

Decadal Agromet Bulletin of Pakistan



Highlights...

- ❖ Moderate to heavy amount of rainfall (on particular days) reported from most of the parts of the provinces during the decade.
- ❖ Highest amount of rainfall recorded as 293.1 mm at Islamabad Airport during the last decade.
- ❖ Highest maximum temperature recorded as 46.0°C at Chilas and Sibbi during the last decade.
- ❖ Rain-wind/thunderstorm is likely in most parts of the country however, isolated heavy showers at particular places.
- ❖ Day and night time temperatures are likely to be slightly below normal to normal in most of the agricultural plains of the country during the decade.
- ❖ After consistent rainfalls in the recent days, weeds may have appeared along with pest attacks. Therefore, farmers are advised to take actions following the recommendations of local agricultural offices.
- ❖ Farmers are advised to keep in the mind the weather forecast prior to start any field activity.

**NATIONAL AGROMET CENTRE (NAMC)
PAKISTAN METEOROLOGICAL DEPARTMENT
SECTOR H-8/2, ISLAMABAD**

Patron-in-Chief: *Mr. Sahibzad Khan, Director General*
Editor-in-Chief: *Ms. Asma Jawad Hashmi, Deputy Director*
Editor: *Ms. Saeeda Saleh, Assistant Meteorologist*
Phone: [+92-51-9250592](tel:+92-51-9250592) Email: dirnamc@yahoo.com

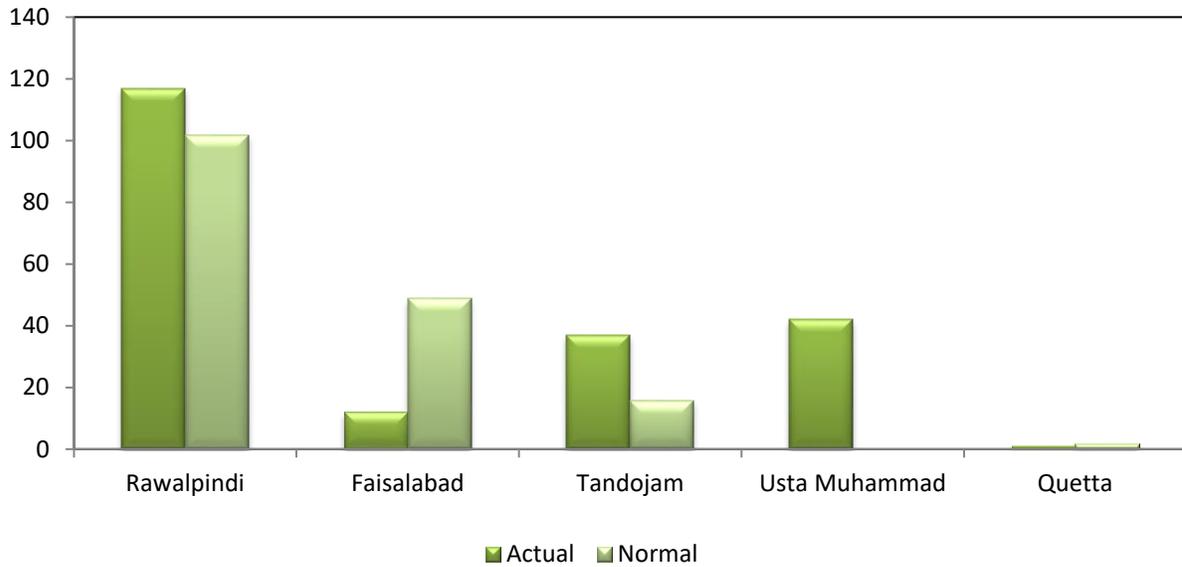
Meteorological Conditions during 2nd Decade of July, 2022

Sr. No.	Station	Precipitation (mm)			Air Temperature (°C)			Soil Temperatures (°C)						R.H (%)	Sunshine Duration(ho urs)	Wind Speed (km/hr)	ETo (mm/day)
		Normal	Actual	Dep	Tmx Dep	Tmin Dep	Mean	5cm	10cm	20cm	30cm	50cm	100cm				
1	Rawalpindi	101.8	116.9	15.1	-1.4	3.1	30.7	31.5	30.1	29.6	29.5	29.2	28.4	70	63.0	15.0	6.2
2	Faisalabad	48.8	12.0	-36.8	-1.5	0.2	31.3	33.3	32.9	32.8	32.6	***	33.2	66	51.9	4.0	4.8
3	Jhelum	73.3	157.0	83.7	-1.9	-0.1	30.3	31.3	30.9	30.6	30.2	30.4	***	75	57.7	1.5	2.8
4	Lahore	72.2	71.2	-1.0	-0.9	0.3	31.0	31.6	31.7	31.3	30.9	***	30.1	71	37.2	2.2	3.9
5	Sargodha	39.5	42.2	2.7	-1.8	-1.0	31.5	33.9	33.7	32.9	32.8	***	31.9	71	60.7	2.3	4.7
6	Multan	13.7	8.1	-5.6	-2.0	-0.5	32.8	***	***	***	***	***	***	61	68.9	8.1	6.3
7	Khanpur	6.1	63.1	57.0	-3.0	-1.7	32.0	***	34.1	34.3	34.8	35.1	34.6	71	89.0	4.0	5.9
8	Tandojam	15.8	37.0	21.2	-0.9	-0.8	30.4	36.0	34.5	33.7	32.9	32.7	32.8	74	67.0	1.0	4.6
9	Sakrand	19.6	100.0	80.4	-3.6	-1.0	30.5	38.3	***	***	***	***	***	73	69.3	5.1	5.2
11	Rohri	2.2	20.0	17.8	-2.9	-1.7	33.0	***	***	***	***	***	***	63	92.8	6.1	6.7
12	D.I Khan	18.1	0.0	-18.1	0.2	2.1	33.4	35.0	34.8	34.4	***	23.0	***	64	58.3	11.2	6.5
13	Peshawar	14.3	2.0	-12.3	-0.2	-1.1	31.4	34.7	34.6	33.4	32.7	32.1	30.9	64	65.0	5.4	5.5
14	Usta M.	0.0	42.0	42.0	-2.7	-1.3	33.5	34.4	33.5	33.1	***	***	35.5	58	***	3.8	5.9
15	Quetta	1.9	1.0	-0.9	-4.2	0.1	26.6	33.1	31.8	29.3	28.3	28.1	26.4	49	70.5	6.3	5.6
16	Skardu	3.3	1.0	-2.3	-1.3	0.0	23.3	***	***	***	***	***	***	40	64.2	1.5	4.2
17	Gilgit	3.3	4.3	1.0	-0.8	3.3	27.6	***	***	***	***	***	***	44	69.7	4.6	5.6

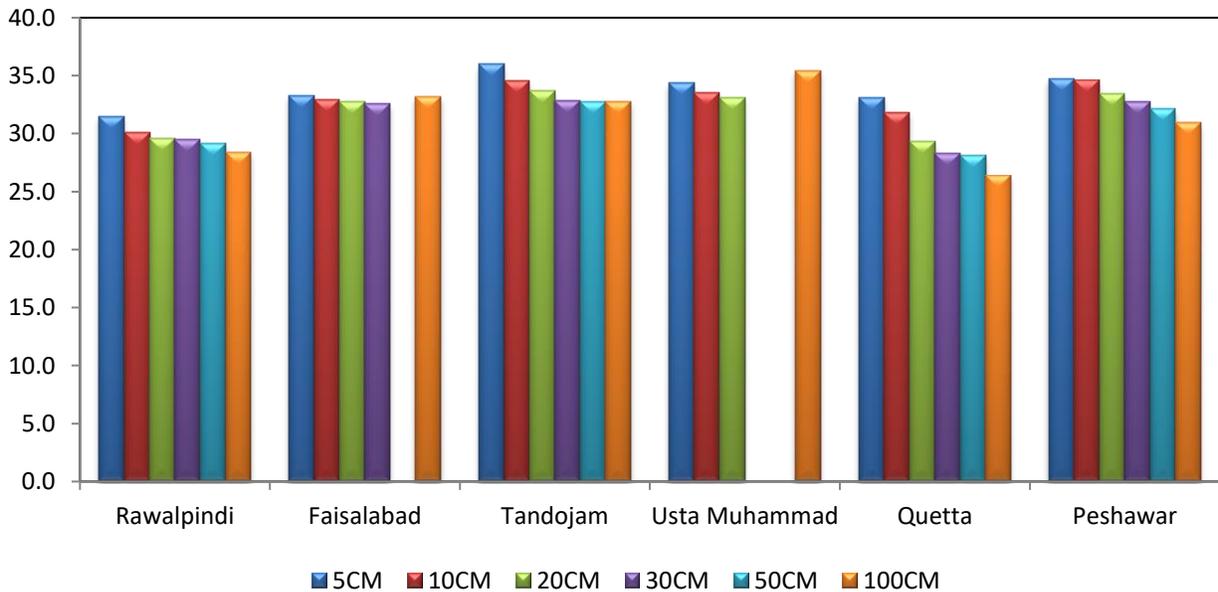
Table-1: Meteorological parameters for selected station of Pakistan. "Dep" in the table stands for difference from climatic normal, i.e. actual value minus normal. The climatic normal used in the Bulletin is extracted from the 2007 - 2016 observed data. 'ETo' stands for reference crop Evapotranspiration*** stands for data non availability.

Graph at RAMCs during July, 2022

Precipitation(mm) during 2nd Decade



Soil Temperature(°C)



Past Weather (10th to 20th July, 2022)

Moderate to heavy amount of rainfall (on particular days) reported from most of the parts of the provinces during the decade

1.1 Punjab

Moderate to heavy rainfall (on particular days) reported from the agricultural plains of the province. Highest rainfall reported from Islamabad A.P, Sialkot cant and Lahore A.P. Decadal maximum remained below normal & minimum remained above in the province. Whereas values of relative humidity, sunshine hour, wind speed & ETo were recorded as 69%, 61.2 hrs, 5.3 km/hr and 4.9 mm/day respectively.

1.2 Sindh

Light to moderate rainfall reported from the agricultural plains of the province. Highest rainfall reported from Chhor, Padidan and Sakrand. Decadal maximum & minimum remained below normal in the province. Whereas values of relative humidity, sunshine hour, wind speed & ETo were recorded as 70%, 76.4 hrs, 4.1km/hr and 5.5 mm/day respectively.

1.3 Khyber Pakhtunkhwa

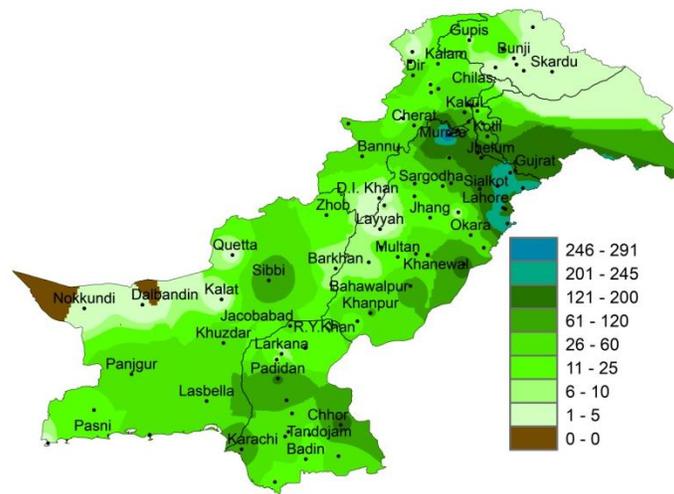
Light to moderate rainfall reported from the upper parts of the province. Highest rainfall reported from Kakul, Parachinar and Risalpur. Decadal maximum remained normal & minimum raised above normal in the province. Whereas values of relative humidity, sunshine hour, wind speed & ETo were recorded as 64%, 61.7 hrs, 8.3 km/hr and 6.3 mm/day respectively.

1.4 Baluchistan

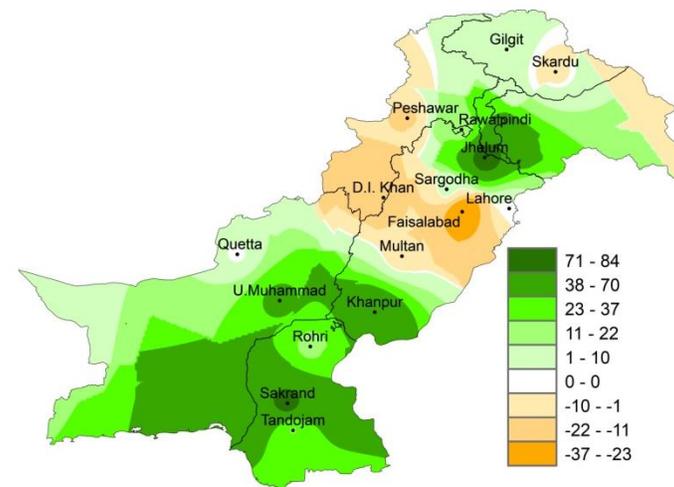
Light to moderate rainfall reported from the province. Highest rainfall reported from Sibbi, Panjgur and Lasbela. Decadal maximum & minimum remained below normal in the province. Whereas values of relative humidity, sunshine hour, wind speed & ETo were recorded as 54%, 70.5 hrs, 5.1km/hr and 5.8 mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

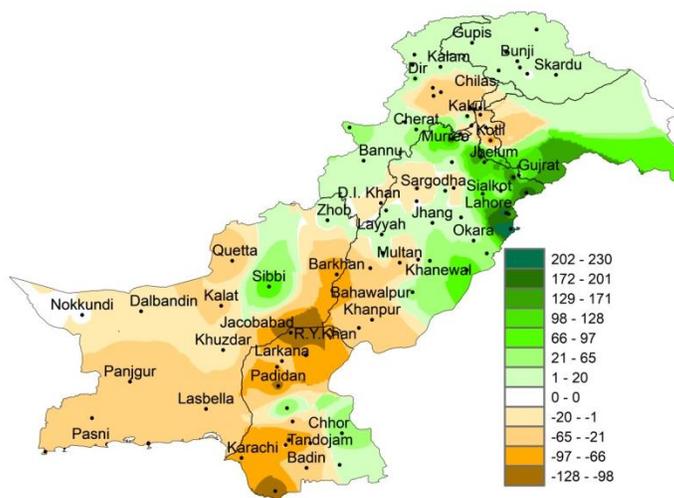
Light to moderate rainfall reported from most parts of the agricultural plains of the province. Highest rainfall reported from Kotli, Rawalakot and Muzaffarabad. Decadal maximum remained below & minimum remained above normal in the province. Whereas values of relative humidity, sunshine hour, wind speed & ETo were recorded as 42%, 67.0 hrs, 3.1km/hr and 4.9 mm/day respectively.



I. Actual rainfall



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**
(10th to 20th July, 2022)

2.1 RAMC, Rawalpindi (Potohar region)

Rainfall reported as 116.9 mm during the decade; however weather remained cloudy for 10 days during the decade. Average relative humidity recorded as 70%. Mean day temperature was 34.4°C while night temperature recorded as 26.9°C with 63.0 hours bright sunshine duration. Wind speed recorded as 15.0 km/hr with mean wind direction *North Westerly*.

2.2 RAMC, Faisalabad (Central Punjab)

Rainfall reported as 12.0 mm during the decade; however weather remained cloudy for 10 days during the decade. Average relative humidity recorded as 66%. Mean day temperature was 35.8°C while night temperature recorded as 26.7°C with 51.9 hours bright sunshine duration. Wind speed recorded as 4.0 km/hr with mean wind direction *Easterly*.

Cotton: *Very good, Flowering, Irrigated*

2.3 RAMC, Tandojam (Lower Sindh)

Rainfall reported as 37.0 mm during the decade; however weather remained cloudy for 10 days during the decade. Average relative humidity recorded as 74%. Mean day temperature was 35.2°C while night temperature recorded as 25.6°C with 67.0 hours bright sunshine duration. Mean wind direction was *North Easterly*.

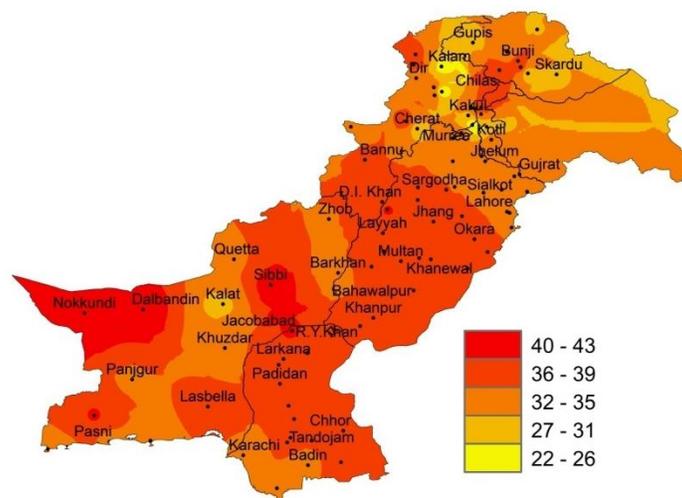
Cotton (Koon): *Good, Budding stage, Irrigated.*

2.4 RAMC, Usta Muhammad (Eastern Baluchistan)

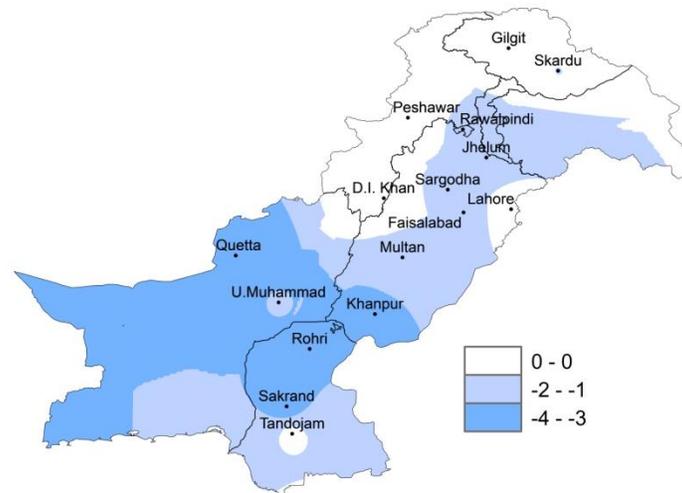
Rainfall reported as 42.0 mm during the decade; however weather remained cloudy for 10 day during the decade. Average relative humidity recorded as 58%. Mean day temperature was 39.7°C while night temperature recorded as 27.3°C with wind speed recorded as 3.8 km/hr with mean wind direction *South Easterly*.

2.5 RAMC, Quetta (Northern Baluchistan)

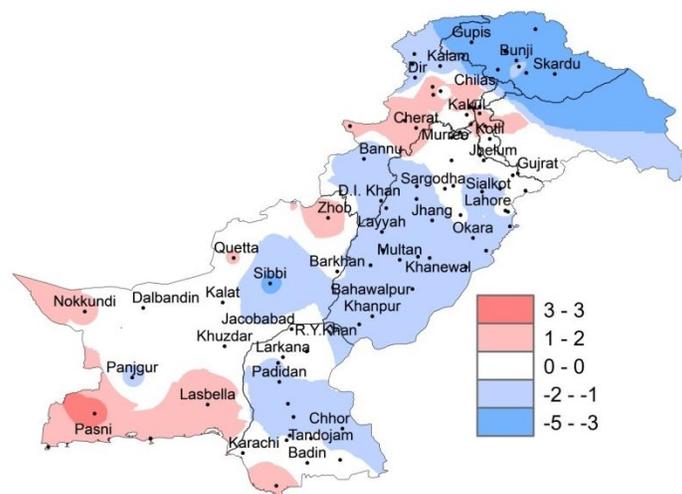
Rainfall reported as 1.0 mm during the decade; however weather remained cloudy for 10 days during the decade. Average relative humidity recorded as 49%. Mean day temperature was 31.9°C while night temperature recorded as 21.2°C with 70.5 hours bright sunshine duration. Wind speed recorded as 6.3 km/hr with mean wind direction *South 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 or Sub-Regional Agricultural Plains (10th to 20th July, 2022)

2.6 Jhelum

Rainfall reported as 157.0mm during the decade; however weather remained cloudy for 09 days during the decade. Average relative humidity recorded as 75%. Mean day temperature was 34.3°C while night temperature recorded as 26.3°C with 57.7 hours bright sunshine duration. Wind speed recorded as 1.5 km/hr with mean wind direction *South easterly*.

2.7 Lahore

Rainfall reported as 71.2 mm during the decade; however weather remained cloudy for 10 days during the decade. Average relative humidity recorded as 71%. Mean day temperature was 34.6°C while night temperature recorded as 27.3°C with 37.2 hours bright sunshine duration. Wind speed recorded as 2.2 km/hr with mean wind direction *north Westerly*.

2.8 Sargodha

Rainfall reported as 42.2 mm during the decade; however weather remained cloudy for 10 days during the decade. Average relative humidity recorded as 71%. Mean day temperature was 36.1°C while night temperature recorded as 26.8°C with 60.7 hours bright sunshine duration. Wind speed recorded as 2.3 km/hr with mean wind direction *variable*.

2.9 Multan

Rainfall reported as 8.1mm during the decade; however weather remained cloudy for 10 days during the decade. Average relative humidity recorded as 61%. Mean day temperature was 36.9 °C while night temperature recorded as 28.7°C with 68.9 hours bright sunshine duration. Wind speed recorded as 8.1 km/hr with mean wind direction *North Easterly*.

2.10 Khanpur

Rainfall reported as 63.1 mm during the decade; however weather remained cloudy for 10 day during the decade. Average relative humidity recorded as 71%. Mean day temperature was 36.6°C while night temperature recorded as 27.3 °C with 89.0 hours bright sunshine duration. Wind speed recorded as 4.0 km/hr with mean wind direction *Variable*.

2.11 Sakrand

Rainfall reported as 100.0 mm during the decade; however weather remained cloudy for 10 day during the decade. Average relative humidity recorded as 73%. Mean day temperature was 35.3°C while night temperature recorded as 25.7°C with 69.3 hours bright sunshine duration. Wind speed recorded as 5.1 km/hr with mean wind direction *Southerly*.

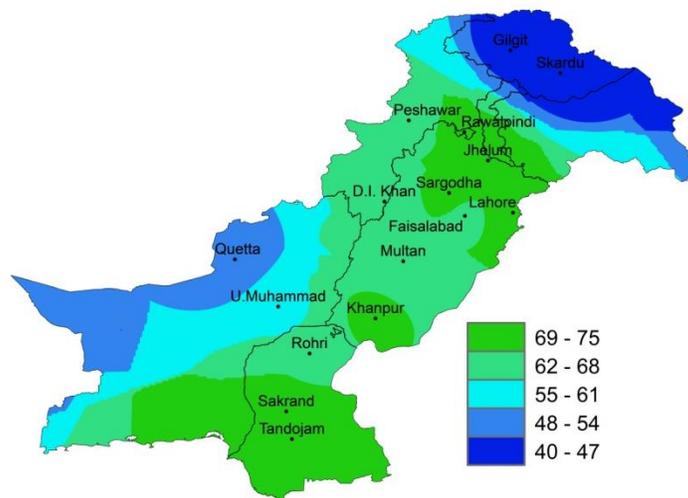


Figure.3: Relative Humidity in Percentage (%)

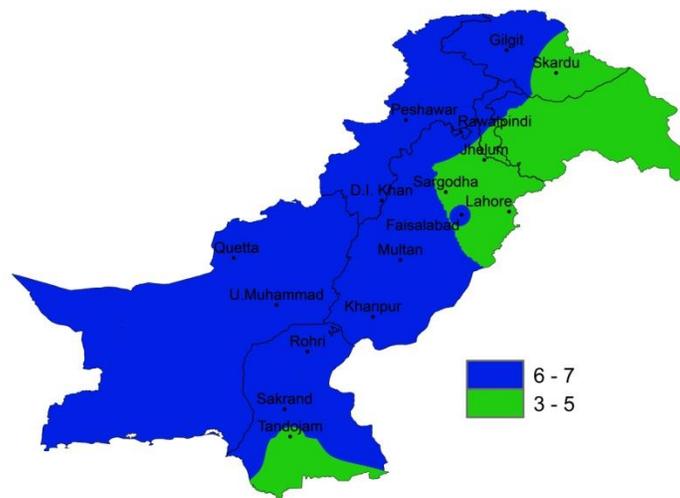


Figure.4: Reference Crop Evapotranspiration Eto (mm/day)

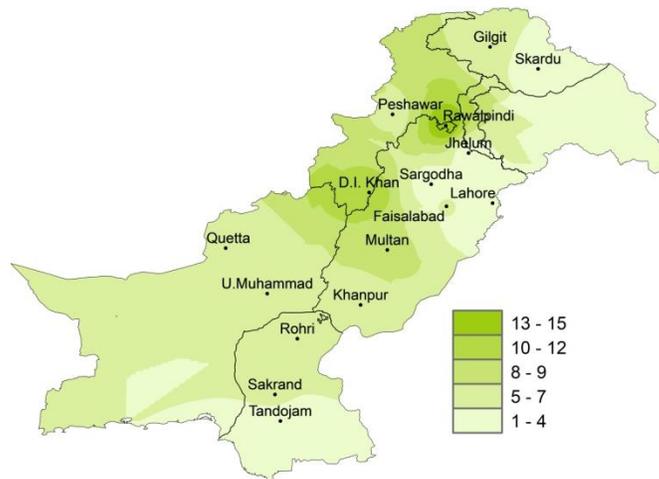


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Rainfall reported as 20.0 mm during the decade; however weather remained cloudy for 08 days during the decade. Average relative humidity recorded as 63%. Mean day temperature was 38.2 °C while night temperature recorded as 27.8 °C with 92.8 hours bright sunshine duration. Wind speed recorded as 6.1 km/hr with mean wind direction *South Easterly*.

2.13 D.I. Khan

Dry weather reported during the decade; however weather remained cloudy for 07 days during the decade. Average relative humidity recorded as 64%. Mean day temperature was 38.2°C while night temperature recorded as 28.6°C with 58.3 hours bright sunshine duration. Wind speed recorded as 11.2 km/hr with mean wind direction North *Easterly*.

2.14 Peshawar

Rainfall reported 1.0mm during the decade; however weather remained cloudy for 06 days during the decade. Average relative humidity recorded as 40%. Mean day temperature was 30.5°C while night temperature recorded as 16.0°C with 64.2 hours bright sunshine duration. Wind speed recorded as 1.5 km/hr with mean wind direction *East Northeasterly*.

2.15 Skardu

Rainfall reported as .08 mm during the decade; however weather remained cloudy for 05 days during the decade. Average relative humidity recorded as 36%. Mean day temperature was 34.6°C while night temperature recorded as 17.6 C with 78.0 hours bright sunshine duration. Wind speed recorded as 2.4 km/hr with mean wind direction *Easterly*.

2.16 Gilgit

Rainfall reported as 4.3 mm during the decade; however weather remained cloudy for 07 days during the decade. Average relative humidity recorded as 44%. Mean day temperature was 35.2°C while night temperature recorded as 20.0°C with 69.7 hours bright sunshine duration. Wind speed recorded as 4.6 km/hr with mean wind direction South *Westerly*.

Ten Days Weather Advisory for Farmers **(21th to 30th July, 2022)**

3.1 Temperature Forecast

Day and night time temperatures are likely to be slightly below normal to 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-wind/thunderstorm is likely in most parts of the province however, isolated heavy showers at particular places.
- ❖ **Khyber Pakhtunkhwa:** Rain-wind/thunderstorm is likely in most parts of the province however, isolated heavy showers at particular places.
- ❖ **Sindh:** Rain-wind/thunderstorm is likely in most parts of the province.
- ❖ **Baluchistan:** Rain-wind/thunderstorm is likely in most parts of the province however, isolated heavy showers at particular places.
- ❖ **Gilgit-Baltistan:** Rain-wind/thunderstorm is likely in most parts of the region however, isolated heavy showers at particular places.
- ❖ **Kashmir:** Rain-wind/thunderstorm is likely in most parts of the region however, isolated heavy showers at particular places.

3.4 Advisory for Farmers

- ❖ After consistent rainfalls in the recent days, weeds may have appeared along with pest attacks. Therefore, farmers are advised to take actions following the recommendations of local agricultural offices.
- ❖ Farmers are advised to keep in the mind the weather forecast prior to start any field activity.

Findings of AgMIPPakistan, 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)