

Decadal Agromet Bulletin of Pakistan



Highlights...

- ❖ Moderate to high rainfall was observed in the agricultural plains of the country except Sindh where light rainfall was observed during the decade.
- ❖ Highest precipitation received as 105mm in MalamJabba during the last decade.
- ❖ Highest maximum temperature recorded as 44°C at Dadu and Turbat during the last decade.
- ❖ Rain-wind & thunderstorm is expected almost all over the country during the decade.
- ❖ Farmers are advised to remove extra water from the field to avoid the fungal attack.
- ❖ Removing weeds from the standing crops is very important as weeds utilize moisture and food which are to be utilized by the crop. As a result considerable loss in yield occurs every year.

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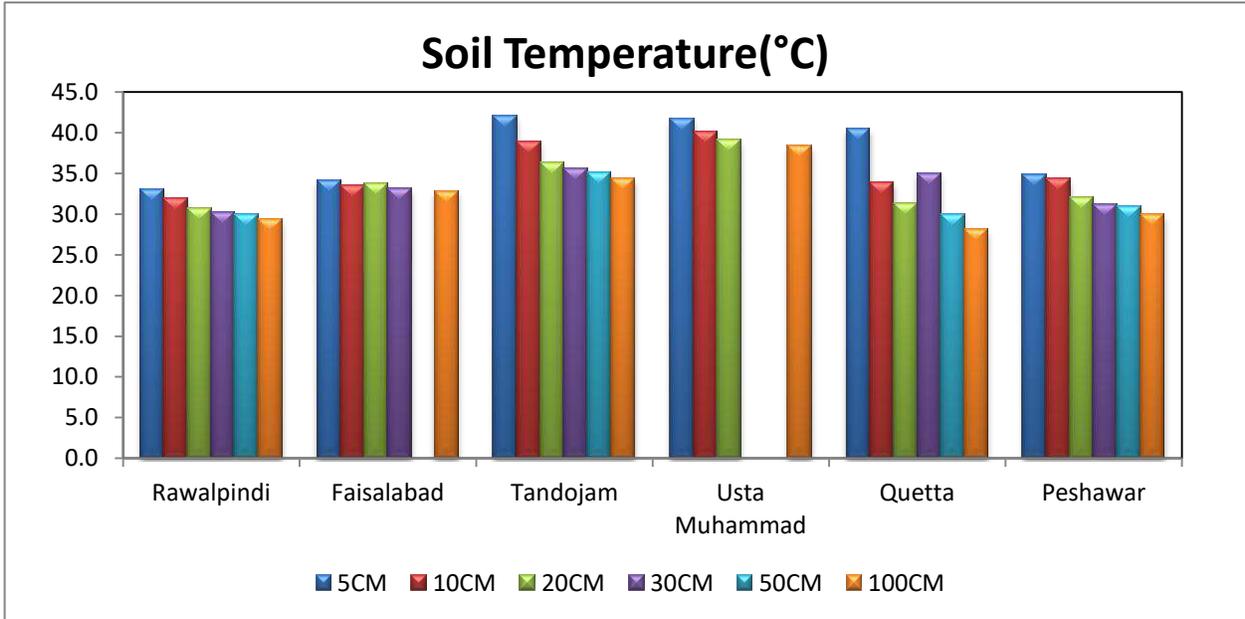
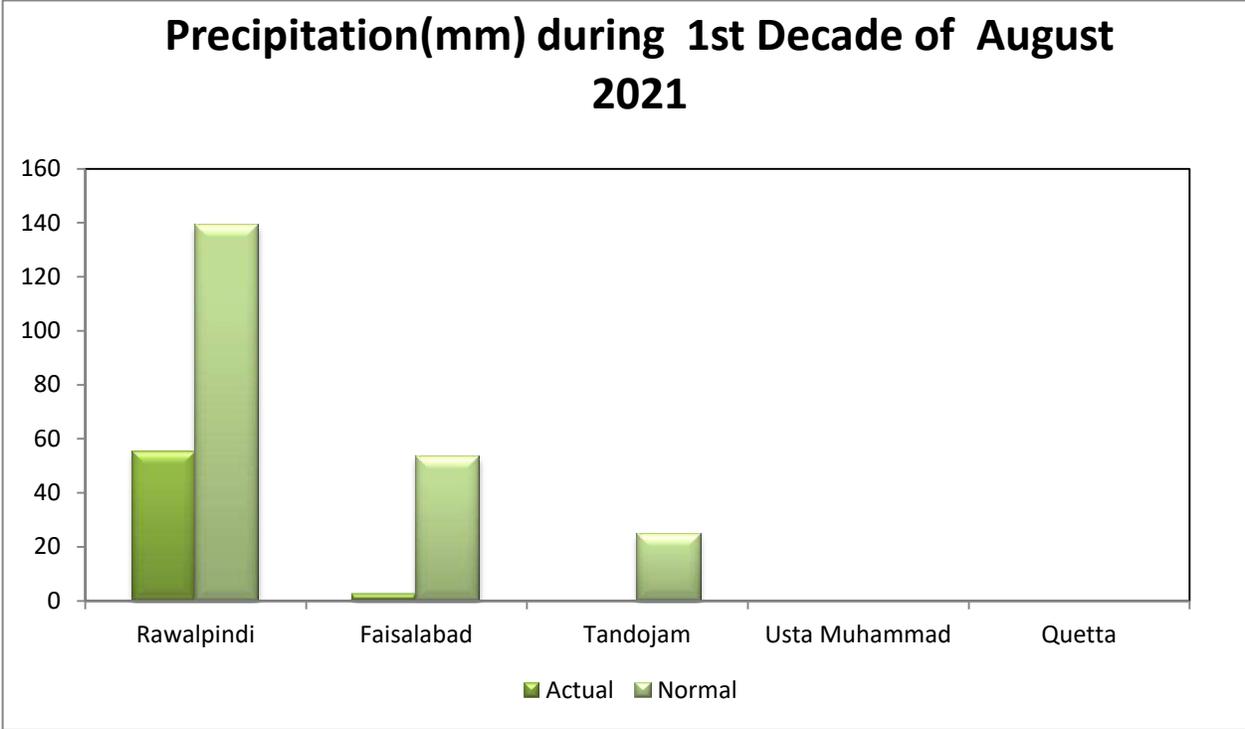
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Meteorological Conditions during 1st Decade of August, 2021

Sr. No.	Station	Precipitation (mm)			Air Temperature (°C)			Soil Temperatures (°C)						R.H (%)	Sunshine Duration(hours)	Wind Speed (km/hr)	ETo (mm/day)
		Normal	Actual	Dep	T _{mx} Dep	T _{min} Dep	Mean	5cm	10cm	20cm	30cm	50cm	100cm				
1	Rawalpindi	139.0	55.2	-83.8	3.9	0.1	30.1	33.1	31.9	30.7	30.2	30.0	29.3	66	93.6	3.1	5.4
2	Faisalabad	53.3	2.4	-50.9	1.1	-0.4	32.0	34.0	33.5	33.7	33.1	**	32.8	63	71.5	3.7	5.1
3	Jhelum	89.6	42.9	-46.7	1.4	-0.1	31.0	35.4	33.9	32.1	31.0	31.3	***	70	81.5	2.4	5.0
4	Lahore	50.2	67.2	17.0	-1.0	-0.2	30.4	32.2	32.2	31.6	31.0	***	30.8	74	0.0	1.8	4.0
5	Sargodha	16.4	27.2	10.8	0.1	-1.0	31.6	35.3	34.2	32.5	32.0	***	31.0	66	78.5	2.3	4.9
6	Multan	38.5	120.1	81.6	-2.6	-2.4	30.5	***	***	***	***	***	***	70	0.0	1.6	3.6
7	Khanpur	106.6	0.0	-106.6	2.6	0.4	33.5	***	38.3	38.3	38.3	38.3	36.6	59	97.6	2.0	5.7
8	Tandojam	24.8	0.0	-24.8	-0.1	-0.9	30.2	42.1	38.9	36.3	35.6	35.2	34.4	63	82.9	0.0	4.5
9	Sakrand	38.9	0.0	-38.9	2.8	-2.6	32.9	51.8	***	***	***	***	25.4	62	96.4	7.4	6.7
11	Rohri	28.5	0.0	-28.5	2.8	0.0	34.2	***	***	***	***	***	***	52	91.2	8.0	7.2
12	D.I Khan	45.7	22.0	-23.7	0.8	-3.1	30.3	33.9	33.3	***	33.1	21.9	***	66	82.0	6.6	5.7
13	Peshawar	32.6	23.3	-9.3	2.2	-1.2	31.4	34.9	34.3	32.0	31.2	30.9	30.0	61	87.6	3.6	5.5
14	Usta M.	0.0	0.0	0.0	1.6	3.6	34.7	41.7	40.0	39.1	***	***	38.4	53	0.0	4.2	5.8
15	Quetta	0.0	0.0	0.0	-0.3	-2.7	26.2	40.5	33.9	31.2	35.0	29.9	28.1	28	100.3	4.2	5.8
16	Skardu	4.4	0.5	-3.9	-3.3	-1.0	22.5	***	***	***	***	***	***	40	58.0	4.5	4.5
17	Gilgit	3.7	12.5	8.8	-1.9	1.5	25.8	***	***	***	***	***	***	49	68.3	4.5	4.8

Table-1: Meteorological parameters for selected station of Pakistan. "Dep" in the table stands for difference from climatic normal, i.e. actual value minus normal. The climatic normal used in the Bulletin is extracted from the 2007 - 2016 observed data. ETo stands for reference crop evapotranspiration. *** stands for no data.

Graph at RAMCs during August, 2021



Past Weather (1st to 10th August, 2021)

Moderate to high rainfall was observed in the agricultural plains of the country except Sindh where light rainfall was observed during the decade.

1.1 Punjab

Moderate to high amount of rainfall reported from the agricultural plains of the province. Decadal maximum & minimum remained normal in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 67%, 60 hrs, 2.4 km/hr and 4.8 mm/day respectively.

1.2 Sindh

Light amount of rainfall reported from few parts of the agricultural plains of the province. Decadal maximum & minimum remained normal in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 59%, 90 hrs, 5.1 km/hr and 6.1 mm/day respectively.

1.3 Khyber Pakhtunkhwa

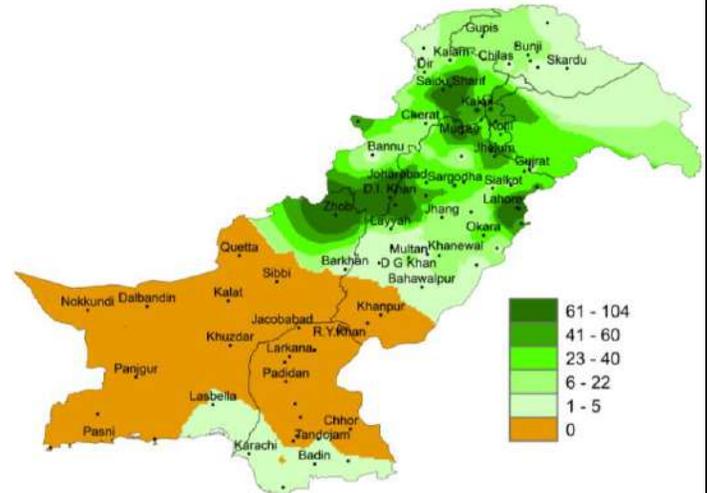
Moderate to high amount of rainfall reported from most parts of the agricultural plains of the province. Decadal maximum remained above normal by 1.5°C & minimum remained below normal 2.1°C in the province in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 64%, 85 hrs, 5.1 km/hr and 5.6 mm/day respectively.

1.4 Baluchistan

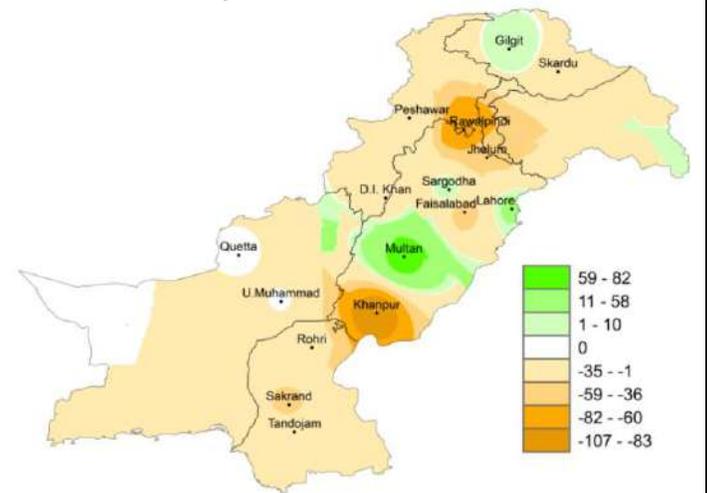
Light to moderate amount of rainfall reported from few parts of the agricultural plains of the province. Decadal maximum & minimum remained normal in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 41%, 50.2 hrs, 4.2 km/hr and 5.8 mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

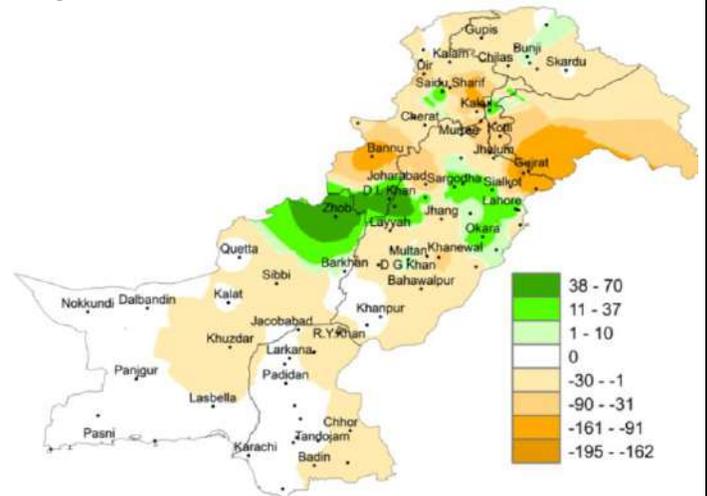
Light to moderate amount of rainfall reported from most parts of the agricultural plains of the province. Decadal maximum remained below normal by 2.6 & minimum remained normal in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 45%, 63.2 hrs, 4.5 km/hr and 4.7 mm/day respectively.



I. Actual rainfall during the decade



II. Departure of rainfall from Normal



III. Departure of rainfall from Previous Decade

Figure.1: Rainfall distribution during previous decade (mm)

(a) **Past Weather for Major Agricultural Plains**
(1st to 10th August, 2021)

2.1 RAMC, Rawalpindi (Potohar region)

Rainfall reported as 55.2 mm during the decade; however weather remained cloudy during the decade. Average relative humidity recorded as 66%. Mean day temperature was 36.4°C while night temperature recorded as 23.8°C with 93.6 hours bright sunshine duration. Wind speed recorded as 3.1 km/hr with mean wind direction *south westerly*.

2.2 RAMC, Faisalabad (Central Punjab)

Rainfall reported as 2.4 mm during the decade; however weather remained cloudy for 08 days during the decade. Average relative humidity recorded as 63%. Mean day temperature was 37.8°C while night temperature recorded as 26.5 °C with 71 hours bright sunshine duration. Wind speed recorded as 3.7 km/hr with mean wind direction *south westerly*.

Cotton: *flowering stage completed, crop irrigated.*

2.3 RAMC, Tandojam (Lower Sindh)

Dry weather reported during the decade; however weather remained cloudy for 08 day during the decade. Average relative humidity recorded as 63%. Mean day temperature was 35.3°C while night temperature recorded as 25.0°C with 82 hours bright sunshine duration. Wind speed recorded as 2 km/hr with mean wind direction *south westerly*.

Cotton Sindh 1: *Good, Ball opening stage and crop irrigated.*

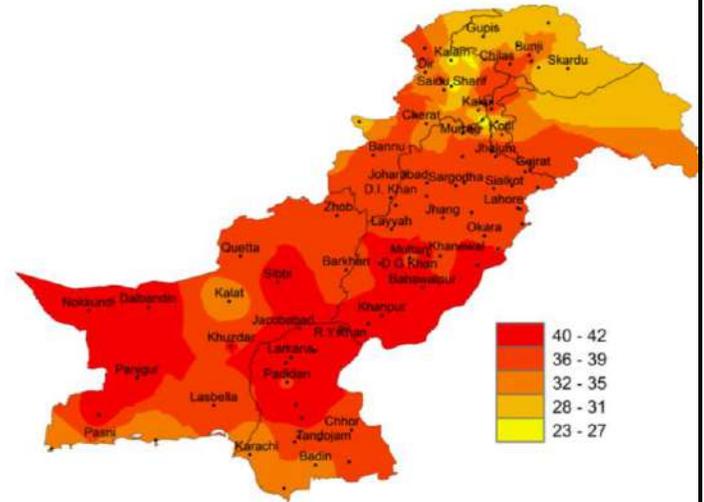
2.4 RAMC, Usta Muhammad (Eastern Baluchistan)

Dry weather reported during the decade; however weather remained cloudy for 03 days during the decade. Average relative humidity recorded as 53%. Mean day temperature was 40.3°C while night temperature recorded as 29.1°C with wind speed recorded as 4.2 km/hr with mean wind direction *south easterly*.

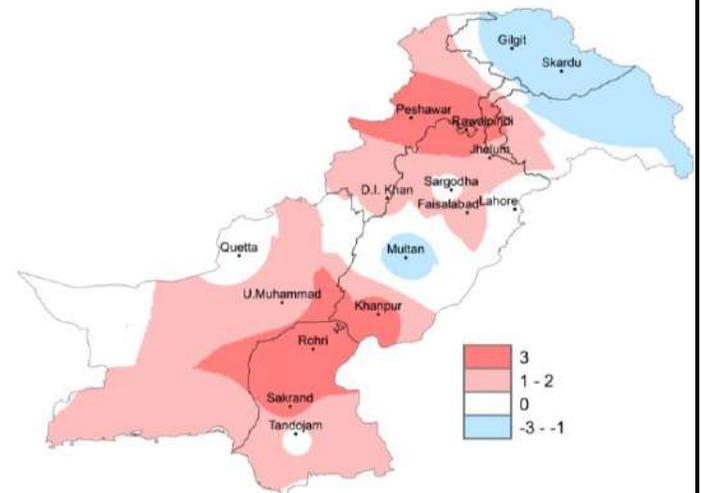
Rice: *third leaf stage, irrigated.*

2.5 RAMC, Quetta (Northern Baluchistan)

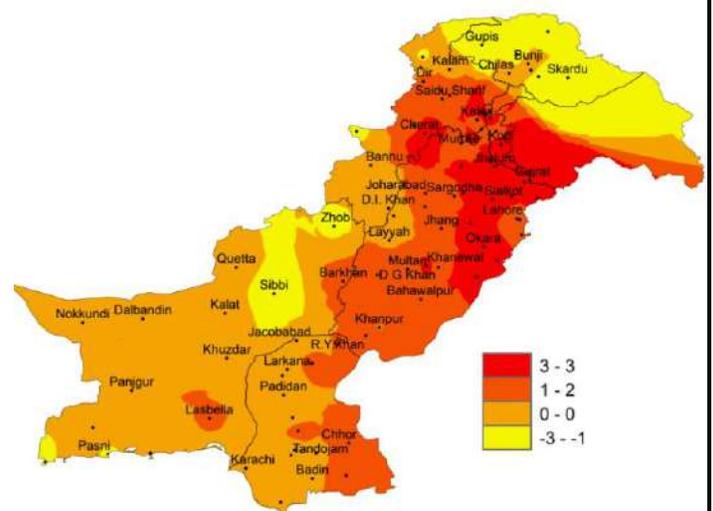
Dry weather reported during the decade; however weather remained cloudy for 7 days during the decade. Average relative humidity recorded as 28%. Mean day temperature was 34.5°C while night temperature recorded as 17.7°C with 100 hours bright sunshine duration. Wind speed recorded as 4.2 km/hr with mean wind direction *north westerly*.



I. Actual max-temp



II. Departure of max-temp from Normal



III. Departure of max-temp from Previous Decade

Figure.2: Maximum Temperature distribution during previous decade (°C)

2(b) Past Weather for Sub-Regional Agricultural Plains (1st to 10th August, 2021)

2.6 Jhelum

Rainfall reported as 42.9mm during the decade; however weather remained cloudy during the decade. Average relative humidity recorded as 70%. Mean day temperature was 36.2°C while night temperature recorded as 25.8°C with 81.4 hours bright sunshine duration. Wind speed recorded as 2.4 km/hr with mean wind direction *south easterly*.

2.7 Lahore

Rainfall reported as 120.1 mm during the decade; however weather remained cloudy for 8 days during the decade. Average relative humidity recorded as 70%. Mean day temperature was 35.0°C while night temperature recorded as 26.0°C with 88.8 hours bright sunshine duration. Wind speed recorded as 1.6 km/hr with mean wind direction *South westerly*.

2.8 Sargodha

Rainfall reported as 27.2 mm during the decade; however weather remained cloudy during the decade. Average relative humidity recorded as 66%. Mean day temperature was 36.8°C while night temperature recorded as 26.3°C with 78.5 hours bright sunshine duration. Wind speed recorded as 2.3 km/hr with variable mean wind direction.

2.9 Multan

Rainfall reported as 2.2 mm during the decade; however weather remained cloudy for 9 days during the decade. Average relative humidity recorded as 56%. Mean day temperature was 38.4°C while night temperature recorded as 24.3°C with 72.2 hours bright sunshine duration. Wind speed recorded as 8.4 km/hr with *South westerly* mean wind direction.

2.10 Khanpur

Dry weather reported during the decade; however weather remained cloudy for 02 days during the decade. Average relative humidity recorded as 59%. Mean day temperature was 39.0°C while night temperature recorded as 27.9°C with 97.6 hours bright sunshine duration. Wind direction remained *south westerly*.

2.11 Sakrand

Dry weather reported during the decade; however weather remained cloudy for 2 days during the decade. Average relative humidity recorded as 62%. Mean day temperature was 38.6°C while night temperature recorded as 27.2°C with 96.4 hours bright sunshine duration. Wind speed recorded as 7.4 km/hr with *south easterly* mean wind direction.

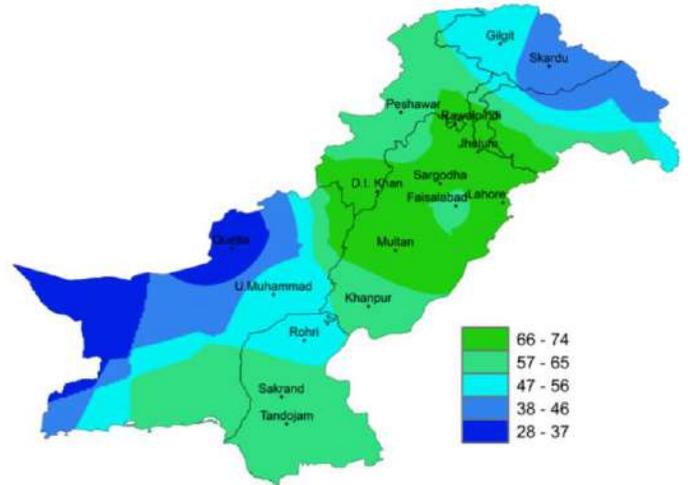


Figure.3: Relative Humidity in Percentage (%)



Figure.4: Reference Crop Evapotranspiration ETo (mm/day)

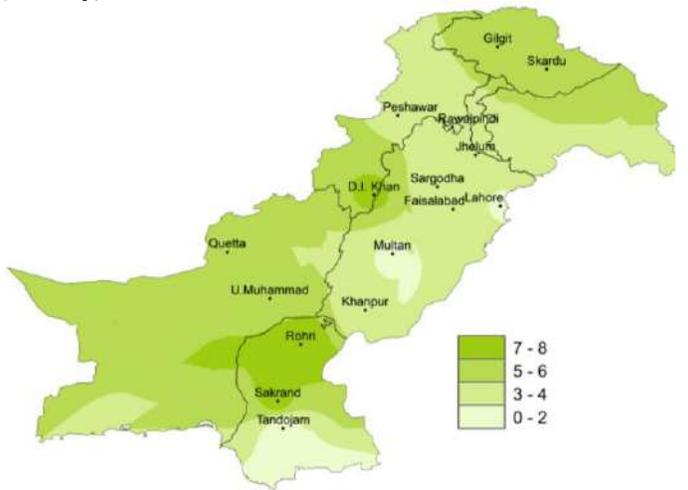


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Dry weather reported during the decade; however weather remained cloudy for 03 days during the decade. Average relative humidity recorded as 52%. Mean day temperature was 40.3°C while night temperature recorded as 28.1 °C with 91.2 hours bright sunshine duration. Wind speed recorded as 8.0 km /hr with variable mean wind direction.

2.13 D.I. Khan

Rainfall reported as 22 mm during the decade; however weather remained cloudy for 08 days during the decade. Average relative humidity recorded as 66%. Mean day temperature was 37.5°C while night temperature recorded as 23.1 °C with 82.0 hours bright sunshine duration. Wind speed recorded as 6.6 km /hr with *north easterly* mean wind direction.

2.14 Peshawar

Rainfall reported as 23.3 mm during the decade; however weather remained cloudy for 9 days during the decade. Average relative humidity recorded as 61%. Mean day temperature was 37.4°C while night temperature recorded as 25.3°C with 87.6 hours bright sunshine duration. Wind speed recorded as 3.6 km/hr with mean wind direction *north easterly*.

2.15 Skardu

Rainfall reported as 0.5 mm during the decade; however weather remained cloudy for 09 days during the decade. Average relative humidity recorded as 40%. Mean day temperature was 29.2°C while night temperature recorded as 15.7 °C with 58.0 hours bright sunshine duration. Calm wind recorded during decade.

2.16 Gilgit

Rainfall reported as 12.5 mm during the decade; however weather remained cloudy for 8 days during the decade. Average relative humidity recorded as 49%. Mean day temperature was 32.9°C while night temperature recorded as 18.6°C with 68.3 hours bright sunshine duration. Wind speed recorded as 4.5 km/hr with mean wind direction *South westerly*.

Ten Days Weather Advisory for Farmers **(11th to 20th August, 2021)**

3.1 Temperature Forecast

Day and night time temperatures are likely remain normal in most of the agricultural plains of the country during the decade.

3.2 Wind Forecast

Generally, normal wind pattern may prevail in most of the agricultural plains of the country.

3.3 Rain Forecast

- ❖ **Punjab:** Rain-thundershower with gusty winds is expected in the province during the decade.
- ❖ **Khyber Pakhtunkhwa:** Rain-thundershower with gusty winds is expected in the province during the decade.
- ❖ **Sindh:** Rain-thundershower with gusty winds is expected in first half of decade while hot, dry and humid weather is expected in most parts of the province during the current decade.
- ❖ **Baluchistan:** Rain-thundershower with gusty winds is expected in first half of decade while hot, dry and humid weather is expected in most parts of the province during the current decade.
- ❖ **Gilgit-Baltistan:** Isolated rain-wind-thunderstorm is expected in Gilgit-Baltistan and adjoining hilly areas during the current decade.
- ❖ **Kashmir:** Isolated rain-wind-thunderstorm is expected in Kashmir and adjoining hilly areas during the current decade.

3.4 Advisory for Farmers

- ❖ Farmers are advised to remove extra standing water from the field to avoid fungus attack.
- ❖ Removing weeds from the standing crops is very important as weeds utilize moisture and food which are to be utilized by the crop.

Findings of AgMIP Pakistan, University of Agriculture, Faisalabad

- ❖ There would be significant increase in temperature i.e., 2.8°C in day and 2.2°C in the night during mid-century (2040-2069).
- ❖ There would be significant variability in rainfall patterns (about 25% increase in summer & 12% decrease in winter during 2040-2069).
- ❖ Climate Change will affect the crop yields negatively (about 17% for rice and 14 % for wheat).
- ❖ If there will be no adaptation to Climate Change, majority of farmers would be the economic losers.
- ❖ With Adaptation to Climate Change (through technology and management), there would be significant decrease in poverty and improvement in the livelihood of farming community.

(Agricultural Model Inter-comparison and Improvement Project (AgMIP) Pakistan 2012-2014)

- 1- سال 2040-69 کے دوران درجہ حرارت میں قابل ذکر اضافہ ہو سکتا ہے۔ جو کہ دن کے وقت 2.8°C اور رات کو 2.2°C تک ہوگا۔
- 2- گرمیوں کی بارش میں 25 فیصد اضافہ اور سردیوں کی بارش میں 12 فیصد تک کمی کا امکان ہے۔
- 3- مندرجہ بالا موسمی تغیرات کی وجہ سے دھان کی پیداوار میں 17 فیصد اور گندم کی پیداوار میں 14 فیصد تک کمی ہو سکتی ہے۔
- 4- اگر موسمی تغیرات کا مناسب بندوبست نہ کیا گیا۔ تو کسانوں کی اکثریت کو معاشی نقصان کا سامنا کرنا پڑے گا۔
- 5- موسمی تغیرات کے سدباب (بذر یعنی ٹیکنالوجی کا استعمال اور بہتر نظم و نسق) سے غربت میں کمی اور کسانوں کی زندگی میں خوشحالی لائی جاسکتی ہے۔

(ایگمپ پاکستان 2012-2014)