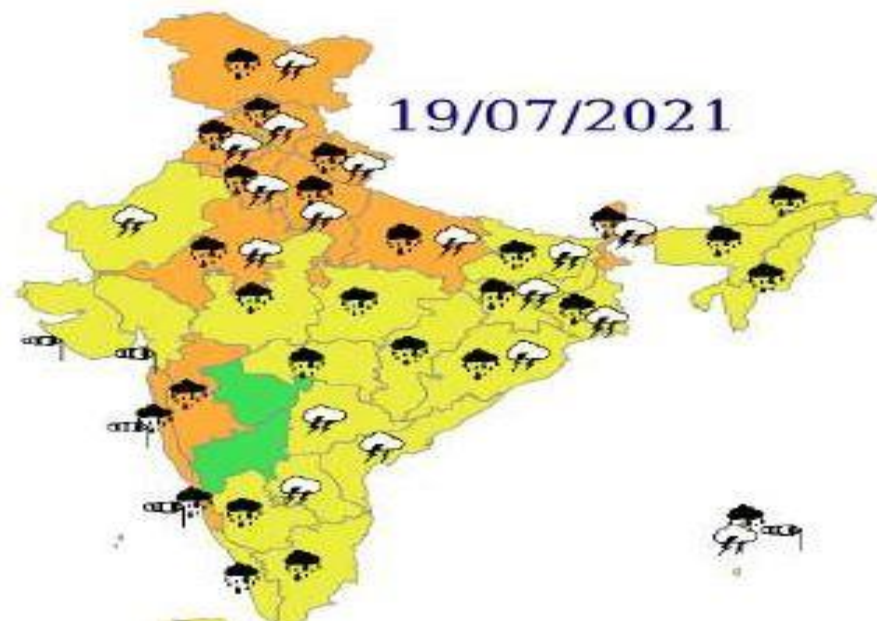
- Off-shore trough only Maharashtra coast-Kerala coast with more PG
- Monsoon trough over North Raj-Punjab
- Stronger lower level westerly and LOW formation



Today
17/07/2021



Tomorrow
18/07/2021



19/07/2021

Today
18/07/2021



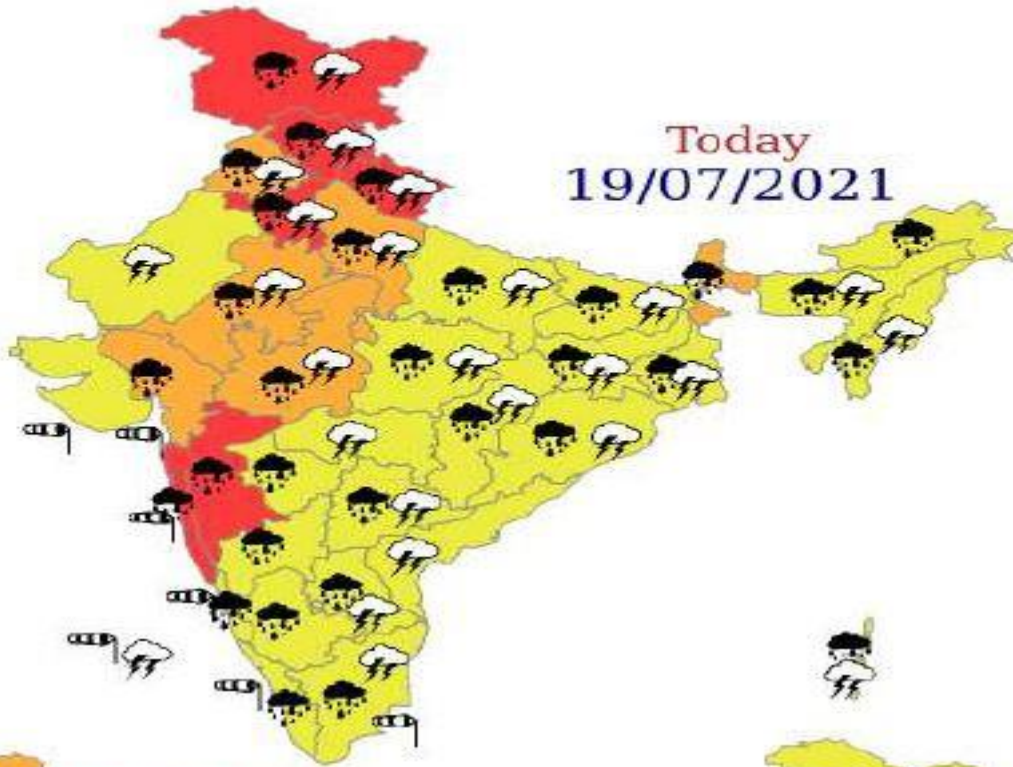
Tomorrow
19/07/2021



20/07/2021



Today
19/07/2021



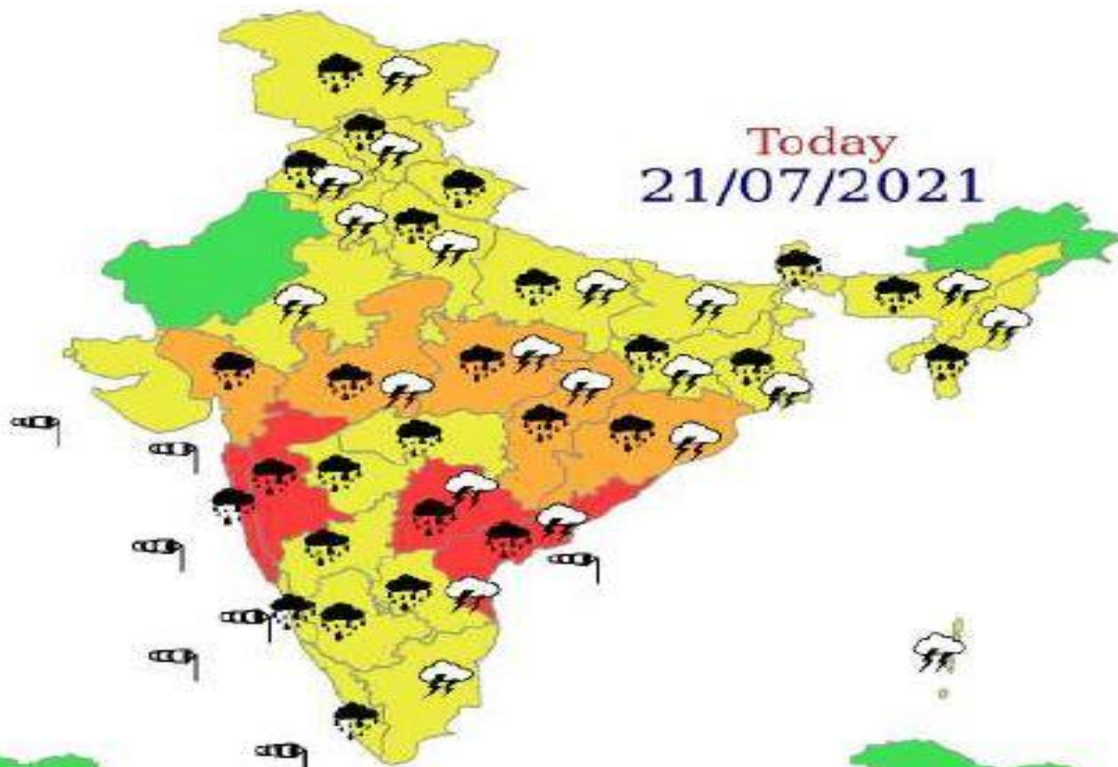
Tomorrow
20/07/2021



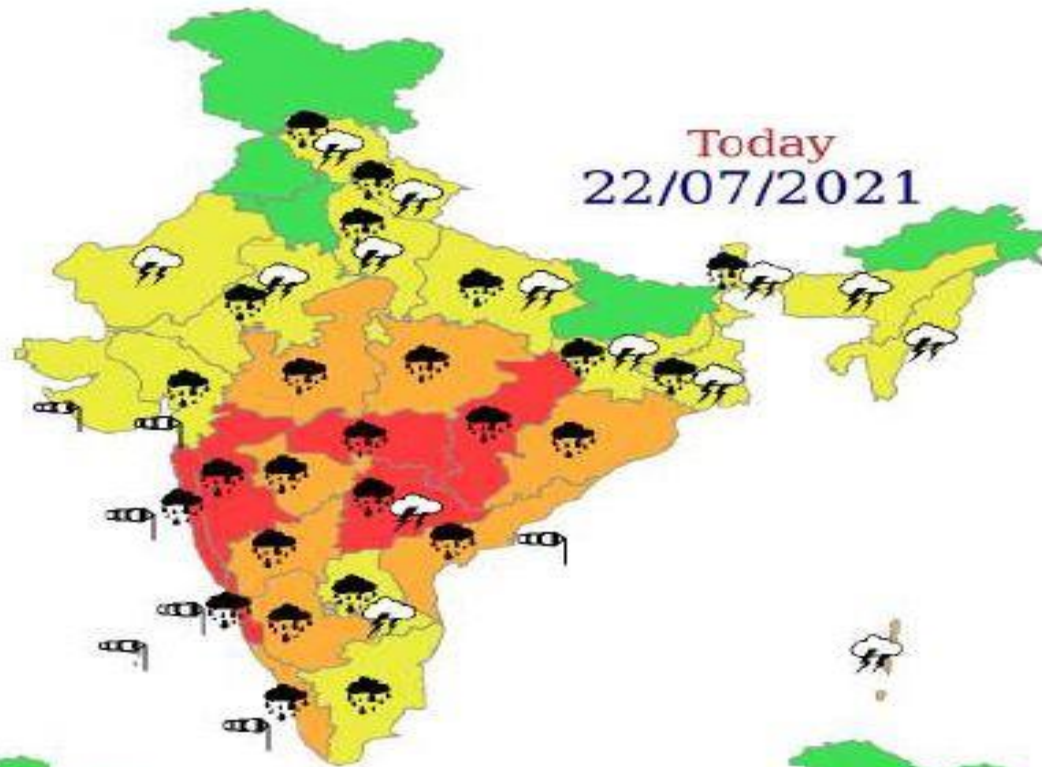
21/07/2021







Today
22/07/2021



Tomorrow
23/07/2021



24/07/2021



Rajasthan/MP Impact (August, 2021)

- Madhya Pradesh's Gwalior-Chambal region-1,225 villages across Shivpuri, Sheopur, Datia, Gwalior, Guna, Bhind and Morena
- Rajasthan Districts/Towns Affected: Dholpur, Baran, Swai Madhopur, Karauli, Jhalawar, Dausa, Tonk, Bundi, Kota, Jhalawar

1. Inundation and water logging
2. Several Kaccha houses collapsed
3. Wall collapsed

Pls see

- PPT of Sri Shasi, Krishan and Sri Shobhit

THANKS