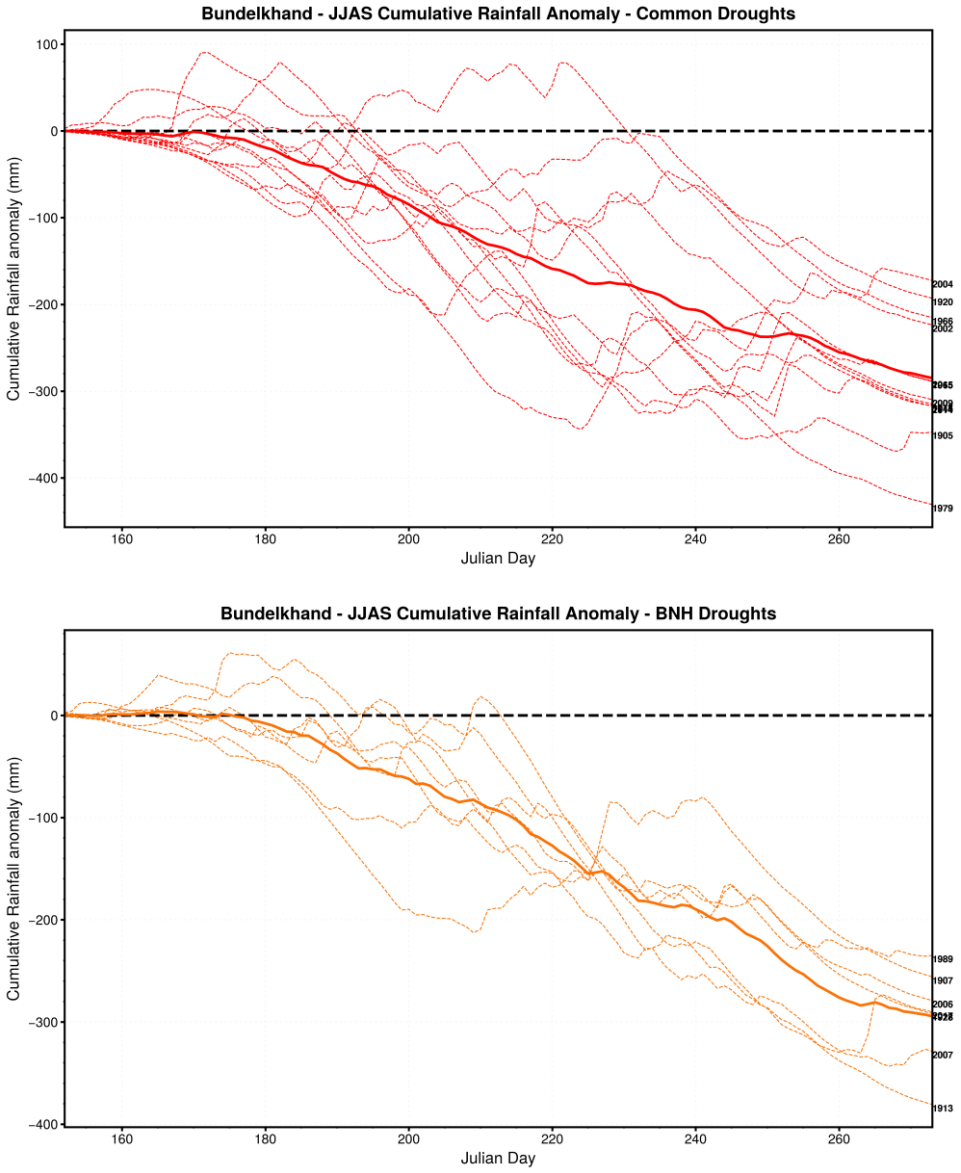
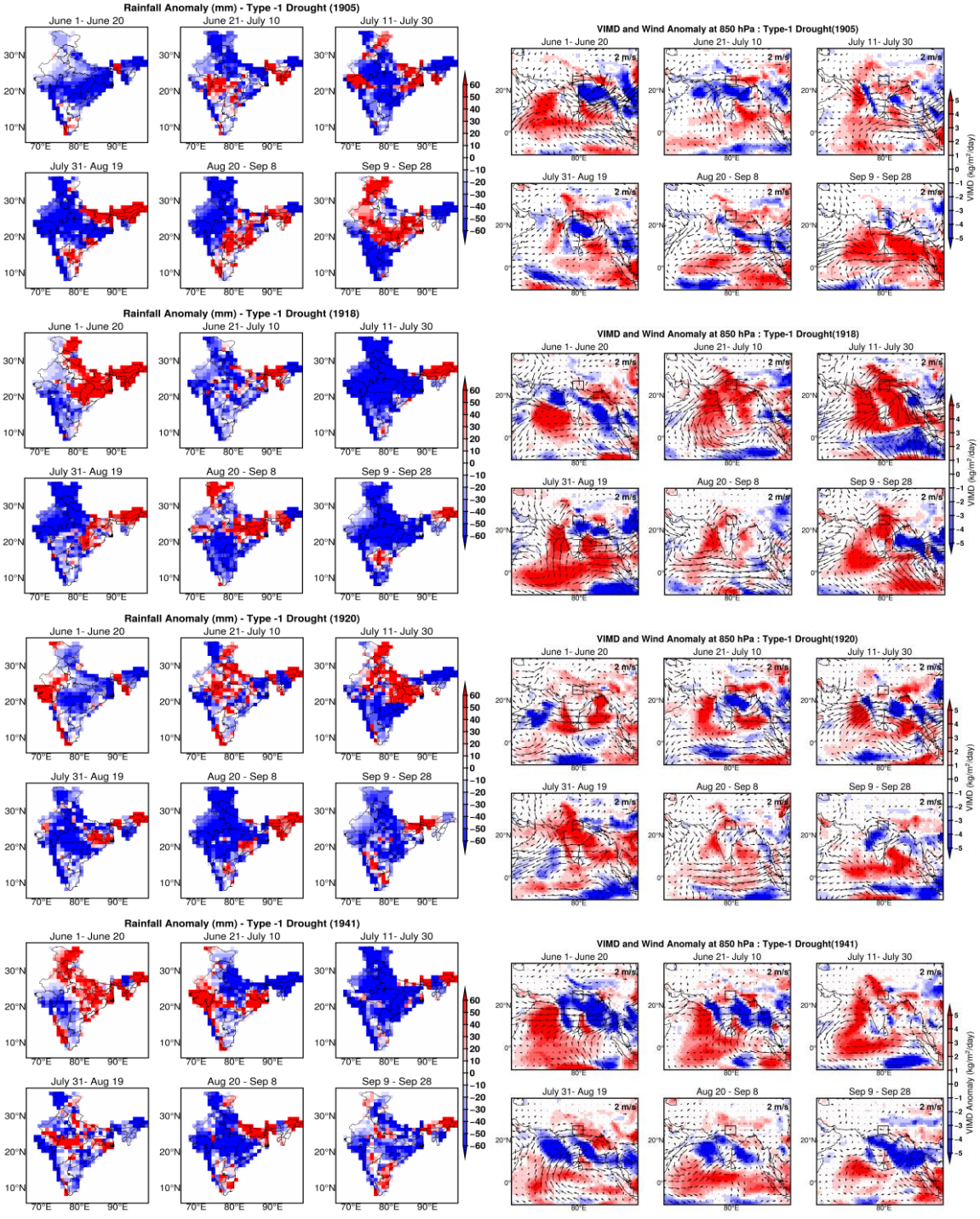
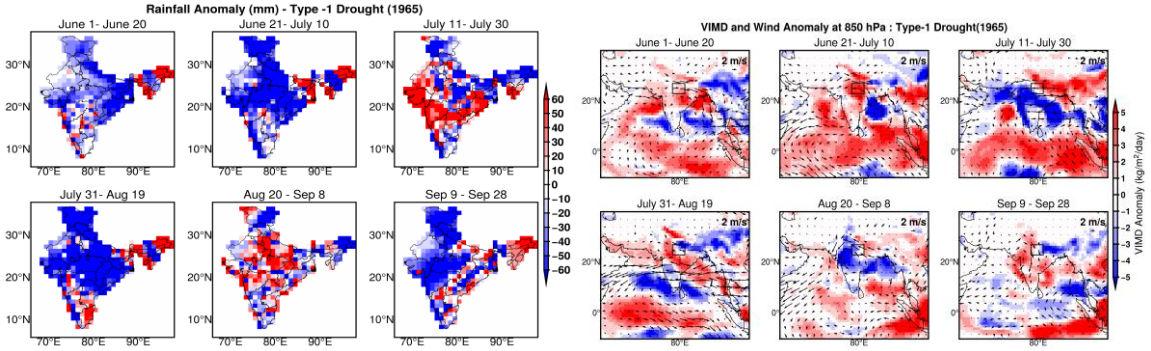
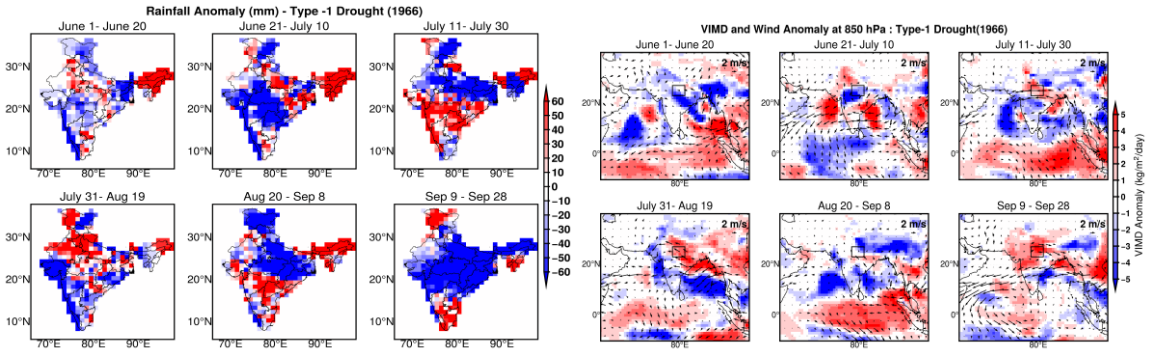


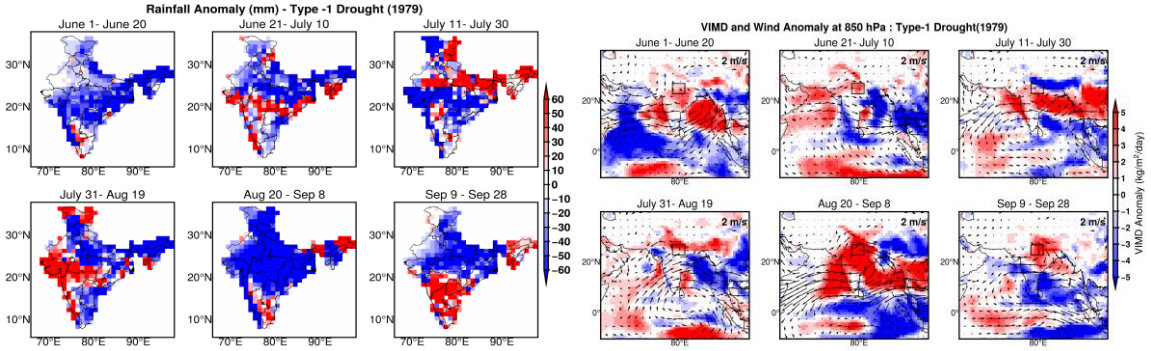
Cumulative rainfall anomaly (mm) averaged over Bundelkhand for each of the two types of drought years. Here common droughts refer to the Type-1 drought and BNH refers to Type-2 droughts. The variability of rainfall in the localized (Type-2/BNH) droughts is much lesser compared to the Type-1 (common) droughts.

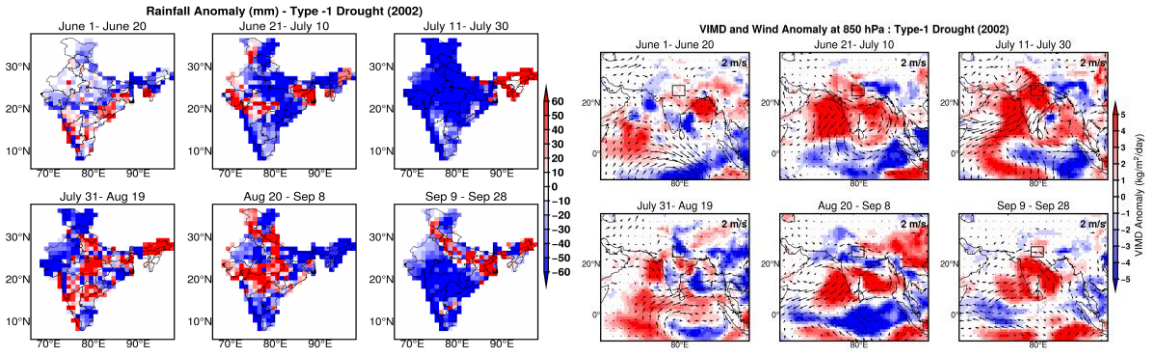
Rainfall, VIMD and Wind anomalies for each one of the Type-1 drought years.

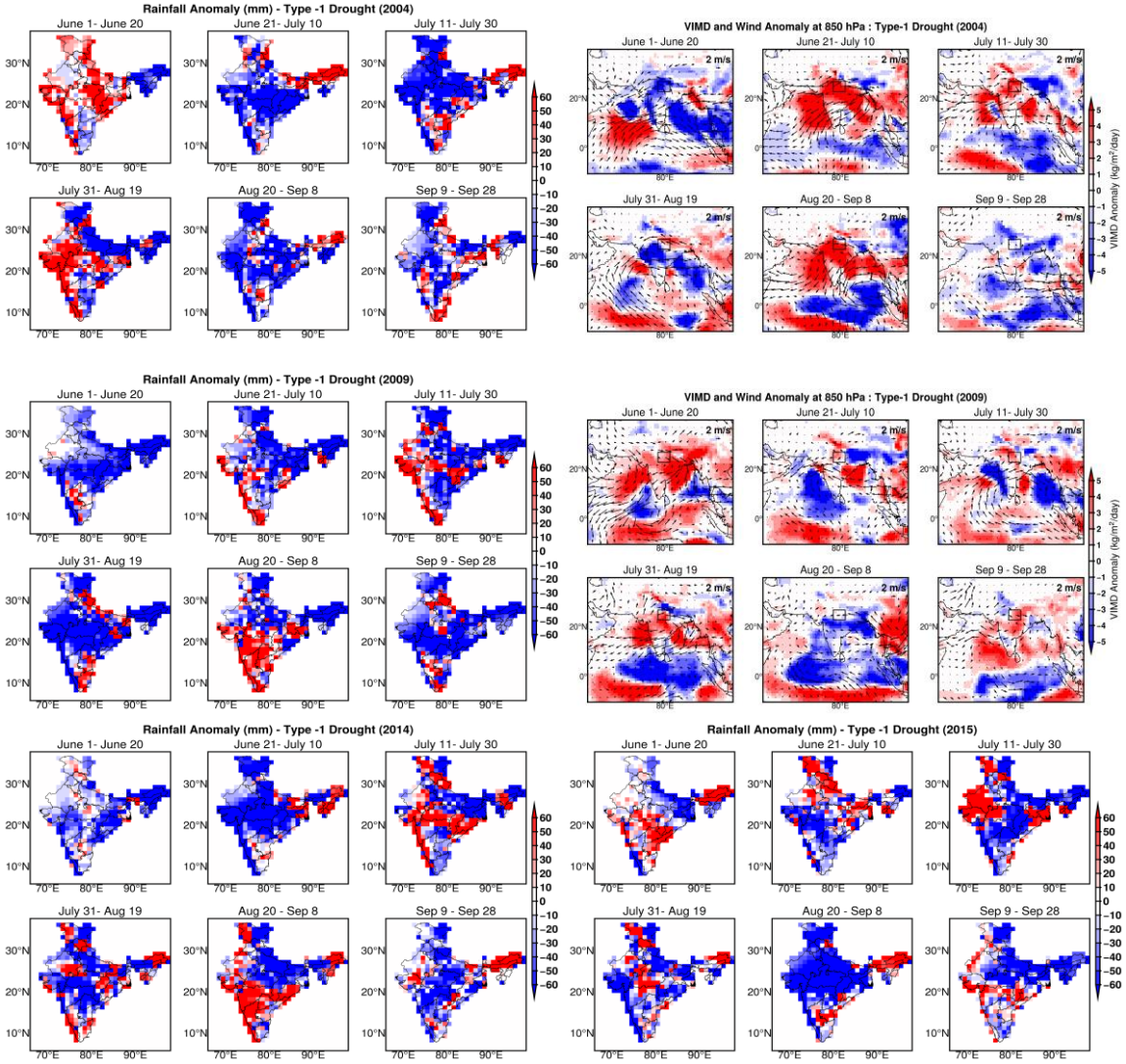



Rainfall Anomaly (mm) - Type -1 Drought (1965)
June 1- June 20
June 21- July 10
July 11- July 30
July 31- Aug 19
Aug 20 - Sep 8
Sep 9 - Sep 28
VIMD and Wind Anomaly at 850 hPa : Type-1 Drought(1965)
2 m/s
VIMD Anomaly (kg/m²/day)

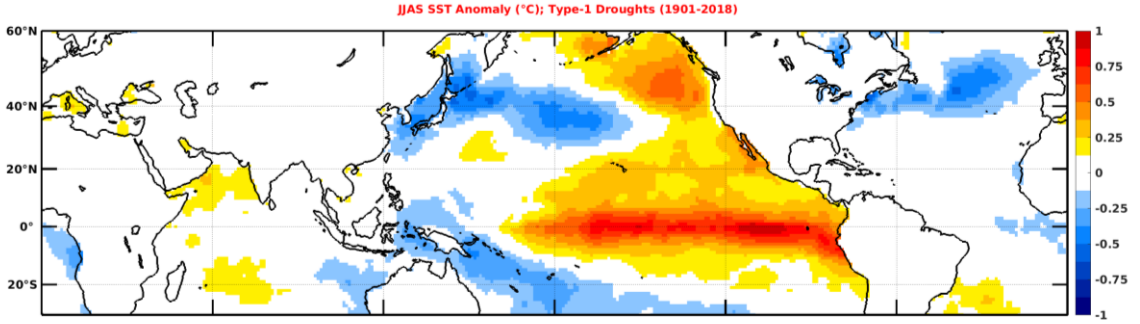

Rainfall Anomaly (mm) - Type -1 Drought (1966)
June 1- June 20
June 21- July 10
July 11- July 30
July 31- Aug 19
Aug 20 - Sep 8
Sep 9 - Sep 28
VIMD and Wind Anomaly at 850 hPa : Type-1 Drought(1966)
2 m/s
VIMD Anomaly (kg/m²/day)


Rainfall Anomaly (mm) - Type -1 Drought (1979)
June 1- June 20
June 21- July 10
July 11- July 30
July 31- Aug 19
Aug 20 - Sep 8
Sep 9 - Sep 28
VIMD and Wind Anomaly at 850 hPa : Type-1 Drought(1979)
2 m/s
VIMD Anomaly (kg/m²/day)


Rainfall Anomaly (mm) - Type -1 Drought (2002)
June 1- June 20
June 21- July 10
July 11- July 30
July 31- Aug 19
Aug 20 - Sep 8
Sep 9 - Sep 28
VIMD and Wind Anomaly at 850 hPa : Type-1 Drought (2002)
2 m/s
VIMD Anomaly (kg/m²/day)

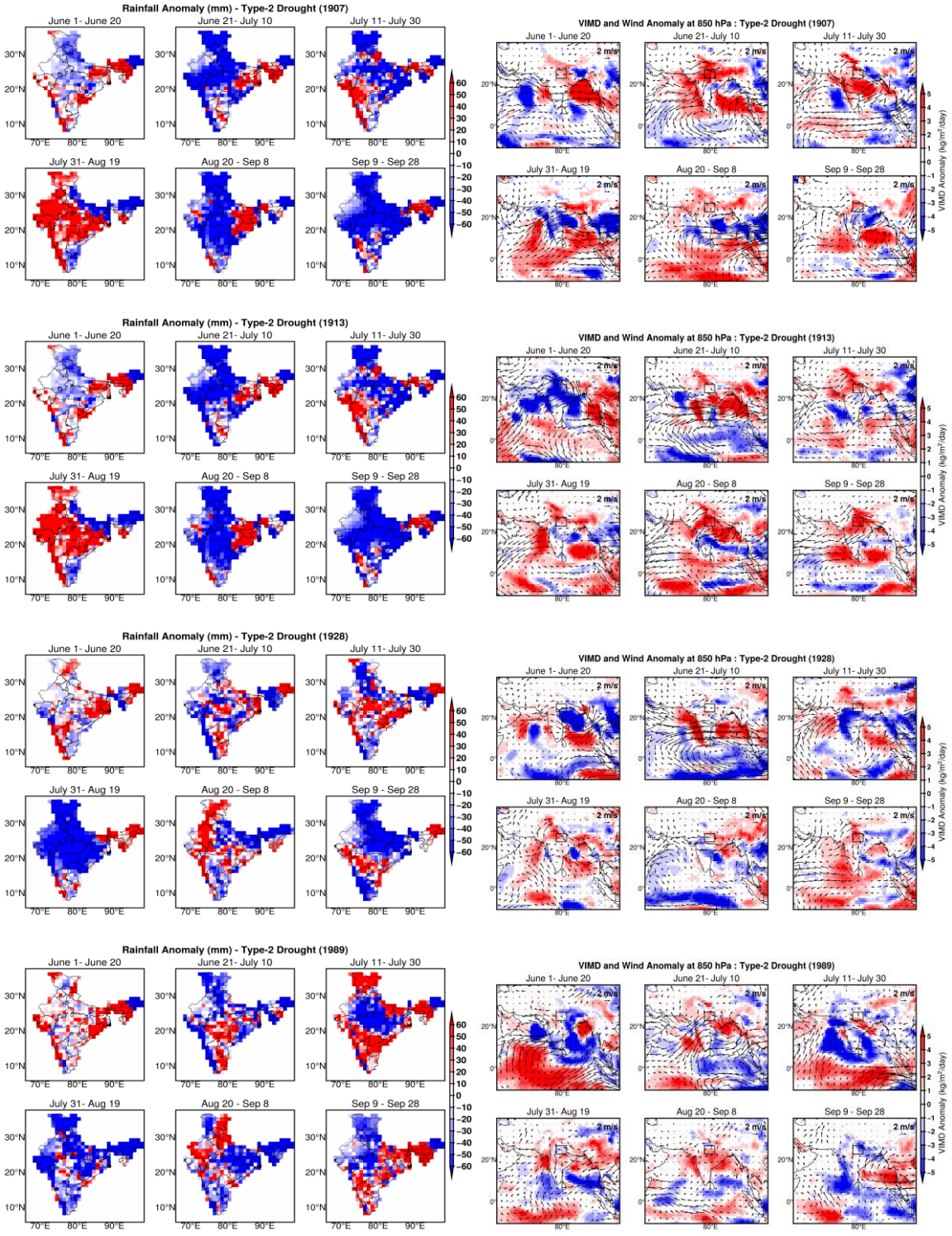


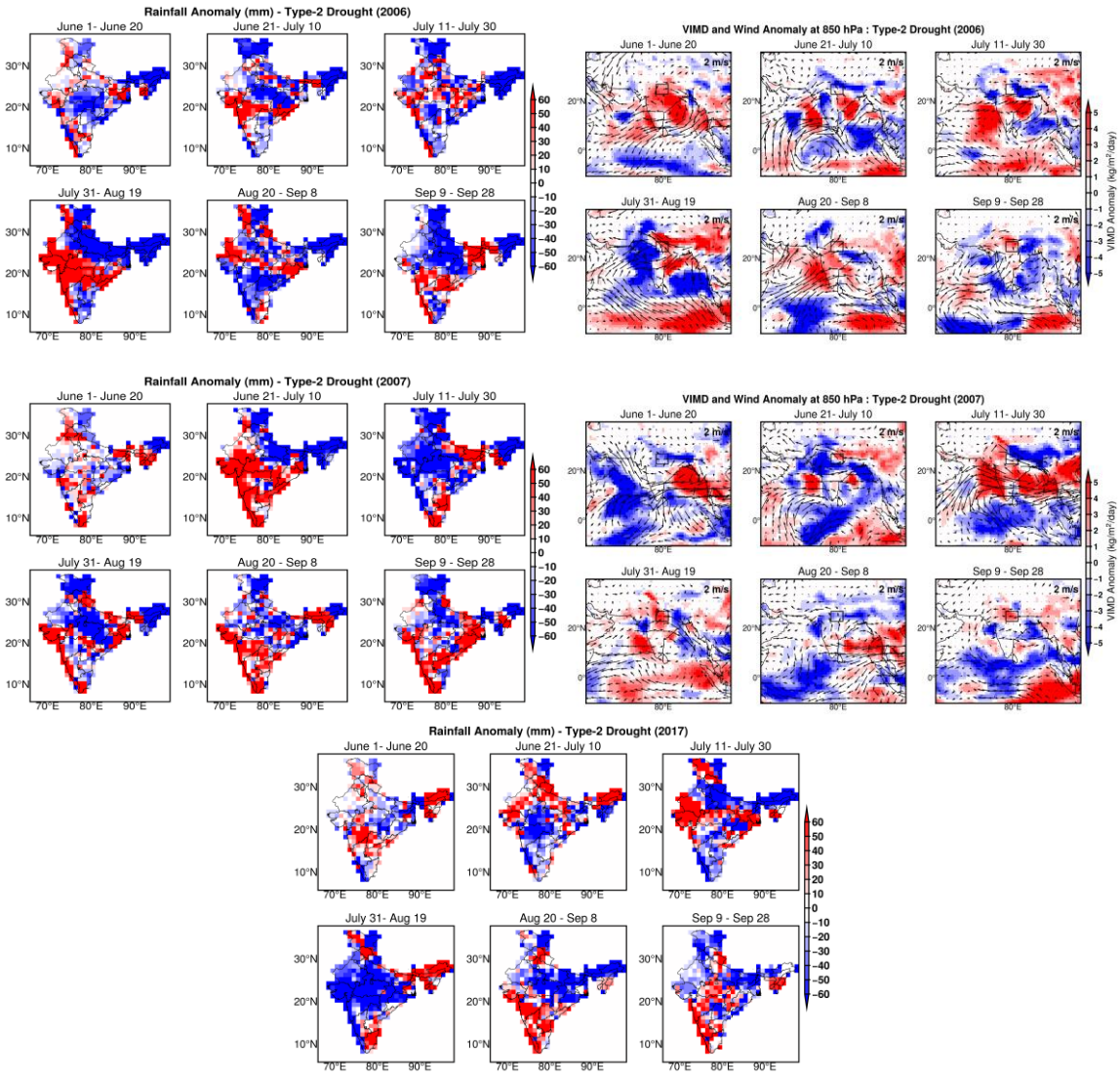
Type–1 droughts occurred in 1905, 1918, 1920, 1941, 1965, 1966, 1979, 2002, 2004, 2009, 2014 and 2015. These are large-scale droughts and are generally linked to the occurrence of positive phase of ENSO (El Nino)[1]. The SST anomalies for the drought composite confirm the same.



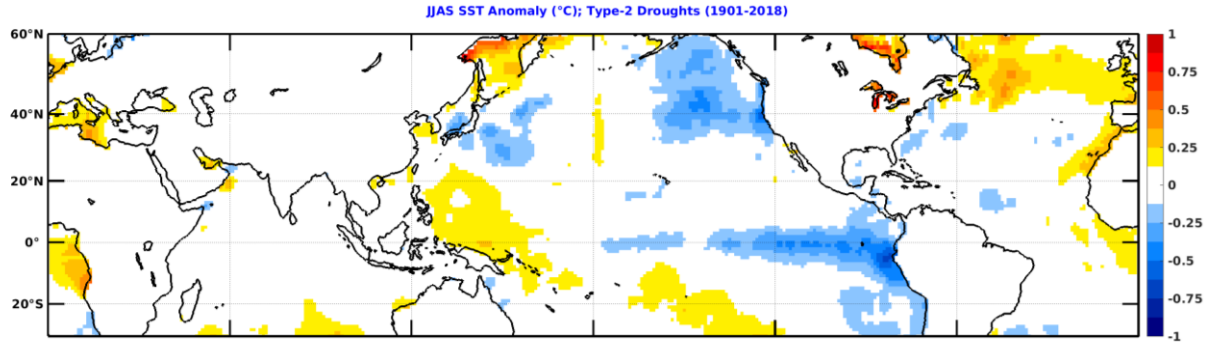
1. Borah, P. J., Venugopal, V., Sukhatme, J., Muddebihal, P., & Goswami, B. N. (2020). Indian monsoon derailed by a North Atlantic wavetrain. Science. https://doi.org/aay6043

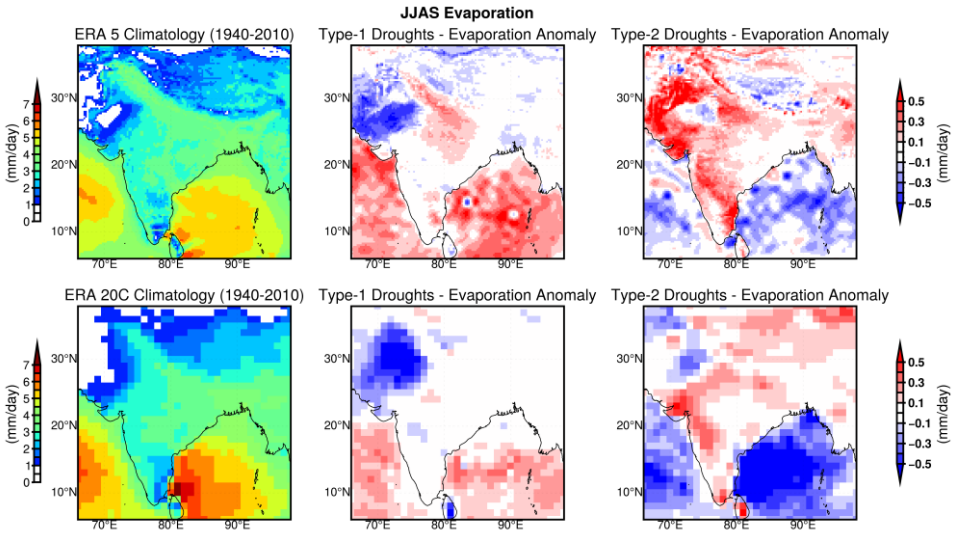
Rainfall, VIMD and Wind anomalies for each one of the Type-2 drought years.



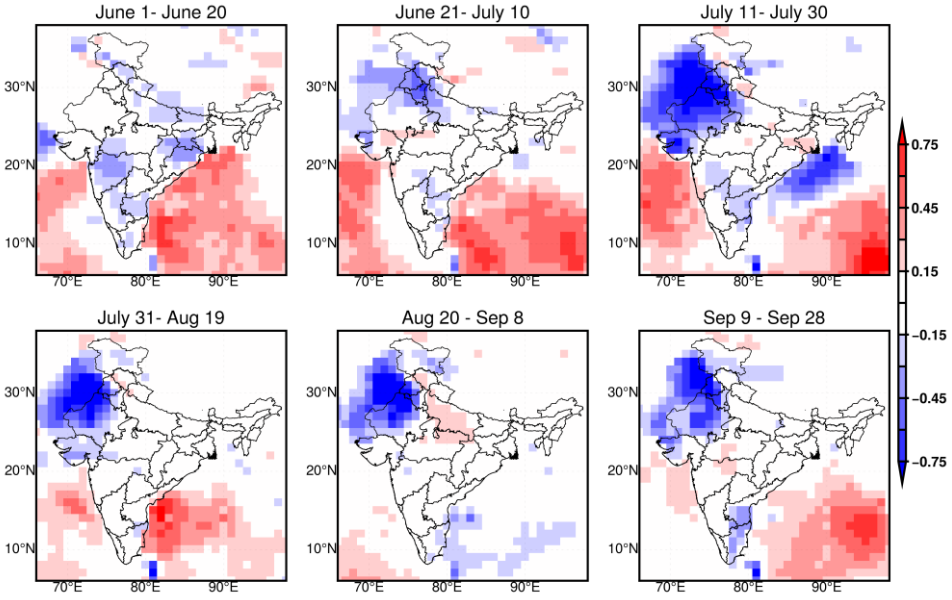


Type–2 droughts occurred in 1913, 1928, 1989, 2006, 2007 and 2017. These small-scale droughts are confined to the Bundelkhand region[2]. The SST anomalies for the drought composite indicate no presence of warmer SSTs in the Pacific, but a weak La Nina like condition.




JJAS Evaporation
ERA 5 Climatology (1940-2010)
Type-1 Droughts - Evaporation Anomaly
Type-2 Droughts - Evaporation Anomaly
ERA 20C Climatology (1940-2010)
Type-1 Droughts - Evaporation Anomaly
Type-2 Droughts - Evaporation Anomaly
(mm/day)
0
1
2
3
4
5
6
7
0.5
0.3
0.1
−0.1
−0.3
−0.5
30°N
20°N
10°N
70°E
80°E
90°E

Evaporation Anomaly (mm/day) - Type -1 Droughts (1901-2010); ERA20C



Evaporation Anomaly (mm/day) - Type-2 Droughts (1901-2010); ERA20C