

# Decadal Agromet Bulletin of Pakistan



## Highlights...

- ❖ Light to moderate rainfall reported from most of the agricultural plains of the country while light rainfall from Balochistan and dry weather reported from Sindh during the last decade.
- ❖ Highest amount of rainfall recorded as 124.0 mm at Malamjabba during the last decade.
- ❖ Highest maximum temperature recorded as 49.0°C at Larkana during the last decade.
- ❖ Mainly dry and hot weather is expected in most parts of the country during the current decade; however light to moderate rainfall is expected in few parts of KP, GB and Kashmir.
- ❖ Measures may be taken to preserve the standing crops/orchards from the damaging impacts of extreme weather conditions like thunder/dust storm, gusty winds, hails etc in particular areas.
- ❖ The fields got fallow after the harvesting of wheat may be deeply ploughed and leave empty for a few weeks.
- ❖ Rice growers are advised to sow the crop's *PANERI* in accordance with the recommendation by the agricultural experts.

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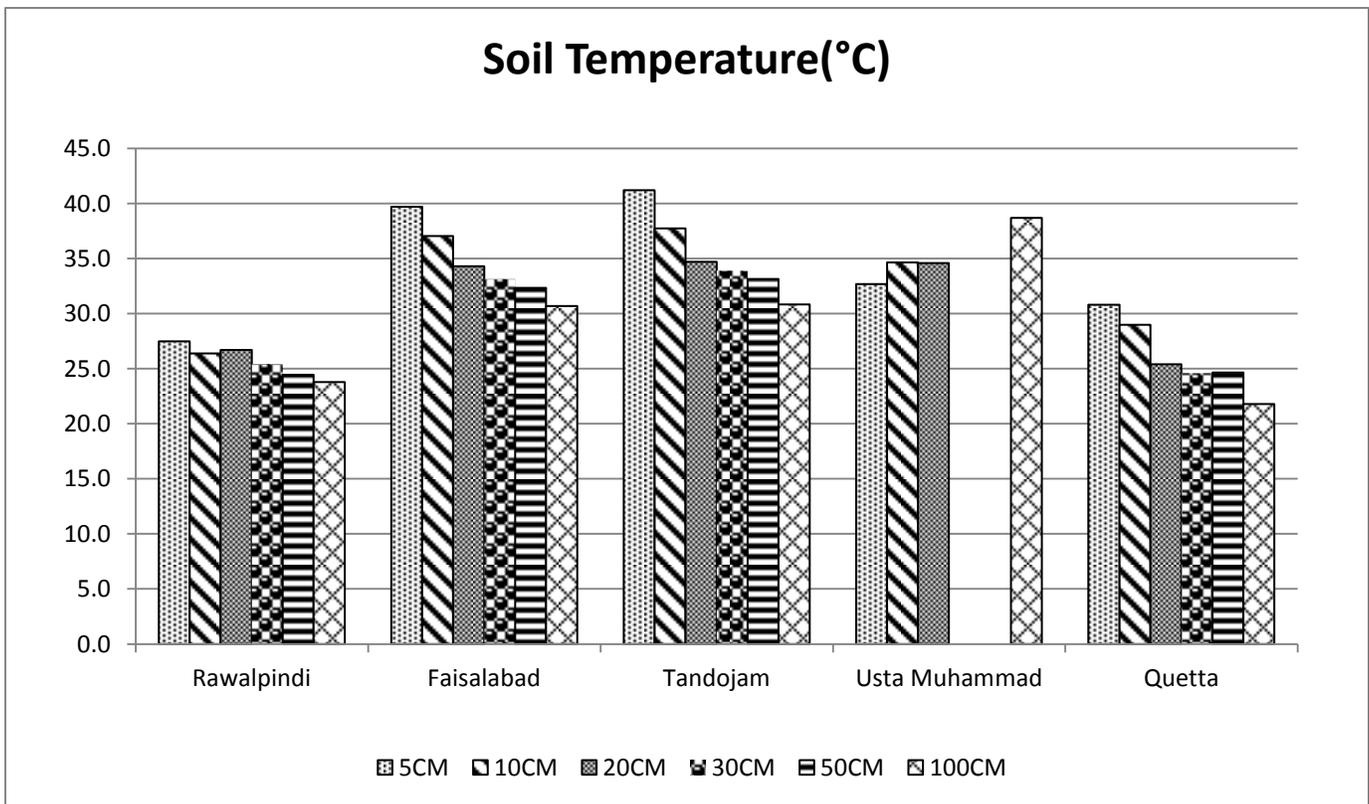
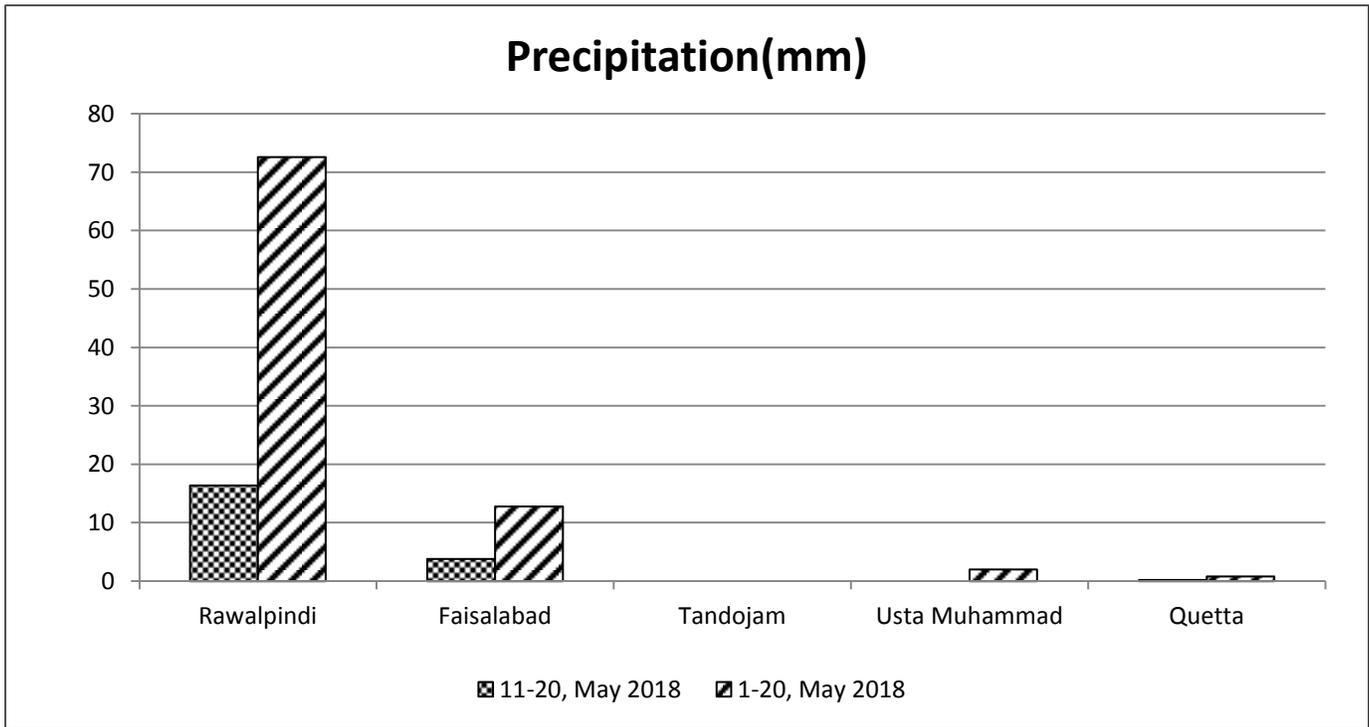
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**Meteorological Conditions during 2<sup>nd</sup> Decade of May, 2018**

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	1.5	16.4	14.9	-4.3	-1.5	26.5	27.5	26.4	26.7	25.5	24.5	23.8	52	78.5	2.9	4.8
2	Faisalabad	0.2	3.8	3.6	-2.4	-0.1	31.9	39.7	37.1	34.3	33.2	32.4	30.7	34	65.2	3.5	5.4
3	Jhelum	0.9	12.8	11.9	-3.0	-1.3	30.3	34.9	32.9	30.3	29.0	29.0	***	27	66.9	4.9	6.0
4	Lahore	0.2	3.6	3.4	-1.5	-0.2	32.4	32.5	31.7	29.9	28.8	***	26.1	34	57.0	1.0	4.1
5	Sargodha	0.6	3.6	3.0	-3.8	-1.1	31.3	36.6	34.3	31.1	30.2	***	27.5	41	73.9	4.8	5.8
6	Multan	0.0	3.6	3.6	-3.9	-1.2	32.5	***	***	***	***	***	***	32	65.8	6.1	6.5
7	Khanpur	0.0	0.0	0.0	-1.0	-0.5	33.5	***	36.6	36.3	36.1	36.0	33.2	35	65.3	6.7	7.0
8	Tandojam	0.0	0.0	0.0	0.8	-1.6	33.1	41.2	37.8	34.7	33.9	33.2	30.9	39	75.8	8.7	7.9
9	Sakrand☆	0.0	0.0	0.0	-1.9	1.5	35.0	45.3	***	***	***	***	34.0	31	97.8	11.0	9.7
11	Rohri	0.0	0.0	0.0	-2.8	-2.5	34.1	***	***	***	***	***	***	30	82.2	2.6	5.5
12	D.I Khan	0.4	4.0	3.6	-2.6	-0.2	31.3	34.7	32.7	31.1	30.7	19.3	***	37	76.1	14.8	9.3
13	Peshawar	0.4	37.0	36.6	-5.7	-3.3	26.5	30.4	29.5	28.1	26.7	25.4	24.7	56	64.3	4.0	9.6
14	Usta .M	0.0	0.0	0.0	-2.5	1.6	36.4	32.7	34.7	34.6	***	***	38.7	38	***	2.6	6.2
15	Quetta	0.1	0.2	0.1	-4.7	2.2	22.7	30.8	29.0	25.4	24.6	24.7	21.8	25	73.0	6.9	5.7
16	Skardu	0.3	0.0	-0.3	-2.2	0.1	17.4	***	***	***	***	***	***	33	57.1	7.0	4.8
17	Gilgit	0.2	3.0	2.8	-6.2	0.8	19.8	***	***	***	***	***	***	49	39.8	3.0	3.6

**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. And "% Dep" is calculated by the formula;  $\text{Dep} \div \text{Normal} \times 100$ . Tmin & Tmax stands for minimum and maximum temperatures respectively. ETo stands for reference crop evapotranspiration. \*\*\* stands for no data and ☆ indicates the station with five year's climatic (normal) data for computing departures.

# Graph at RAMCs during May, 2018



**Past Weather (11<sup>th</sup> to 20<sup>th</sup> May, 2018)**

Light to moderate rainfall reported from most of the agricultural plains of the country while light rainfall from Balochistan and dry weather reported from Sindh during the last decade.

**1.1 Punjab**

Light to moderate rainfall reported most of the agricultural plains of the Punjab. Chief amount of rainfall is received at Murreel, Kamra & Mangla. Decadal maximum & minimum both dropped below normal by 2.8°C & 0.8°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 36%, 67.5hrs, 4.3 km/hr and 5.7 mm/day respectively.

**1.2 Sindh**

Dry weather reported from the agricultural plains of Sindh. Decadal maximum and minimum both dropped below normal by 1.3°C & 0.9°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 33%, 85.3hrs, 7.4km/hr and 7.7mm/day respectively.

**1.3 Khyber Pakhtunkhwa (KP)**

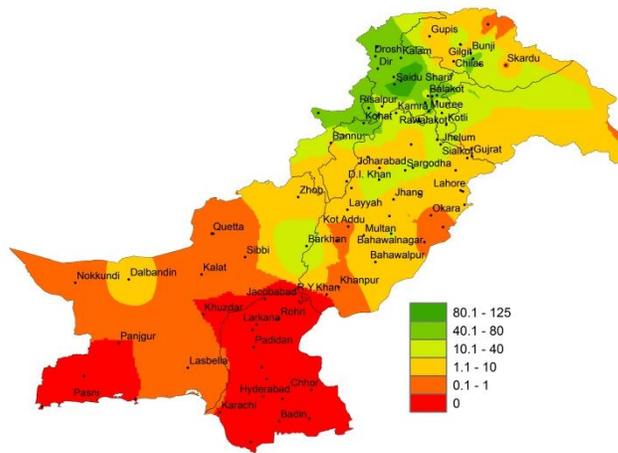
Moderate to heavy rainfall reported from most of the agricultural plains of KP. Chief amount of rainfall is received at MalamJabba, Mirkhani & Saudisharif. Decadal maximum and minimum both dropped below normal by 4.2°C & 1.8°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 47%, 70.2hrs, 9.4km/hr and 9.5 mm/day respectively.

**1.4 Balochistan**

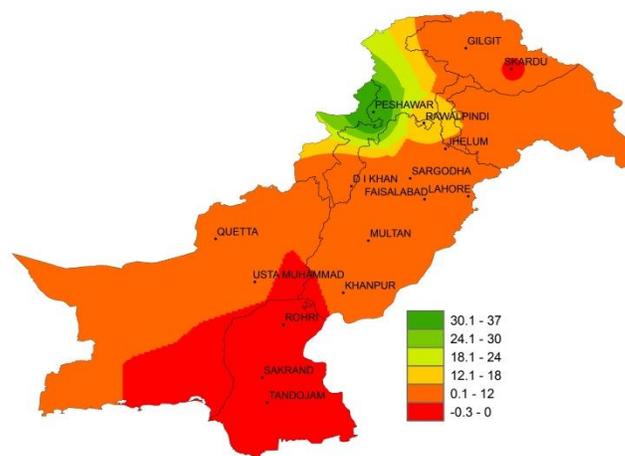
Light rainfall reported few of the plains of Balochistan. Chief amount of rainfall is received at Zhob, Barkhan & Dalbandin. Decadal maximum dropped below normal by 3.6°C & Minimum rased above normal by 1.9°C, in province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 32%, 70.2hrs, 9.4km/hr and 6.0 mm/day respectively.

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

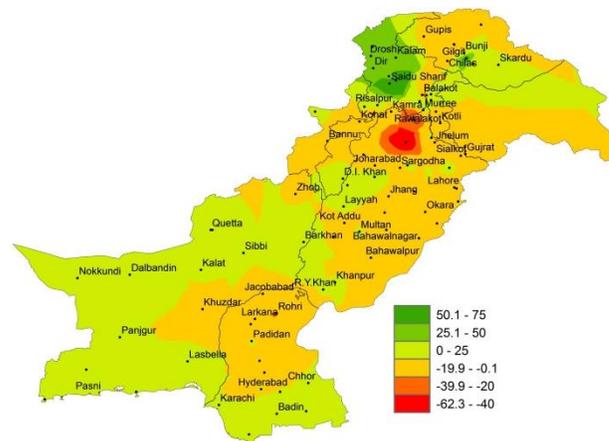
Light to moderate rainfall reported from most of the agricultural plains of G.B and Kashmir. Chief amount of rainfall is received at Muzaffarabad, Garhi Dopatta & Rawalakot. Decadal maximum dropped below normal by 4.2°C & minimum raised above normal by 0.4°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 41%, 48.5hrs, 5.0km/hr and 4.2 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)

**2(a) Past Weather for Major Agricultural Plains (11<sup>th</sup> to 20<sup>th</sup> May, 2018)**

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

Rainfall reported as 16.4mm during the decade; however weather remained cloudy for 05 days during the decade. Average relative humidity recorded as 52%. Mean day temperature was 33.3°C while night temperature recorded as 19.7°C with 78.5 hours bright sunshine duration. Wind speed recorded as 2.9km/hr with mean wind direction *variable*.

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

Rainfall reported as 3.8mm during the decade; however weather remained cloudy for 07days during the decade. Average relative humidity recorded as 34%. Mean day temperature was 38.8°C while night temperature recorded as 24.9°C with 65.3hours bright sunshine duration. Wind speed recorded as 3.5km/hr with mean wind direction *north westerly*.

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

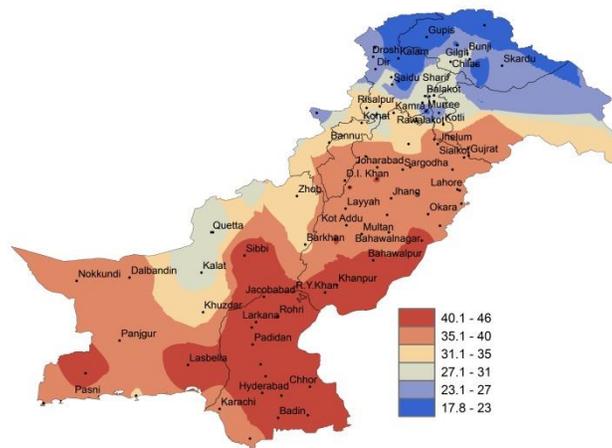
Dry weather reported during the decade; Average relative humidity recorded as 39%. Mean day temperature was 42.1°C while night temperature recorded as 24.1°C with 75.8hours bright sunshine duration. Wind speed recorded as 8.7km/h with mean wind direction *south westerly*.  
*Cotton SIM602: Good condition, third true leaf*

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

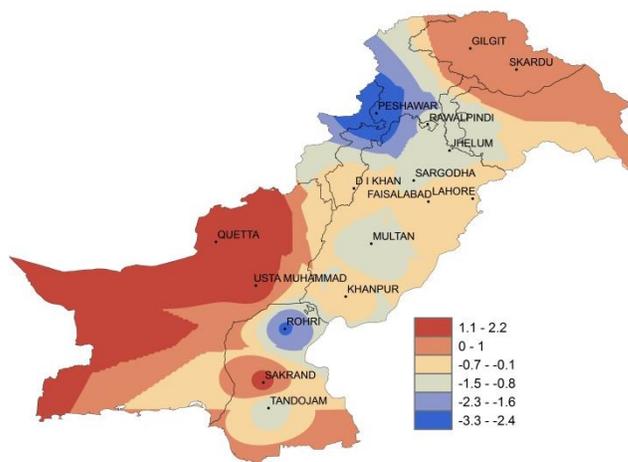
Dry weather reported during the decade; however weather remained cloudy for 03days during the decade. Average relative humidity recorded as 38%. Mean day temperature was 43.8°C while night temperature recorded as 28.9°C. Wind speed recorded as 2.6km/h with mean wind direction *south westerly*.

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

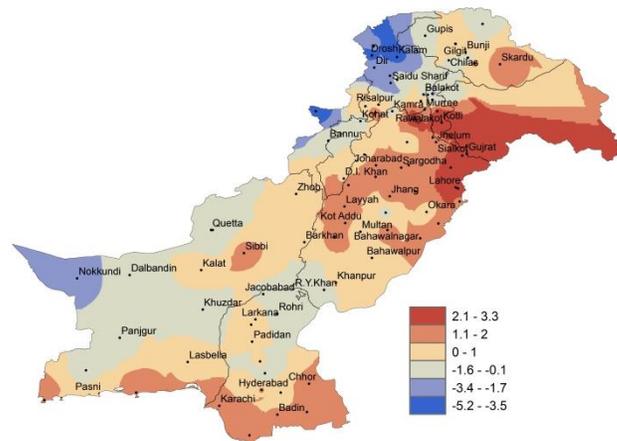
Rainfall reported as 0.2mm during the decade; however weather remained cloudy for 10days during the decade. Average relative humidity recorded as 25%. Mean day temperature was 27.8°C while night temperature recorded as 17.6°C with 73.0 hours bright sunshine duration. Wind speed recorded as 6.9km/hr with 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: Minimum Temperature distribution during previous decade (°C)**

**2(b) Past Weather for Sub-Regional Agricultural Plains (11<sup>th</sup> to 20<sup>th</sup> May, 2018)**

**2.6 Jhelum**

Rainfall reported as 12.8mm during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 37%. Mean day temperature was 37.3 °C while night temperature recorded as 23.2°C with 72.6hours bright sunshine duration. Wind speed recorded as 4.9km/hr with mean wind direction *north westerly*.

**2.7 Lahore**

Rainfall reported as 3.6 mm during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 34%. Mean day temperature was 38.7°C while night temperature recorded as 26.0°C with 57.0 hours bright sunshine duration. Wind speed recorded as 1.0km/hr with mean wind direction *north westerly*.

**2.8 Sargodha**

Rainfall reported as 3.6mm during the decade; however weather remained cloudy for 07days during the decade. Average relative humidity recorded as 41%. Mean day temperature was 38.0°C while night temperature recorded as 24.5°C with 80.3hours bright sunshine duration. Wind speed recorded 4.8km/hr with mean wind direction *south easterly*

**2.9 Multan**

Rainfall reported as 3.6mm during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 32%. Mean day temperature was 39.0°C while night temperature recorded as 25.9°C with 65.8hours bright sunshine duration. Wind speed recorded 6.1km/hr with mean wind direction *south westerly*.

**2.10 Khanpur**

Dry weather reported during the decade; however weather remained cloudy for 07days during the decade. Average relative humidity recorded as 35%. Mean day temperature was 41.1°C while night temperature recorded as 25.9°C with 65.3hours bright sunshine duration. Wind speed recorded 6.7km/hr with mean wind direction *north easterly*.

**2.11 Sakrand**

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 31%. Mean day temperature was 42.6°C while night temperature recorded as 27.4°C with 97.8hours bright sunshine duration. Wind speed recorded 11.0km/hr with wind direction *north westerly*.

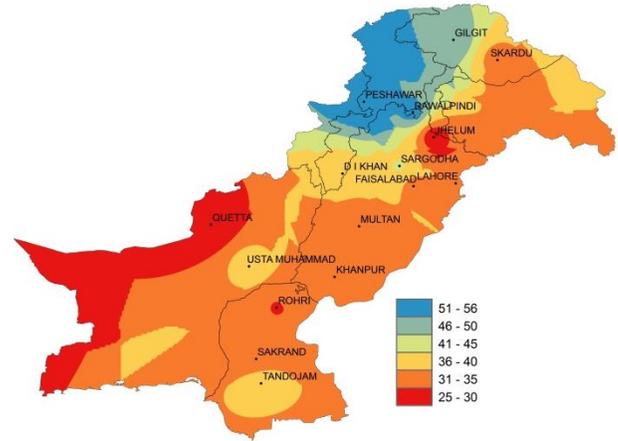


Figure.3: Relative Humidity in Percentage (%)

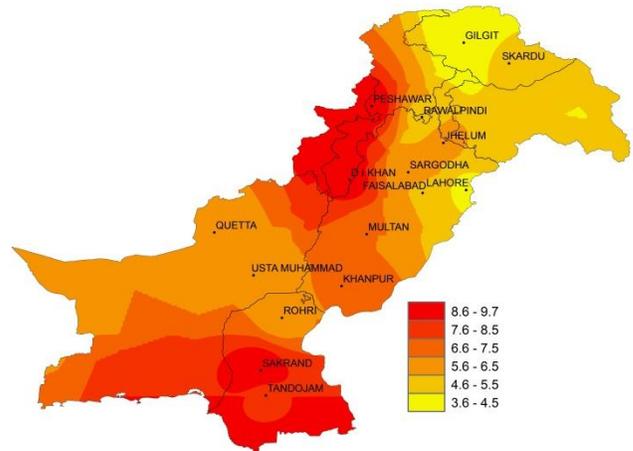


Figure.4: Reference Crop Evapotranspiration ETo (mm/day)

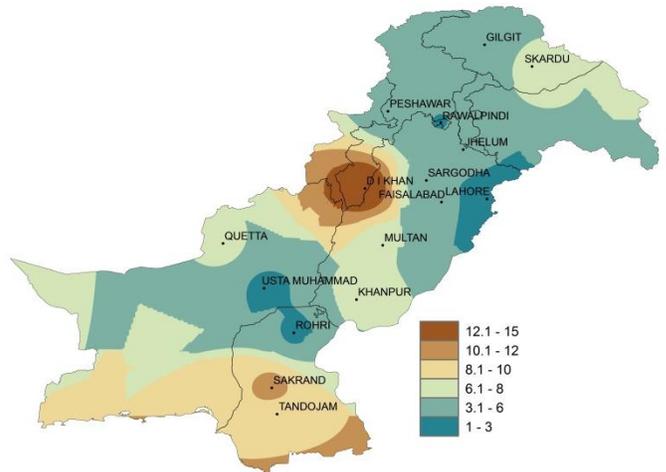


Figure 5: Wind Speed in kilometer per hour (km/h)

**2.12 Rohri**

Dry weather reported during the decade; however weather remained cloudy for 03days during the decade. Average relative humidity recorded as 30%. Mean day temperature was 41.7°C while night temperature recorded as 26.4°C with 82.2hours bright sunshine duration. Wind speed recorded 2.6km/hr with wind direction *north easterly*.

**2.13 D.I. Khan**

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 06day during the decade. Average relative humidity recorded as 48%. Mean day temperature was 37.8°C while night temperature recorded as 23.7°C with 84.3hours bright sunshine duration. Wind speed recorded as 13.0km/hr with mean wind direction *variable*.

**2.14 Peshawar**

Rainfall reported as 37.0mm during the decade; however weather remained cloudy for 10days during the decade. Average relative humidity recorded as 56%. Mean day temperature was 32.6°C while night temperature recorded as 20.3°C with 64.3hours bright sunshine duration. Wind speed recorded as 4.0km/hr with mean wind direction *north westerly*.

**2.15 Skardu**

Dry weather reported during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 33%. Mean day temperature was 24.6°C while night temperature recorded as 10.1°C with 57.1hours bright sunshine duration. Wind speed recorded as 7.0km/hr with mean wind direction *southerly*.

**2.16 Gilgit**

Rainfall reported as 3.0mmduring the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 49%. Mean day temperature was 26.9°C while night temperature recorded as 12.7°C with 63.3hours bright sunshine duration. Wind speed recorded as 3.0km/hr with mean wind direction *south westerly*.

**Ten Days Weather Advisory for Farmers**  
**(21<sup>st</sup> to 31<sup>st</sup> May, 2018)**

**3.1 Temperature Forecast**

Both day and night temperatures are likely to be slightly above normal in most parts of the country during the decade.

**3.2 Wind Forecast**

- Normal wind pattern may prevail in most of the agricultural plains of the country during the decade; however dust/sand storms may occur in southern Punjab and upper Sindh.

**3.3 Rain Forecast**

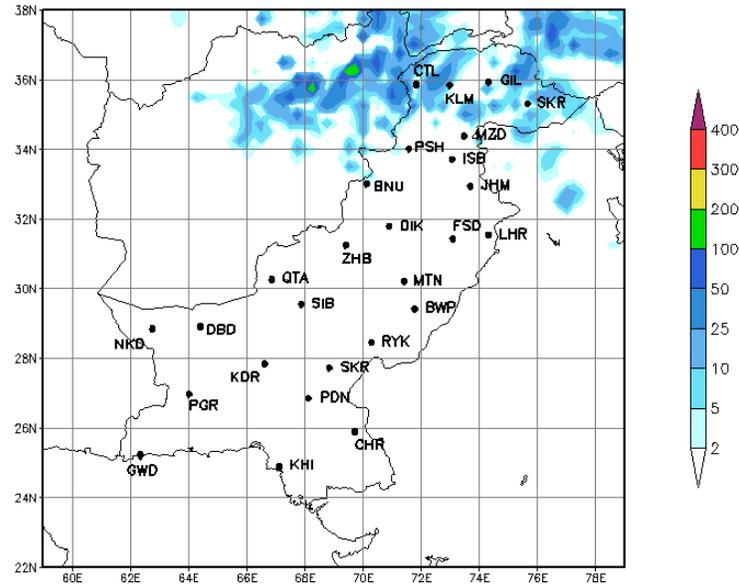
- ❖ **Punjab:** Hot and dry weather is expected in most parts of the province during the decade.
- ❖ **Khyber Pakhtunkhwa:** Light to moderate rain-thunderstorm is expected at few places of the province during the decade.
- ❖ **Sindh:** Hot and dry weather is expected in most parts of the province during the decade.
- ❖ **Balochistan:** Hot and dry weather is expected in most parts of the province during the decade.
- ❖ **Gilgit-Baltistan:** Light to moderate rain-thunderstorm with gusty winds is expected at isolated places during the decade.
- ❖ **Kashmir:** Light to moderate rain-thunderstorm is expected at few of the places in Kashmir and its adjoining areas during the decade.

**3.4 Advisory for Farmers**

- ❖ Measures may be taken to preserve the standing crops/orchids from the damaging impacts of extreme weather conditions like thunder/dust storm, gusty winds, hails etc in particular areas.
- ❖ The fields got fallow after the harvesting of wheat may be deeply ploughed and leave empty for a few weeks.
- ❖ The farmers of lower half may regularly irrigate their Kharif crops by keeping in view the ongoing hot weather conditions.
- ❖ Rice growers are advised to sow the crop's PANERI in accordance with the recommendation by the agricultural experts.

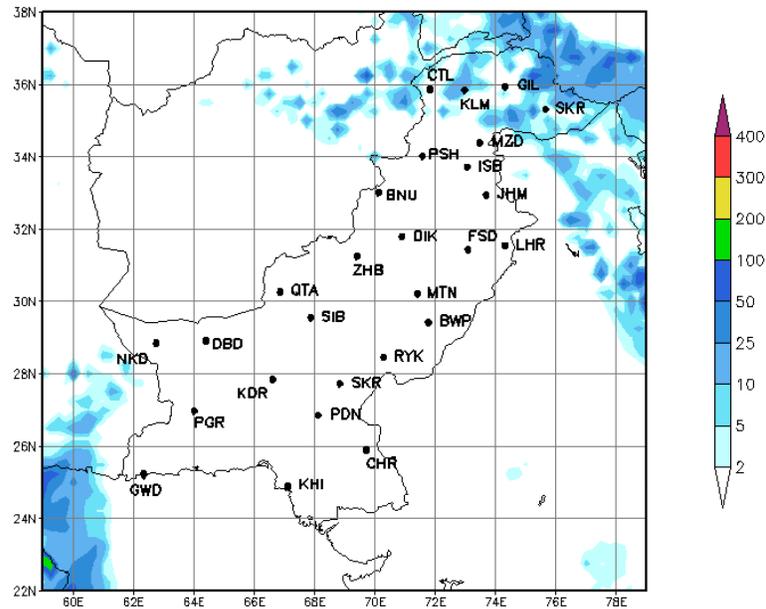
**4.1 Precipitation Outlook (21<sup>st</sup> to 23<sup>rd</sup> May, 2018)**

The forecast for the first three days (21<sup>st</sup> to 23<sup>rd</sup>) of the third decade of May, 2018 shows that mostly hot and dry weather is expected in most parts of the country. However, light rainfall is expected at scattered places in upper KP, G.B and Kashmir.



**4.2 Precipitation Outlook (24<sup>th</sup> to 31<sup>st</sup> May, 2018)**

The outlook for the last eight days (24<sup>th</sup> to 31<sup>st</sup>) of the third decade of May, 2018 shows that mostly hot and dry weather is expected in most parts of the country. However, light rainfall is expected at scattered places in upper KP, G.B and Kashmir.



## Findings of AgMIP Paksitan, 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)