Government of India
Ministry of Earth Sciences (MoES)
India Meteorological Department
Meteorological Centre, Shimla

Monsoon Report 2024

Date of Issue: 02nd October, 2024

1. Main Features:-

1. In the year 2024, the southwest monsoon entered in Himachal Pradesh on 27th June, 2024 and covered entire state by 29th June, 2024, slightly delayed compared to normal onset date of 25th June. In last 124 years, the earliest onset of southwest monsoon was on 09th June, 2000 and most delayed onset was on 05th July, 2010.
2. The Southwest monsoon seasonal (June to September) rainfall has been normal over the state with 600.9 mm of actual rainfall during monsoon 2024 against its normal 734.4 mm with -18% departures.
3. This year, Himachal Pradesh received 97th highest rainfall of 600.9 mm in monsoon season in the last 124 years. However, the highest rainfall (1314.6 mm) was recorded in the year 1922 for the period of 1901 to 2024.

2. Progress of Southwest Monsoon:-

1. In the month of June, Himachal Pradesh received 46.2 mm against its normal value of 101.1 mm which was 54% lesser than its Long Period Average. Districts Una, Solan, Sirmaur, Shimla, Mandi, Lahaul-Spiti, Kullu and Bilaspur received deficient rainfall and remaining districts received large deficient rainfall.
2. In the month of July, Himachal Pradesh received 180.5 mm against its normal value of 255.9 mm which was 29% lesser than its Long Period Average. District Kangra has received highest rainfall amount viz. 581.5 mm. Districts Kangra, Kullu, Mandi and Shimla received normal rainfall whereas Districts Bilaspur, Chamba, Hamirpur, Kinnaur, Sirmaur, Solan and Una received deficient rainfall and District Lahaul-Spiti received large deficient rainfall.
3. In the month of August, Himachal Pradesh received 243.6 mm against its normal value of 256.8 mm which was 5% lesser than its Long Period Average. Districts Shimla, Sirmaur and Bilaspur received excess rainfall whereas Districts Mandi, Kangra, Solan, Chamba and Una received normal rainfall; Districts Hamirpur, Kullu and Kinnaur received deficient rainfall and District Lahaul-Spiti received large deficient rainfall.
4. In the month of September, Himachal Pradesh received 125.3 mm against its normal value of 120.6 mm which was 4% higher than its Long Period Average. District Sirmaur received large excess rainfall; Districts Shimla, Mandi, Kinnaur, Kangra and Bilaspur received excess rainfall; District Lahaul-Spiti received large deficient rainfall and rest of the districts received normal to near normal rainfall.
5. Extremely heavy rainfall was reported over Dharamshala and Palampur on 06th July; over Palampur on 1st August and over Dhaulakuan on 26th September during this monsoon season.
6. In the month of June, only 1 day reported very heavy rainfall; in July, 6 days reported very heavy rainfall; in August, 7 days and in the September, 3 days reported very heavy rainfall over some districts of Himachal Pradesh during this monsoon season.

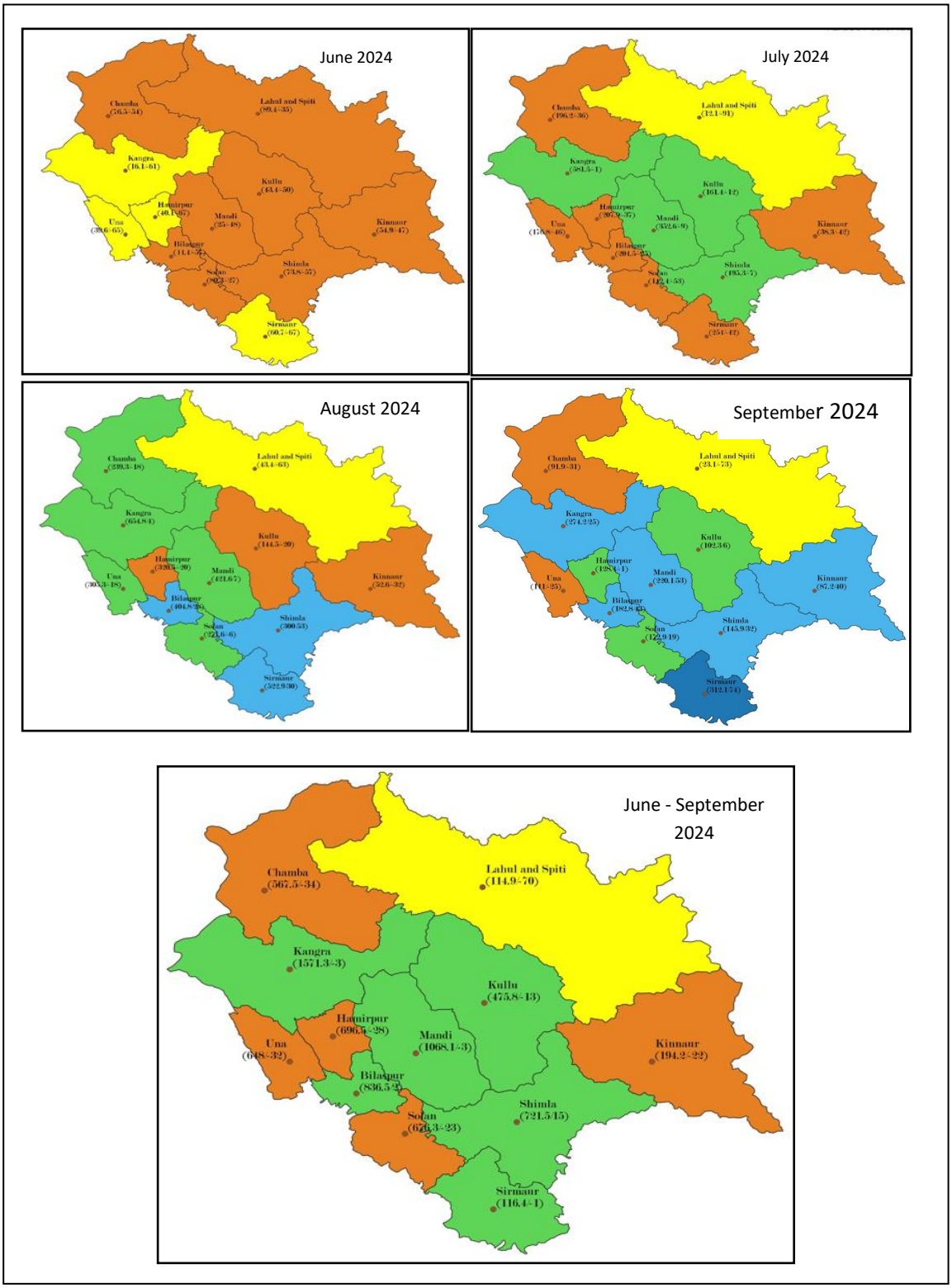
3. Withdrawal of Southwest Monsoon:-

The Southwest Monsoon has withdrawn from the entire Himachal Pradesh today, the 02nd October, 2024. However, the normal date of withdrawal of SW Monsoon from Himachal Pradesh is 25th September. Simultaneously, post-monsoon season has been commenced over the Himachal Pradesh.

The onset and withdrawal dates of SW Monsoon from Himachal Pradesh in the last few years are given below:-

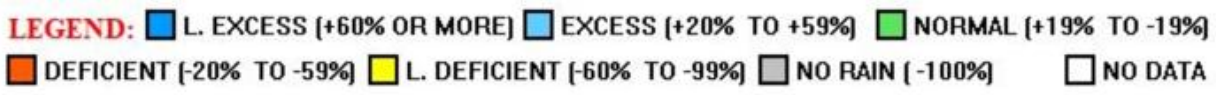
Year	Onset	Withdrawal
1997	27.06.1997	23.09.1997
1998	17.06.1998	28.09.1998
1999	20.06.1999	21.09.1999
2000	09.06.2000	23.09.2000
2001	23.06.2001	18.09.2001
2002	04.07.2002	20.09.2002
2003	27.06.2003	27.09.2003
2004	18.06.2004	27.09.2004
2005	26.06.2005	28.09.2005
2006	30.06.2006	27.09.2006
2007	26.06.2007	02.10.2007
2008	13.06.2008	29.09.2008
2009	30.06.2009	28.09.2009
2010	05.07.2010	28.09.2010
2011	25.06.2011	26.09.2011
2012	27.06.2012	26.09.2012
2013	15.06.2013	19.09.2013
2014	01.07.2014	05.10.2014
2015	24.06.2015	29.09.2015
2016	21.06.2016	05.10.2019
2017	01.07.2017	30.09.2017
2018	27.06.2018	01.10.2018
2019	02.07.2019	11.10.2019
2020	24.06.2020	30.09.2020
2021	13.06.2021	10.10.2021
2022	29.06.2022	03.10.2022
2023	24.06.2023	06.10.2023
2024	27.06.2024	02.10.2024

4. Monthly And Seasonal District Wise Observed Rainfall(mm) and its Departures(%) from LPA



5. Comparison of actual precipitation and departure (%) in HP for period 2010-2024 for September:-

Year	Actual	%Dep.
2010	137.6	47.0
2011	137.6	-24.0
2012	142.4	6.0
2013	142.4	-52.0
2014	127.7	-32
2015	127.7	-42
2016	127.7	-55
2017	127.7	-17
2018	127.7	111
2019	127.7	-27
2020	127.7	-77
2021	127.7	36
2022	120.6	12
2023	120.6	-42
2024	120.6	4



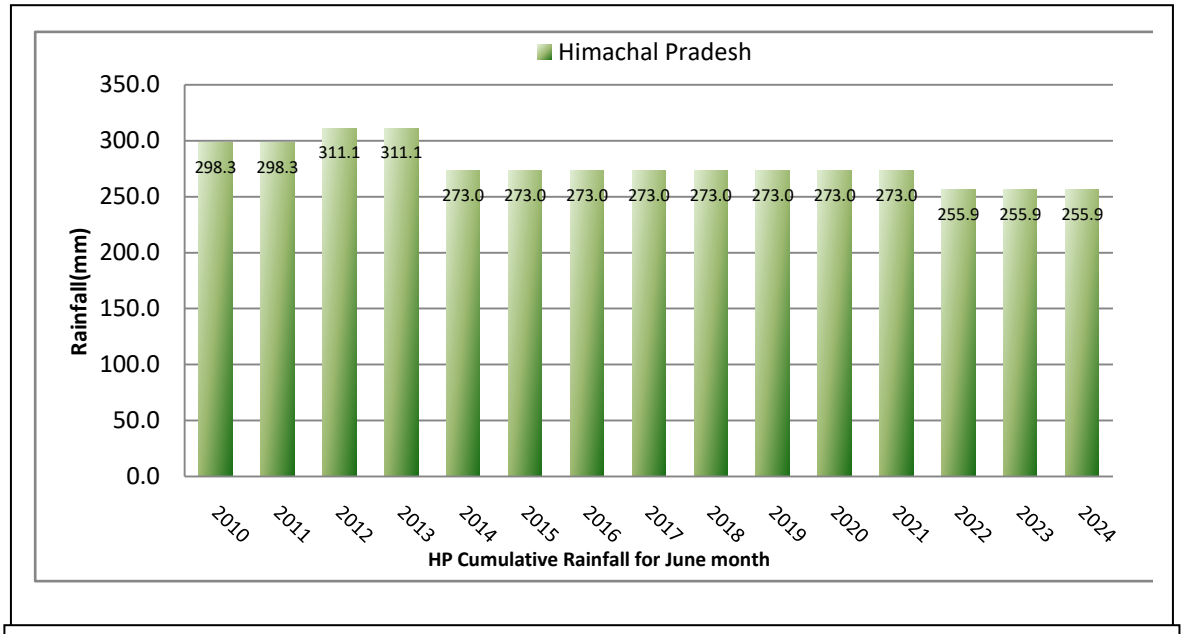
6. Comparison of actual precipitation and departure (%) in HP for period 2010-2024 for monsoon season-

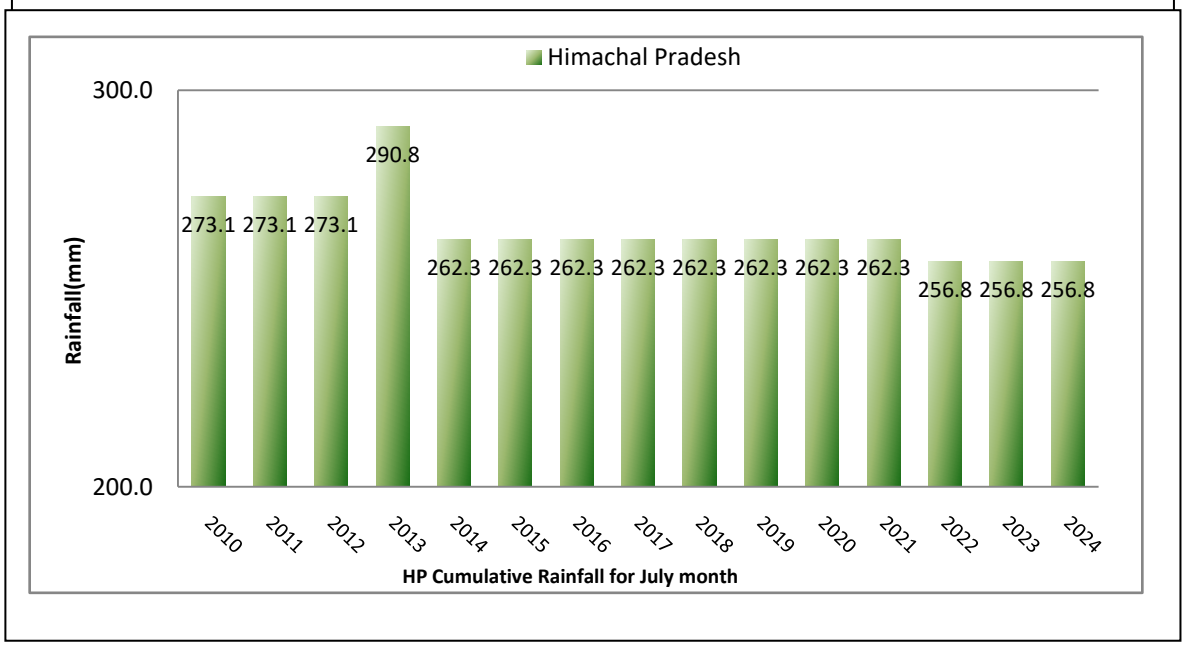
Year	Actual	%Dep.
2010	888.5	10.6
2011	730.3	-9.1
2012	701.8	-15.0
2013	776.9	-7.9
2014	522.2	-31.6
2015	638.2	-16.4
2016	623.9	-18.3
2017	717.2	-6.1
2018	927.0	21.4
2019	686.9	-10.0
2020	567.4	-25.7
2021	688.6	-9.8
2022	716.2	-2.5
2023	886.0	21.0
2024	600.9	-18.0

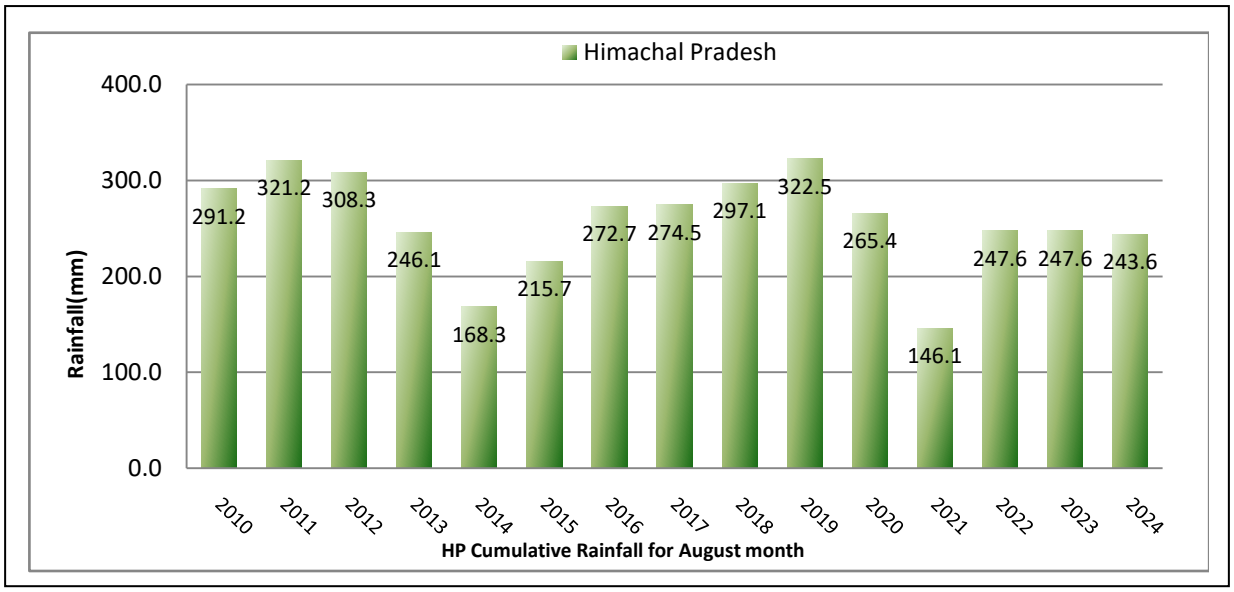
7. Monthly and Seasonal Rainfall:-

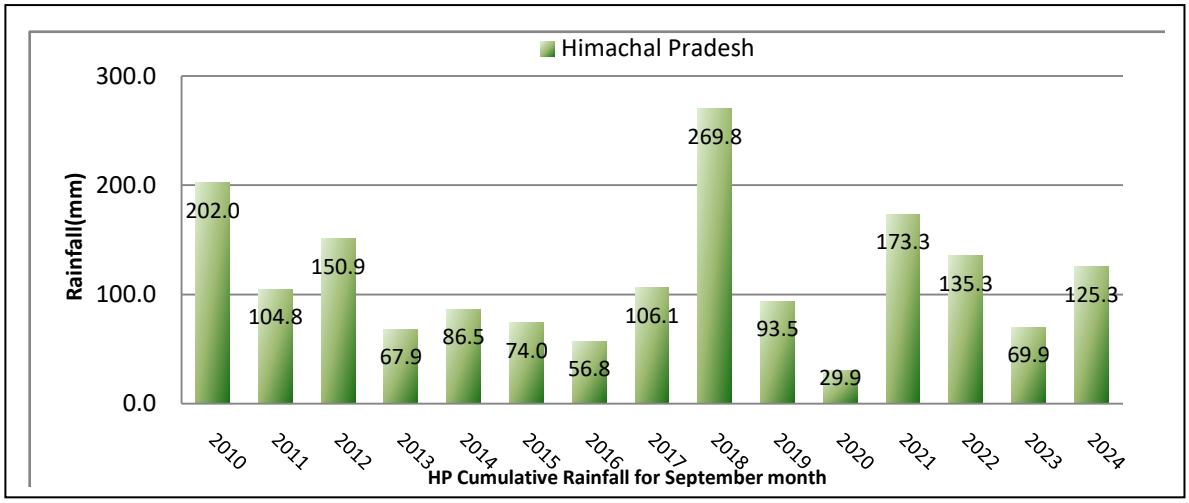
Month / Rainfall	Actual(mm)	Normal(mm)	Departure (%)
June	46.2	101.1	-54
July	180.5	255.9	-29
August	243.6	256.8	-5
September	125.3	120.6	4
Seasonal	600.9	734.4	-18

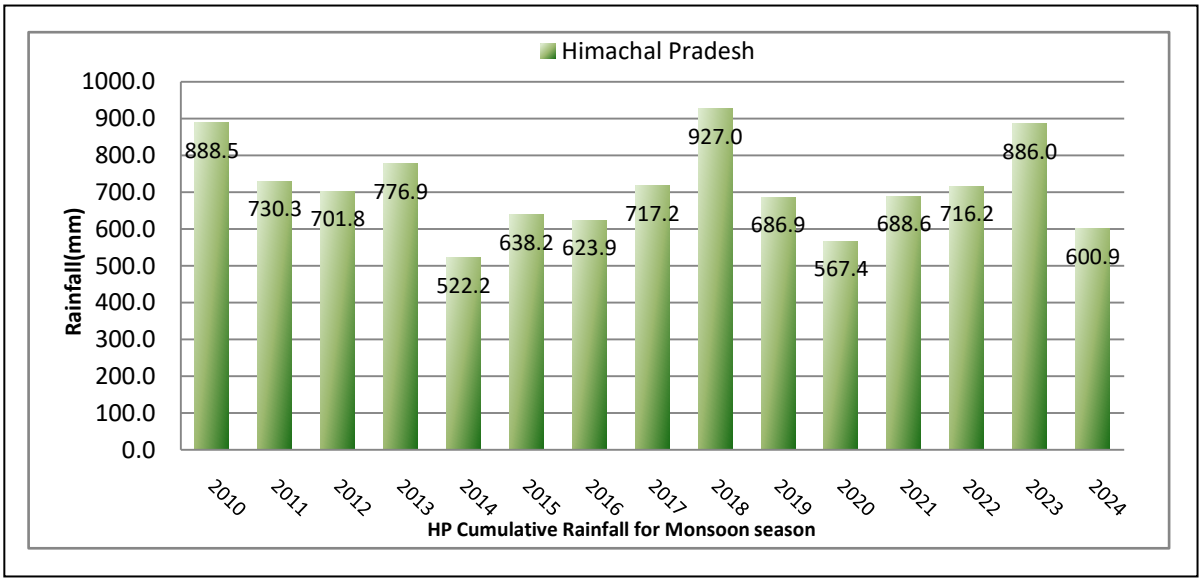
8. Monthly and Seasonal rainfall (mm) comparison from 2010-2024:-






Himachal Pradesh
Rainfall(mm)
400.0
300.0
200.0
100.0
0.0
291.2
321.2
308.3
246.1
168.3
215.7
272.7
274.5
297.1
322.5
265.4
146.1
247.6
247.6
243.6
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
HP Cumulative Rainfall for August month


Himachal Pradesh
Rainfall(mm)
300.0
200.0
100.0
0.0
202.0
104.8
150.9
67.9
86.5
74.0
56.8
106.1
269.8
93.5
29.9
173.3
135.3
69.9
125.3
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
HP Cumulative Rainfall for September month


Himachal Pradesh
Rainfall(mm)
1000.0
900.0
800.0
700.0
600.0
500.0
400.0
300.0
200.0
100.0
0.0
888.5
730.3
701.8
776.9
522.2
638.2
623.9
717.2
927.0
686.9
567.4
688.6
716.2
886.0
600.9
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
HP Cumulative Rainfall for Monsoon season

9. Verification of LRF:-

As per the Long Range Forecast issued on 28th May, 2024, NW India including Himachal Pradesh most likely to receive normal rainfall and rainfall likely to be in the range of 92-108% of LPA. However, Himachal Pradesh received 600.9 mm of actual rainfall during monsoon 2024 against its normal 734.4 mm which comes under normal rainfall category.

10. Dissemination of weather forecast:-

All the weather forecast & warning bulletins, press release and nowcast were issued on timely manner and disseminated to all the stakeholders and users through all the possible modes such as website, e-mail, and our social media groups like Whatsapp, Instagram, Twitter, Facebook etc and Sachet were also issued during any severe weather event.

Note: Forecast/Warning for any day is valid from 0830 hours IST of that day till 0830 hours IST of next day

WARNING
WARNING(TAKE ACTION)
ALERT (BE PREPARED)
WATCH (BE UPDATED)
NO WARNING (NO ACTION)

PROBABILISTIC FORECAST	
Terms	Probability of Occurrence
Unlikely	<25%
Likely	25-50%
Very Likely	50-75%
Most Likely	>75%

SPATIAL	
DRY	No Rainfall
ISOLATED	1-25%
FEW	26-50%
MANY	51-75%
MOST	76-100%

RAINFALL INTENSITY	
Light	2.5-15.5 mm
Moderate	15.6-64.4 mm
Heavy	64.5-115.5 mm
Very Heavy	115.6-204.4 mm
Extremely Heavy	≥204.5 mm

With Regards

Meteorological Centre
Shimla

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