

Monsoon 2025 What the numbers tell us

Rajit Sengupta

Associate Editor, Down To Earth rajit@cseindia.org

Disastrous spike India endured extreme weather events on 97% of the days this year, claiming 3,502 lives. This marks an alarming increase from previous years Human deaths (January 1-August 31) due to Lightning and storms Cloudbursts Heavy rains, floods and landslides 3,000-1,341 2,492 2,249 108 902 2.000 -1,874 568 19 31 758 2,053 32 1,000 -1,662 1.559 1,084 2023 2024 2025 Number of days with extreme weather events' 165 out of 177 out of 243 days 243 days 244 days 243 days *Analysis for only heavy rains, floods and landslides, cloudbursts and lightning and storms between January 1 and August 31 Source: "India's Atlas on Weather Disasters", maintained by the data centre of Down To Earth and Centre for Science and Environment

Unusual from the start

Between January and August 31, 2025, India experienced rain-related extreme weather events on 97% of days. This is the highest since 2022

These events led to almost 3,502 deaths, or 14 deaths a day on average. Almost 1,000 additional deaths from 2024

Source: CSE-DTE Data Centre (January 1-August 31)

Deluge in northwest This monsoon*, 249 districts recorded excess or large excess rainfall. Over half of the districts are in the northwest % of districts Total number of districts Districts with excess (20–59% surplus) with excess, large excess rainfall or large excess (60% or more surplus) rainfall Central 189 East and _21 180 Northeast Northwest 124 208 South 150 Peninsula 100 150 200 *June 1, 2025 to September 6, 2025; Source: India Meteorological Department

Abnormally wet monsoon for the Northwest

- 249 districts in India experienced excess or large excess rainfall between June 1, and September 6, 2025. Every second of these wettest districts were in the Northwest
- In other words, 60% of the districts in Northwest recorded excess of large excess rainfall

Source: India Meteorological Department (June 1- September 6, 2025)



received excess or large excess rains



surplus On June 1-September 5, the Union Territory received 687.3 mm roinfall, against the normal 477.5 mm

WEEKLY ANOMALY

Four of the 13 weeks recorded large excess and excess rainfall



Aug 27

Source India

Melaorological Department

HIMACHAL PRADESH

83% districts received excess or large excess rains



surplus On June 1-September 5, the state received 948 mm rainfall, against the normal 643.3 mm

WEEKLY ANOMALY Six of the 13 weeks recorded large excess

and excess rainfall		and excess rainfall		
-78% Week ording Jun 11		-55% Weak entling Jun 11		
22% Jun 18		-2% Jun 18		
5% Jun 25		15% Jun 25		
195% Jul 2		96% Jul 2		
-24% Jul 9		19% Jul 9		
-26% Jul 16	Large	-29% Jul 16	Large	
11% Jul 23	or more)	-17% Jul 23	or more)	
-2% Jul 30	(20 to 59%)	-24% Jul 30	Excess (20 to 59%)	
68% Aug 6	Normal (-19 to 19%)	78% Aug 6	Normal (-19 to 1990)	
-23% Aug 13	Deficient (-59 to -20%)	-1% Aug 13	Daffd art (-59 to -20%)	
76% Aug 20	Large	47% Aug 20	(-SWIG -20%)	
175% Aug 27	deficient (-99 to -60%)	15% Aug 27	deficient (-99 to -60%)	
314% Sep 3	Soutie India Melaorological Department	190% Sep 3	Source: India Metaorological Department	

UTTARAKHAND 54% districts received excess or large excess mins



surplus On June 1-September 5, the state received 1,277.8 mm rainfall, against the namal 1,029,2 mm

WEEKLY ANOMALY Four of the 13 weeks. recorded large excess

-55% Weak ending Jun 11	
-2% Jun 18	
15% Jun 25	
96% Jul 2	
19% Jul 9	
-29% Jul 16	Large excess (60%
-17% Jul 23	or mone)
-24% Jul 30	(20 to 59%)
78% Aug 6	Normal (-19 to 1990)
-1% Aug 13	Dafid ent (-59 to -20%)
47% Aug 20	Lorga deficient
15% Aug 27	(-99 to -60%) Source: India
190%	SOURCE TOO

Washout weeks

Jammu and Kashmir

Until August 13, the Union Territory (UT) recorded a 10% rainfall deficit. Between August 14 and 20, it received 42% surplus rainfall, reducing the season's cumulative shortfall to 5%. Over the next two weeks, the UT received extremely heavy rainfall, 260% surplus between August 21 and 24 and 241% surplus between August 28 and September 3, leaving it with a cumulative surplus of 43%.

Puniah

Weekly rainfall departures from normal

- Large Excess (surplus rainfall of 60% or more) Excess (20 to 59%) Normal (-19 to 19%)
- Deficient (-59 to -20%) Large deficient (-99 to -60%)

-80% Week ending Jun 11	3% Jun 18	-25 % Jun 25	80% Jul 2	-19% Jul 9
11% Jul 16	-34% Jul 23	-24% Jul 30	5% Aug 6	-59% Aug 13
20% (Aug 20)	388% (Aug 27)	454% (Sep 3)		

Note: Flood extent derived using the Otsu method. The map is indicative and should be verified with ground observations Source: India Meteorological Department and ground reports, Sentinel 1 SAR via Google Earth Engine

Himachal Pradesh

The Himalayan state faced three extreme rain spells this monsoon. From June 26 to July 2, the state received 195% excess rainfall, with Mandi and Shimla districts recording 482% and 433% surpluses. The next heavy rainfall spell was recorded between July 31 and August 6. The third spell, ongoing since August 14, has swelled Punjab's Ravi, Beas and Sutlej rivers.

Uttarakhand

Four of the 13 weeks recorded excess or large excess rainfall.

Punjab

Between August 21 and September 3, Punjab was battered by back-to-back deluges, with rainfall surpluses of 388% in the first week and 454% in the next

Source: India Meteorological Department (June 1- September 6, 2025)

Thanks

rajit@cseindia.org