Pakistan's Monthly Climate Summary
DECEMBER, 2021

In brief

- The dry continental air remained a predominant feature over most parts of the country during the month.
- Only few rainfall events occurred during the whole month.
- December 2021 rainfall was 66.3% below average for Pakistan as a whole.
- AJK(-54.2%), GB(-77.2%), Balochistan(-70.6%), KP(-60.5%)& Punjab(-86.2%) all experienced deficient rainfall, except Sindh which observed Slightly above normal Rainfall.
- The wettest day of the month in the country was 28th December, when Garhi Dupatta (KP) recorded 37.0 mm of rain which also proved to be the wettest place with highest monthly total of 72.5 mm.
- The national mean monthly temperature of November 2021 for Pakistan as a whole was 12.97 °C, being 0.44 °C warmer than monthly-average.
- The mean maximum (day) temperature at country-level was 20.55 °C, being 0.30 °C warmer than average of 20.24 °C.
- The night (minimum) temperature was 5.4 °C, being 0.57 °C warmer than country-average of 4.83 °C.
- The hottest day of the month was at Mithi (Sindh) when it recorded 33.2 °C temperature on 1st December.
- The coldest temperature of -13.7 °C of the month was recorded at Skardu (GB) on 19th December 2021.
- The neutral Indian Ocean Dipole (IOD) event persisted in the month.
- La Niña is active in the tropical equatorial Pacific during December 2021.

National weather extremes during December 2021

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Hottest day	33.2 °C	at Mithi (Sindh) on the 1st
Coldest day	0.2 °C	at Babusar (GB) on the 16th& 27th
Coldest night	-13.7 °C	at Skardu (GB) on the 19th
Warmest night	19.0 °C	at Karachi (Sindh) on the 24th
Wettest day	37.0 mm	at Garhi Dupatta (KP) on the 28th
Wettest month	72.5 mm	at Garhi Dupatta (KP)

Synoptic Summary

The dry continental air remained a predominant feature over most parts of the country during the month. However, a western disturbance-induced low-pressure area formed over west Balochistan during first and last weeks of the month. The prevailing trough over upper Khyber Pakhtunkhwa (KP) and Gilgit Baltistan (GB) turned into a low-pressure area over there on 5th December and persisted for the next 3 days, 7th-9th December, which yielded winter's first rain over there. Another low-pressure area, induced by the westerly wave, developed over Northwest Balochistan on 25th December which persisted till 28th December. This Secondary low-pressure area induced a marked trough over the North Arabian Sea and adjoining Sindh-Balochistan coast, which produced winter's first rain in Karachi and in other cities of lower Sindh on 27th-28th December apart from giving rainfall over northern areas of the country during last days of the month.

December, 2021 area-weighted rainfall

	Rank (of 61)	Normal (mm)	Average (mm)	Departure (percent)	Comment
Pakistan	20	13.3	4.5	-66.3	----
Azad Jammu & Kashmir	24	36.7	16.8	-54.2	----
Balochistan	23	12.8	3.8	-70.6	----
Gilgit Baltistan	16	11.9	2.7	-77.2	----
Khyber Pakhtunkhwa	39	31	12.2	-60.5	----
Punjab	19	10.2	1.4	-86.4	----
Sindh	50	3.4	3.9	14.4	----

Rank ranges from 1 (lowest) to 61 (highest)

Rainfall – Considerably below average over most part of the country.

Pakistan December 2021 Rainfall
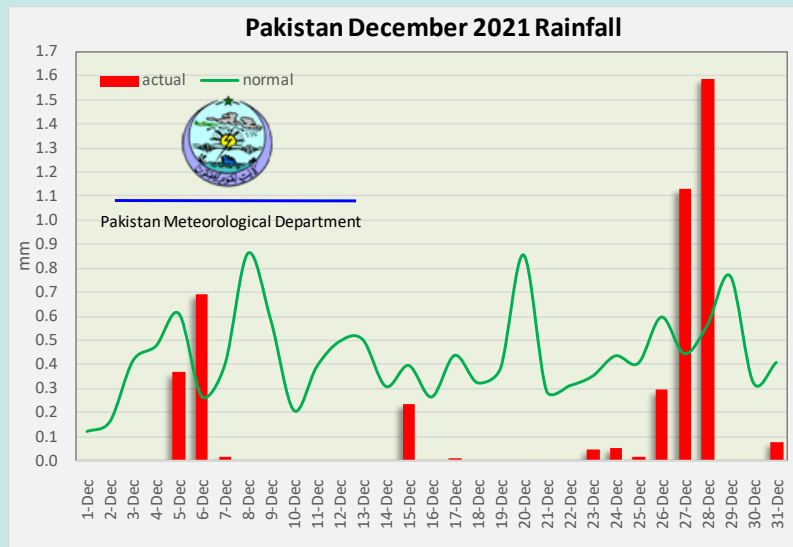
During December 2021, only a couple of rainfall events occurred during the month. December 2021 rainfall was 66.3% below average for Pakistan as a whole and ranked twentieth driest December on record for the country during 1961-2021. Climatologically, the month of December happens to be the third driest month of the year across Pakistan. The December 2021 was considerably dry with only 4.5 mm rain (area weighted) against its normal 13.3 mm. On average, the December rainfall contribution is of the order of 17% and 1.5% to the post-monsoon (OND) and annual rainfall respectively.

On regional scale, almost all the regions/provinces witnessed considerably driest conditions. The most deficient rainfall occurred in the province of Punjab (-86.4 %), which observed only a few events of very low rainfall in the whole month. Dry conditions on other regions were not very different. AJK (-54.2%), Balochistan (-70.6%), GB (-77.2%) & KP (-60.5%) all experienced mostly dry month, except Sindh(+14.4 %) which observed slightly above normal rain . The wettest day of the month in the country was 28th December, when Garhi Dupatta (KP) recorded 37.0 mm of rain with same place being the wettest monthly total of 72.5 mm.

December 2021 rainfall maps
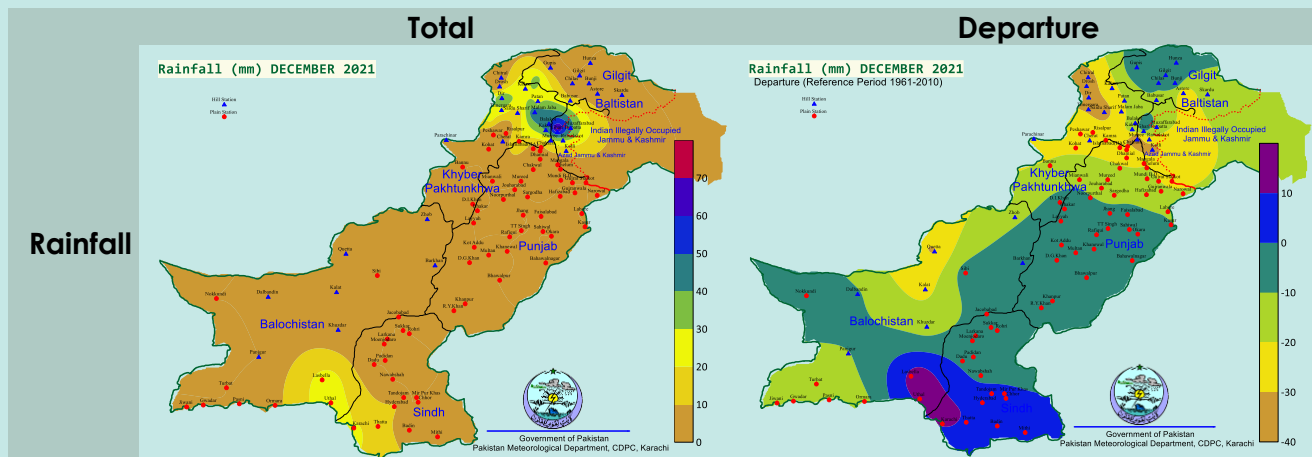
**Temperatures– Warmer than average temperature over the Country**

The national mean monthly temperature of December 2021 for Pakistan as a whole was 12.97 °C, being 0.44°C warmer than average. On regional scale, Balochistan (+0.99 °C), Punjab (+0.13 °C) and Sindh (+0.10 °C) recorded warmer than average while AJK (-0.09 °C), KP (-0.17 °C) and GB (-0.34 °C) recorded negative anomaly for the month.

The mean maximum (day) temperature in December 2021 at country-level was 20.55 °C, being 0.30°C warmer than average of 20.24 °C. The night (minimum)

temperature was 5.4°C, being 0.57 °C warmer than country-average of 4.83 °C. The mean temperature anomalies of December were ±1.0°C over most parts of the country.

Mean Maximum temperatures' anomalies were ±1°C over most parts of the country. The mean minimum temperature anomalies for the month were ±2.0°C over most parts of country with anomalies over western Balochistan, Sindh and Punjab being considerably higher. The hottest day of the month was at Mithi (Sindh) when it recorded 33.2 °C temperature on 1st December. The coldest temperature of -13.7°C of the month was recorded at Skardu (GB) on 19th December 2021.

December 2021 Temperature maps
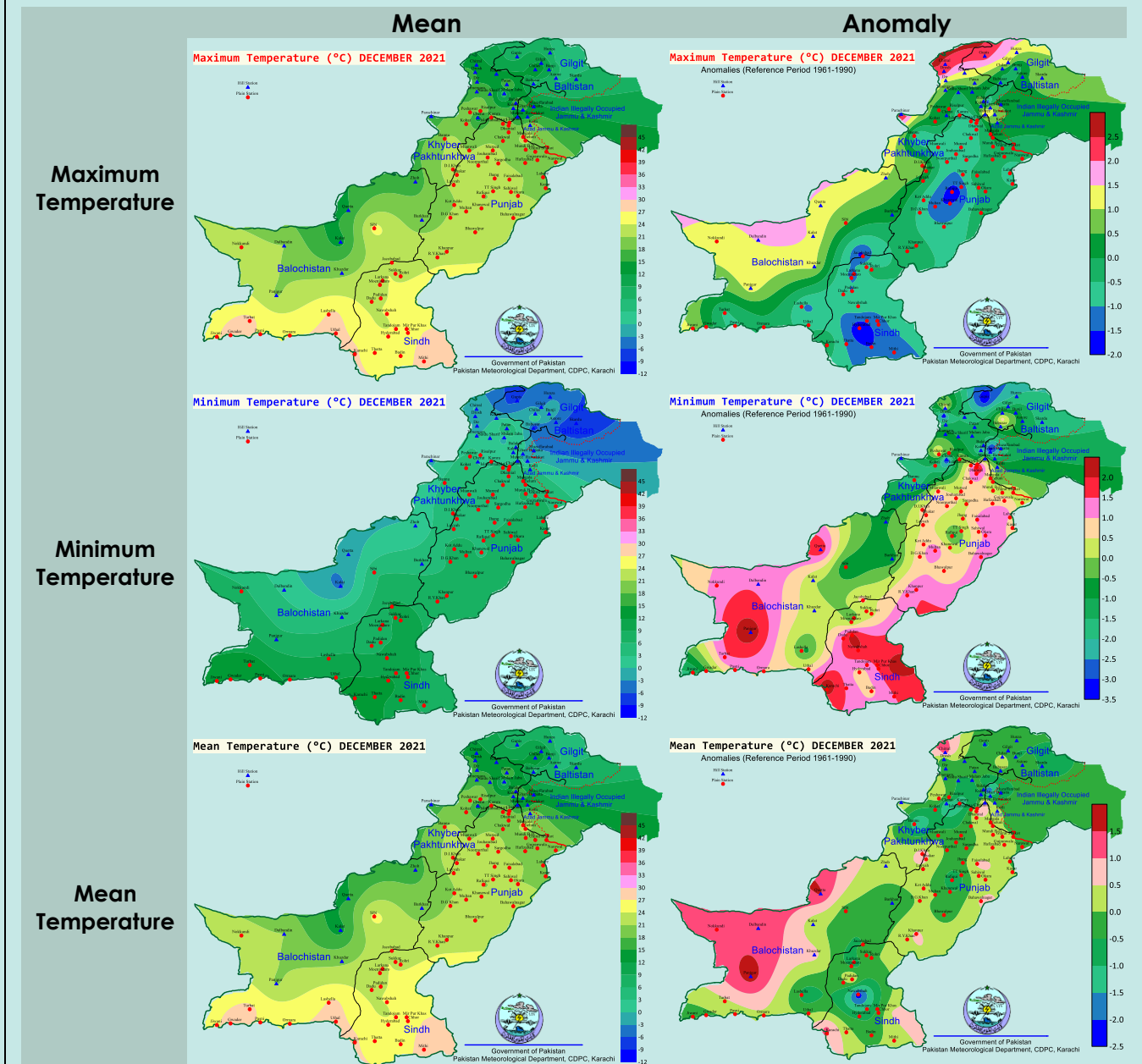
December 2021 Monthly Averages & Normals

Station	Pressure (mb)		Temperature (°C)			Vapour (mb)	Precipitation	
	Station Level	Sea Level	Mean	Maximum	Minimum	Pressure	Total (mm)	Days
Drosh	858.3	1543.6	6.6	13.8	-1.4	4.1	6.0	2
	858.8	1548.4	6.9	12.2	2.3	4.4	37.7	5.5
Peshawar	981.3	1020.5	11.3	21.0	3.2	8.9	0.4	0
	976.3	1018.7	11.7	20.7	5.1	8.9	16.9	3.5
Parachinar	831.1	1539.9	6.8	15.4	-1.0	4.0	5.4	1
	830.2	1530.6	6.7	13.4	-0.3	4.4	28.6	3.7
Rawalpindi	960.7	1020.4	11.8	19.0	5.8	7.7	7.8	4
	942.8	1019.0	11.1	20.0	4.0	8.3	31.2	4.5
Sargodha	994.6	1016.6	13.7	21.8	7.0	11.3	0.0	0
	996.0	1018.3	13.5	22.0	5.6	10.6	9.5	3.4
Jhelum	990.9	1018.8	12.8	21.6	5.6	10.9	6.4	2
	990.1	1017.9	12.9	21.5	6.3	10.3	26.6	4
Sialkot	988.7	1019.0	12.2	19.8	5.6	11.1	0.0	0
	987.8	1018.1	12.4	20.2	5.6	10.8	24.0	3.3
Zhob	861.4	1515.1	8.6	16.6	0.2	3.8	0.0	0
	861.3	1515.5	8.8	16.3	1.0	4.8	11.5	0.7
D.I.Khan	998.1	1018.6	14.1	22.9	6.0	10.4	1.0	1
	997.2	1017.9	13.6	22.2	5.7	10.1	8.8	2.3
Lahore	993.5	1018.9	14.4	20.9	8.3	11.1	0.0	0
	992.5	1017.9	14.3	21.9	7.8	10.6	9.9	3.1
Quetta	846.0	1550.4	7.2	14.5	-1.2	2.8	1.0	1
	844.3	1533.5	6.2	14.0	-1.9	5.0	37.5	4.3
Multan	1004.0	1018.7	14.1	21.3	6.9	11.1	1.4	1
	1003.6	1018.4	14.1	23.0	6.3	10.8	2.7	0.9
Barkhan	894.0	1517.6	11.9	19.2	4.8	4.1	4.0	1
	894.3	1521.6	12.6	20.9	6.0	5.5	6.0	0.6
Nokkundi	939.0	1016.9	14.7	22.1	6.6	3.4	0.0	0
	939.8	1018.1	13.8	21.4	5.5	6.1	1.8	0.3
Dalbandin	922.9	1530.2	12.6	21.0	----	4.6	1.0	1
	922.5	1527.1	11.8	18.7	1.8	5.8	12.5	0.9
Jacobabad	1012.0	1018.6	16.1	22.4	9.4	11.5	0.0	0
	1011.1	1017.7	17.0	24.3	8.9	10.3	2.9	0.2
Khanpur	1007.7	1018.3	14.6	23.2	6.8	11.6	1.1	1
	1006.9	1017.6	14.9	23.8	5.9	10.3	2.7	0.7
Panjgur	907.9	1530.5	14.0	20.7	7.0	8.0	0.0	0
	907.8	1527.4	13.2	19.8	5.2	3.9	8.9	1
Khuzdar	881.2	1533.3	13.3	20.3	4.9	5.0	2.2	1
	878.7	1510.4	12.9	19.8	4.7	2.9	14.3	1.2
Nawabshah	1014.9	1018.4	16.7	24.9	9.4	11.7	0.0	0
	1014.0	1018.0	16.4	26.0	7.8	11.8	1.8	0.2
Jiwani	1010.5	1017.1	21.4	26.7	13.3	15.3	1.0	1
	1010.6	1017.1	21.1	26.0	15.1	14.9	23.5	1.4
Pasni	1017.1	1017.7	20.9	26.4	14.2	15.0	0.4	0
	1015.6	1016.3	20.5	26.9	12.9	14.0	19.6	0.9
Hyderabad	1012.3	1017.4	19.2	24.4	13.2	11.2	11.0	2
	1013.0	1017.1	19.5	26.5	13.0	11.2	1.4	0.2
Chhor	1016.4	1017.1	18.0	27.0	8.8	11.0	2.0	1
	1015.7	1016.4	17.9	28.6	6.8	9.9	0.2	0
Karachi	1014.6	1017.3	21.0	27.3	13.9	11.2	16.9	2
	1014.3	1017.1	20.1	27.9	12.2	11.6	3.9	0.6

Note: The first row against each station contains the actual values while second row for normal values of 1971-2000
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December 2021 extreme values

STATION	Mean Temperature (°C)				Temperature (°C)				Highest (mm & knots)			
	Highest	Date	Lowest	Date	Highest	Date	Lowest	Date	Rain	Date	Wind Speed	Date
Drosh	11.1	3	3.9	15	19.5	2*	-3.8	17	5.0	6	14	10
Peshawar	14.9	6	7.9	18	25.2	10	-0.7	19	0.4	27	2	1*
Parachinar	12.1	4	2.4	15	20.5	3	-4.0	78	5.2	6	10	5*
Rawalpindi	15.8	4	8.5	16	23.0	3	0.8	19	2.8	28	24	16
Sargodha	16.6	4	8.8	17	26.2	10	2.3	18	0.0	0	20	31
Jhelum	17.9	4	9.3	18	27.0	4	1.8	19	5.4	6	6	28*
Sialkot	17.8	4	7.3	19	24.7	4	1.9	20	0.0	0	2	7*
Zhob	12.5	21	4.1	17	22.0	20	-5.0	18	0.0	0	9	14*
D.I.Khan	16.9	1*	11.3	18	27.0	4	2.3	23	1.0	26	2	2*
Lahore	19.1	5	10.6	17	26.0	4	5.2	20	0.0	0	4	28
Quetta	14.4	22	-0.1	16	23.0	22	-8.0	17	1.0	26	16	3*
Multan	16.8	1*	10.4	27	25.3	4	2.3	19	1.4	26	8	11*
Barkhan	15.3	3	8.0	16	23.0	21	1.5	15*	4.0	26	4	11*
Nokkundi	19.6	22	7.8	16	29.0	22	0.0	16	0.0	0	14	13
Dalbandin	19.0	22	5.5	16	29.5	22	---	-	1.0	31	8	25
Jacobabad	18.9	1	12.4	17	25.5	1*	5.0	17*	0.0	0	4	16*
Khanpur	18.3	1	10.0	17	28.0	1	1.6	19	1.1	26	6	18*
Panjgur	18.3	22	7.5	16	26.0	21*	3.0	17	0.0	0	16	25
Khuzdar	16.5	1	9.4	16	26.0	22	0.5	30	2.2	27	8	15*
Nawabshah	20.3	1	13.6	18	28.5	1*	5.0	18	0.0	0	10	28
Jiwani	24.1	2	18.5	17	29.5	3	7.0	18	1.0	28	12	29*
Pasni	23.0	1	18.4	16	29.0	1*	12.0	18	0.4	28	8	16*
Hyderabad	22.4	1	15.0	28	27.5	5	9.5	20	6.0	27	12	17
Chhor	21.1	1	14.1	17	30.2	6*	3.5	20	2.0	28	6	16*
Karachi	24.8	1	17.8	17*	32.0	1	9.0	18*	13.9	28	12	16

* means value occurred multiple times