

# Decadal Agromet Bulletin of Pakistan



## Highlights...

- ❖ Light to moderate amount of rainfall reported from the agriculture plains of Potohar region, upper Khyber Pakhtunkhwa, Gilgit-Baltistan Azad & Jammu Kashmir, Balochistan and light rain from agriculture plains of Sindh province.
- ❖ Highest amount of rainfall recorded as 74.0 mm at Malamjabba during the last decade.
- ❖ Highest Maximum temperature recorded as 44.5 °C at Chhor during the last decade.
- ❖ Rain wind-thunderstorm is expected in upper Khyber Pakhtunkhwa, upper Punjab, Kashmir and Gilgit-Baltistan during first half of the decade.
- ❖ Farmers may schedule the harvesting activities on time to get the maximum yield.

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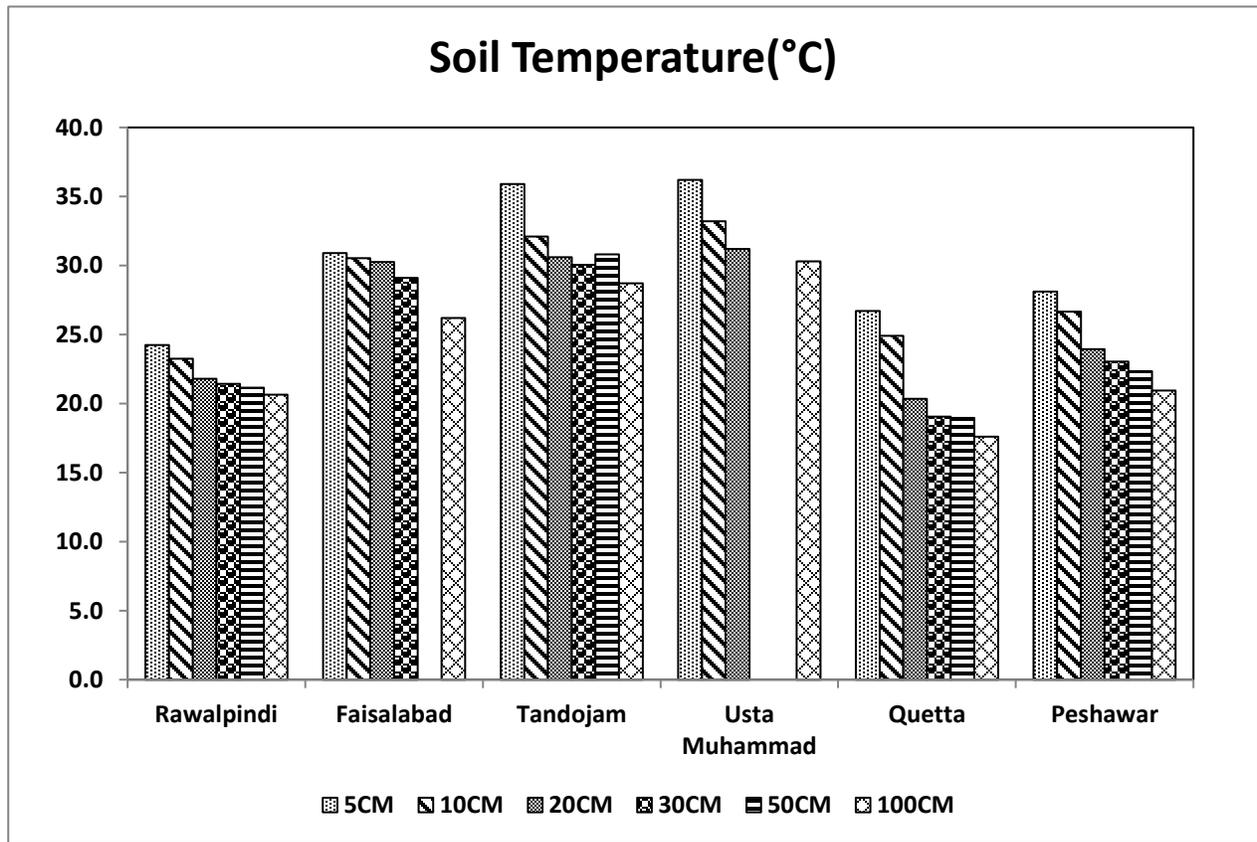
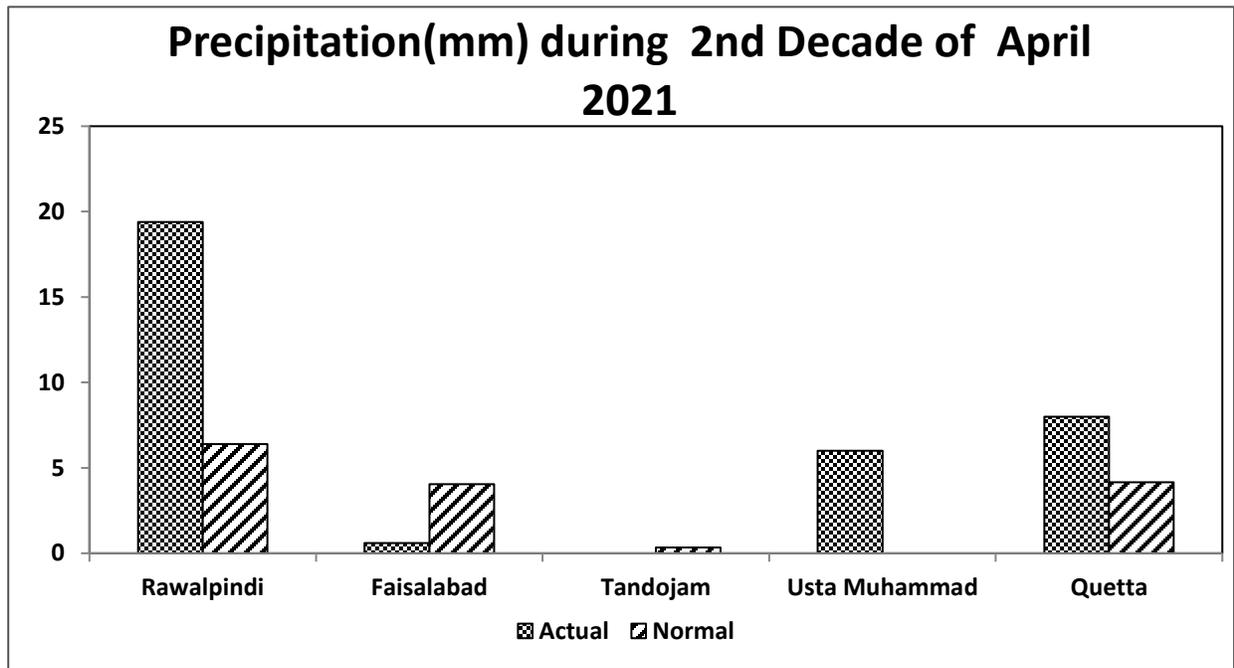
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**Meteorological Conditions during 2<sup>nd</sup> Decade of April, 2021**

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	Tmax Dep	Tmin Dep	Mean	5cm	10cm	20cm	30cm	50cm	100cm				
1	Rawalpindi	<b>30.1</b>	62.6	32.5	-1.1	0.9	20.3	22.5	21.3	19.6	19.1	19.0	18.7	58	79.1	3.3	3.5
2	Faisalabad	<b>6.8</b>	34.6	27.8	-0.5	0.6	23.3	25.3	24.8	24.9	24.0	24.1	23.5	55	87.8	2.7	3.8
3	Jhelum	<b>18.0</b>	56.6	38.6	-0.9	0.8	22.7	25.2	23.8	22.1	21.1	21.3	***	59	80.4	5.9	4.2
4	Lahore	<b>18.6</b>	9.7	-8.9	-0.1	-0.3	24.2	25.6	25.1	23.7	23.0	***	22.3	49	83.2	4.0	4.2
5	Sargodha	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
6	Multan	<b>13.2</b>	21.8	8.6	-0.5	1.7	25.1	***	***	***	***	***	***	52	86.1	4.6	4.5
7	Khanpur	<b>5.2</b>	15.3	10.1	0.6	3.8	27.5	***	27.0	26.9	26.9	26.7	25.5	49	98.3	2.0	4.4
8	Tandojam	<b>0.3</b>	0.0	-0.3	1.2	-1.9	26.8	33.7	30.2	28.6	27.7	30.1	27.0	46	93.4	2.0	4.5
9	Sakrand	<b>1.1</b>	0.0	-1.1	4.5	3.1	28.6	47.1	***	***	***	***	27.0	42	106.7	3.7	5.3
11	Rohri	<b>6.3</b>	4.0	-2.3	1.4	0.2	28.4	***	***	***	***	***	***	39	104.5	8.0	6.7
12	D.I Khan	<b>9.2</b>	13.5	4.3	0.4	1.7	23.8	23.8	23.3	22.8	23.0	11.9	***	56	79.8	6.6	4.6
13	Peshawar	<b>26.3</b>	70.3	44.0	-0.7	1.0	21.2	25.8	22.9	20.3	20.2	19.6	18.9	60	60.1	6.0	3.7
14	Usta M.	<b>7.3</b>	25.0	17.7	1.1	1.2	27.0	32.8	30.3	28.9	***	***	27.7	45	***	0.8	3.9
15	Quetta	<b>10.4</b>	19.2	8.8	0.6	2.0	16.1	24.5	23.1	17.6	16.0	16.0	14.9	30	90.7	6.1	4.4
16	Skardu	<b>5.6</b>	34.9	29.3	-1.7	-0.3	9.3	***	***	***	***	***	***	56	46.7	1.1	2.1
17	Gilgit	<b>2.0</b>	8.3	6.3	-0.8	1.2	14.7	***	***	***	***	***	***	43	47.5	7.0	3.5

**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 April, 2021



**Past Weather (11<sup>th</sup> to 20<sup>th</sup> March, 2021)**

Light to moderate amount of rainfall reported from the agriculture plains of Potohar region, upper Khyber Pakhtunkhwa, Gilgit-Baltistan Azad & Jammu Kashmir, Balochistan and light rain from agriculture plains of Sindh province.

**1.1 Punjab**

Light to moderate amount of rainfall reported from most parts of the agricultural plains of the province. Highest rainfall reported from Attock followed by Sialkot & Noorpur Thal. Decadal Maximum drop below normal by 1.3°C and minimum remained normal in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 44%, 65.7 hrs, 3.1 km/hr and 4.4 mm/day respectively.

**1.2 Sindh**

Light amount of rainfall reported from most parts of the agricultural plains of the province. Highest rainfall reported from Hyderabad followed by Jacobabad & Larkana. Decadal maximum and minimum both dropped below normal by 1.6 and 0.2 °C respectively in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 41%, 73.0 hrs, 3.5km/hr and 5.4 mm/day respectively.

**1.3 Khyber Pakhtunkhwa**

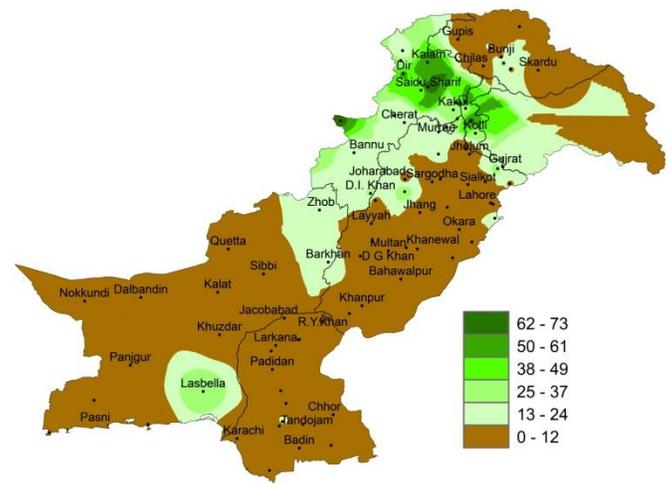
Light to moderate amount of rainfall reported from most parts of the agricultural plains of the province. Highest rainfall reported from Pattan followed by Kohat Airbase & Kalam. Decadal Maximum drop below normal by 1.9°C and minimum remained normal in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 52%, 52.5hrs, 5.5 km/hr and 4.5 mm/day respectively.

**1.4 Baluchistan**

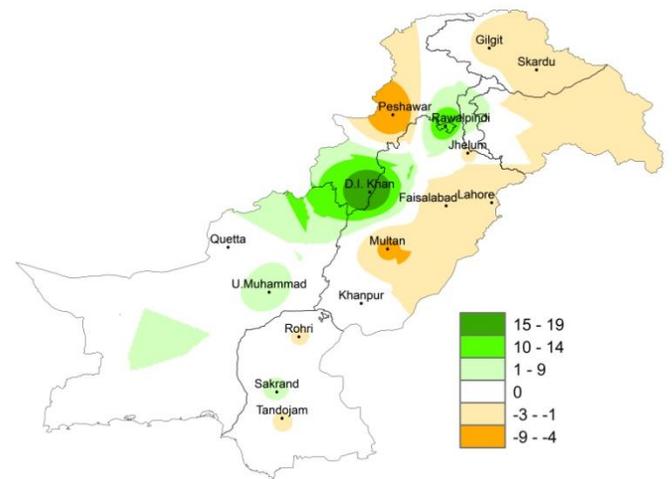
Light to moderate rainfall reported from the agricultural plains of the province. Highest rainfall reported from Lasbella followed by Barkhan and Zhob. Decadal maximum dropped below normal by 0.4 and minimum raised above normal by 0.5 °C respectively in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 33%, 65.6 hrs, 4.4 km/hr and 5.1 mm/day respectively.

**1.5 Gilgit-Baltistan and Azad Jammu & Kashmir**

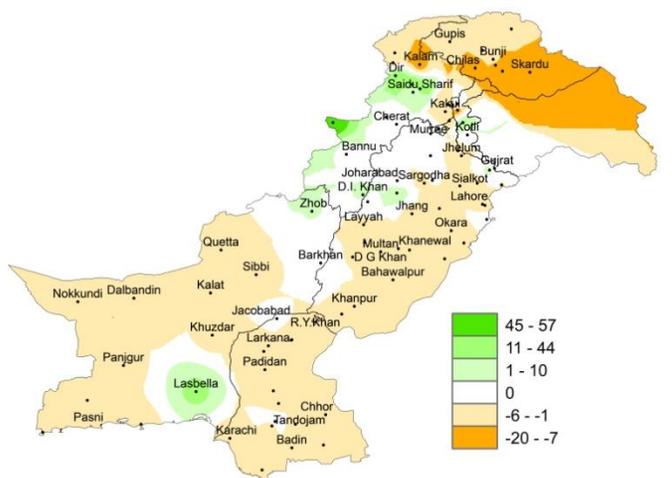
Light to moderate rainfall reported from most parts of the agricultural plains of the province. Highest rainfall reported from Rawalakot followed by Muzaffarabad and. Garhi Dupatta Decadal maximum and minimum both drop below normal by 3.9°C & 1.9°C in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 46%, 46.6 hrs, 4.0 km/hr and 3.0 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**  
**(11<sup>th</sup> to 20<sup>th</sup> March, 2021)**

**2.1 RAMC, Rawalpindi (Potohar region)**

Rainfall reported as 19.4 mm during the decade; however weather remained cloudy for 10 days during the decade. Average relative humidity recorded as 55%. Mean day temperature was 29.3°C while night temperature recorded as 16.2°C with 55.5 hours bright sunshine duration. Wind speed recorded as 2.8 km/hr with mean wind direction *North westerly*.

**2.2 RAMC, Faisalabad (Central Punjab)**

Rainfall reported as 0.6 mm during the decade; however weather remained cloudy for 07 days during the decade. Average relative humidity recorded as 44%. Mean day temperature was 34.1°C while night temperature recorded as 20.1 °C with 69.8hours bright sunshine duration. Wind speed recorded as 3.4 km/hr with mean wind direction *westerly*.

*Wheat: Harvested on 20-04-2021.*

**2.3 RAMC, Tandojam (Lower Sindh)**

Dry weather reported during the decade; however weather remained cloudy for 05 day during the decade. Average relative humidity recorded as 47%. Mean day temperature was 38.5°C while night temperature recorded as 19.1°C with 86.1 hours bright sunshine duration with mean wind direction *South westerly*.

*Cotton Sindh-1: Sown on 12-04-2021*

**2.4 RAMC, Usta Muhammad (Eastern Baluchistan)**

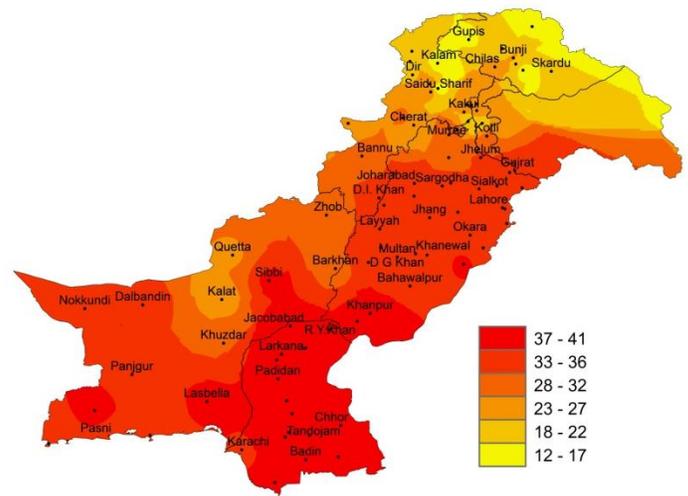
Rainfall reported as 6.0 mm during the decade; however weather remained cloudy for 08 day during the decade. Average relative humidity recorded as 36%. Mean day temperature was 39.3°C while night temperature recorded as 20.7°C with wind speed recorded as 2.7 km/hr with mean wind direction *North easterly*.

*Wheat: Good, Wax Maturity*

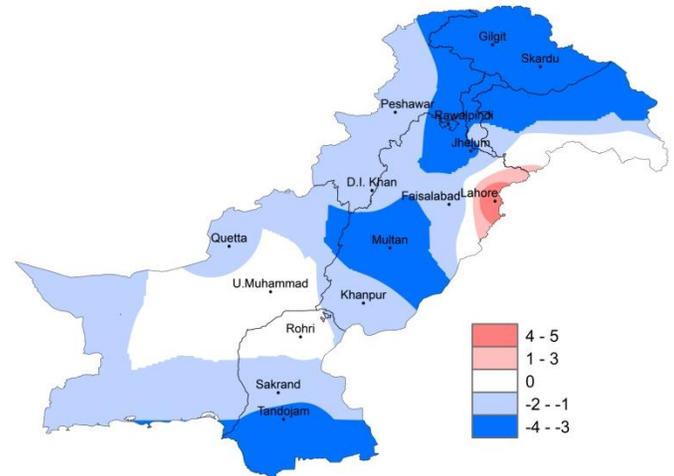
**2.5 RAMC, Quetta (Northern Baluchistan)**

Rainfall reported as 8.0mm during the decade; however weather remained cloudy for 10 days during the decade. Average relative humidity recorded as 30%. Mean day temperature was 25.2°C while night temperature recorded as 11.6°C with 65.6 hours bright sunshine duration. Wind speed recorded as 6.0 km/hr with mean wind direction *Southerly*.

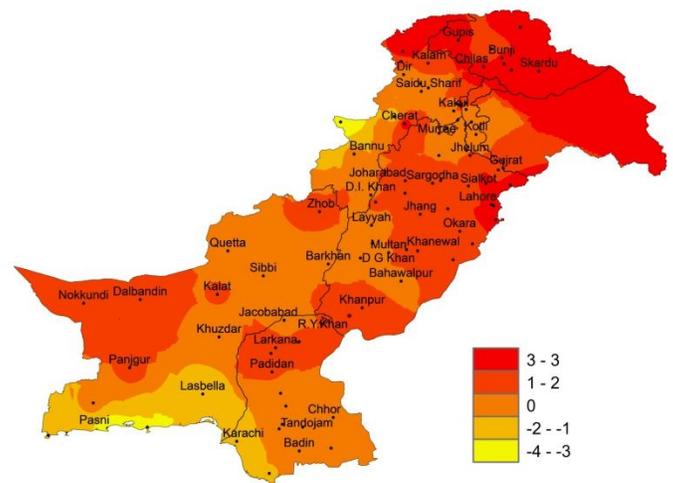
*Wheat Sirab-92: Good, Heading stage.*



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 (11<sup>th</sup> to 20<sup>th</sup> March, 2021)**

**2.6 Jhelum**

Rainfall reported as 8.2 mm during the decade; however weather remained cloudy for 10 days during the decade. Average relative humidity recorded as 47%. Mean day temperature was 32.5°C while night temperature recorded as 18.5°C with 63.3 hours bright sunshine duration. Wind speed recorded as 3.3 km/hr with mean wind direction *North westerly*.

**2.7 Lahore**

Rainfall reported as 0.4 mm during the decade; however weather remained cloudy for 08 days during the decade. Average relative humidity recorded as 40%. Mean day temperature was 39.8°C while night temperature recorded as 21.4°C with 56.1 hours bright sunshine duration. Wind speed recorded as 2.0 km/hr with mean wind direction *westerly*.

**2.8 Sargodha**

Data not available.

**2.9 Multan**

Rainfall reported as 0.7 mm during the decade; however weather remained cloudy for 09 days during the decade. Average relative humidity recorded as 32%. Mean day temperature was 34.1°C while night temperature recorded as 21.6 °C with 60.2hours bright sunshine duration. Wind speed recorded as 5.1 km/hr with mean wind direction *North easterly*.

**2.10 Khanpur**

Rainfall reported as 3.2 mm during the decade; however weather remained cloudy for 03 days during the decade. Average relative humidity recorded as 38%. Mean day temperature was 37.6°C while night temperature recorded as 21.3°C with 89.0 hours bright sunshine duration. Wind direction remained *North easterly*.

**2.11 Sakrand**

Rainfall reported as 6.0 mm during the decade however weather remained cloudy for 05 days during the decade. Average relative humidity recorded as 41%. Mean day temperature was 39.2°C while night temperature recorded as 20.9°C with 99.2 hours bright sunshine duration. Wind speed recorded as 3.9 km/hr with mean wind direction *South easterly*.

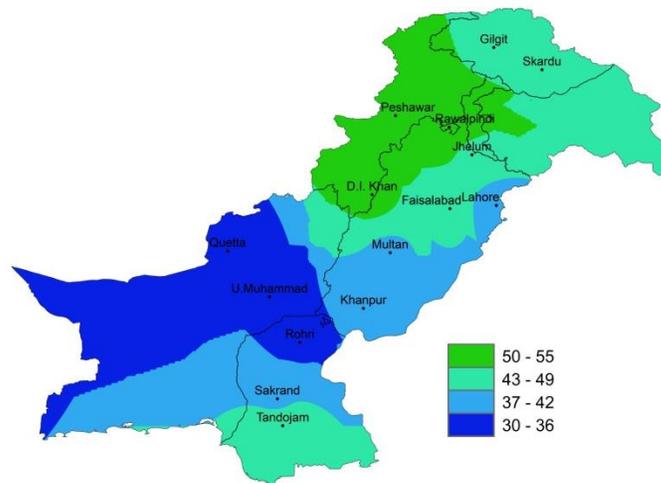


Figure.3: Relative Humidity in Percentage (%)

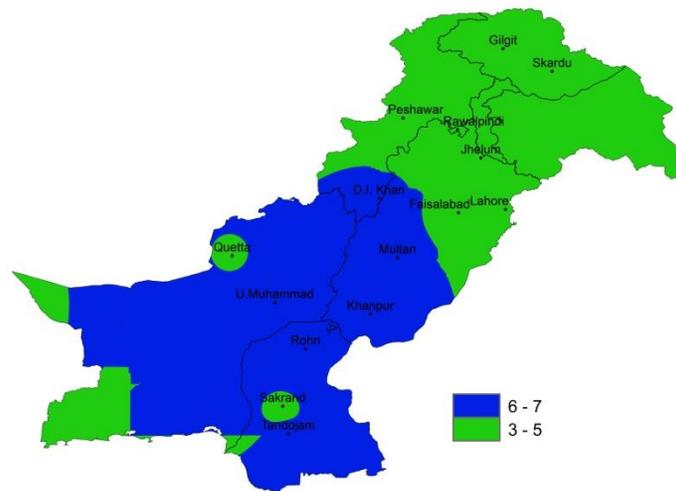


Figure.4: Reference Crop Evapotranspiration ET0 (mm/day)

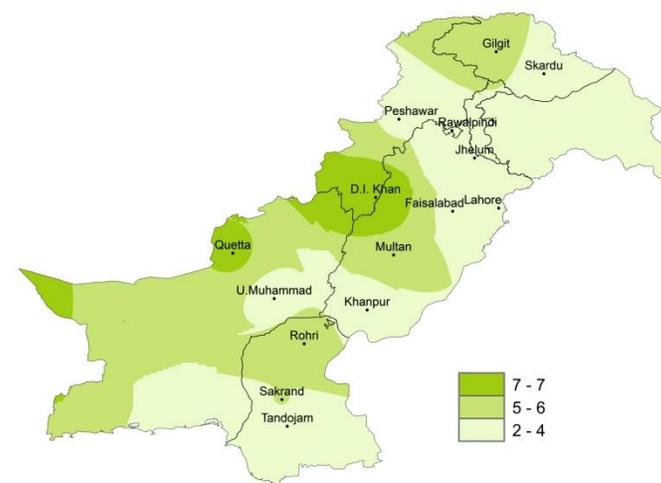


Figure 5: Wind Speed in kilometer per hour (km/h)

**2.12 Rohri**

Rainfall reported as Trace (Non measurable) during the decade; however, weather remained cloudy for 07 days during the decade. Average relative humidity recorded as 34%. Mean day temperature was 40.0°C while night temperature recorded as 24.0°C with 99.7 hours bright sunshine duration. Wind speed recorded as 5.6 km/hr with mean wind direction *Variable*.

**2.13 D.I. Khan**

Rainfall reported as 27.0 mm during the decade; however weather remained cloudy for 09 days during the decade. Average relative humidity recorded as 52%. Mean day temperature was 32.9 °C while night temperature recorded as 20.3 °C with 54.6 hours bright sunshine duration. Wind speed recorded as 7.4km /hr with mean wind direction *North easterly*.

**2.14 Peshawar**

Rainfall reported as 17.2 mm during the decade; however weather remained cloudy for 10 days during the decade. Average relative humidity recorded as 51%. Mean day temperature was 29.8°C while night temperature recorded as 17.1°C with 50.4 hours bright sunshine duration. Wind speed recorded as 3.6 km/hr with mean wind direction *South westerly*.

**2.15 Skardu**

Data not received from the station.

**2.16 Gilgit**

Rainfall reported as 5.6 mm during the decade; however weather remained cloudy for 10 days during the decade. Average relative humidity recorded as 47%. Mean day temperature was 22.3°C while night temperature recorded as 9.4°C with 26.3 hours bright sunshine duration. Wind speed recorded as 5.1 km/hr with mean wind direction *Easterly*.

### **Ten Days Weather Advisory for Farmers (21<sup>st</sup> to 30<sup>th</sup> April, 2021)**

**3.1 Temperature Forecast**

Day time temperatures are likely to remain above normal in southern parts while normal in northern parts of the country, whereas night time temperatures are likely to be slightly above 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 expected in upper parts of the province during the first half of current decade.
- ❖ **Khyber Pakhtunkhwa:** Rain wind-thunderstorm is expected in upper parts of the province during the first half of the current decade.
- ❖ **Sindh:** Very hot and dry weather is expected in most parts of the province during the current decade.
- ❖ **Baluchistan:** Very hot and dry weather is expected in most parts of the province during the current decade.
- ❖ **Gilgit-Baltistan:** Rain wind-thunderstorm is expected during the first half of the current decade.
- ❖ **Kashmir:** Rain wind-thunderstorm is expected during the first half of the current decade.

**3.4 Advisory for Farmers**

- ❖ Farmers may schedule the harvesting activities on time to get the maximum yield.

## 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)