

Decadal Agromet Bulletin of Pakistan



Highlights...

- ❖ Light to moderate rainfall reported from most of the parts of Punjab K.P, Balochistan, G.B & Kashmir while light rainfall was reported from few places of Sindh during the last decade.
- ❖ Highest amount of rainfall recorded as 255.0 mm at Malam Jabba during the last decade.
- ❖ Highest maximum temperature recorded as 43.5°C at Sh. Benazirabad 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 most of the upper parts of the country.
- ❖ 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.
- ❖ Wheat crop is at heading-maturity stages in northern half of the country. Farmers are advised to schedule their harvesting by keeping in view the weather forecast.
- ❖ 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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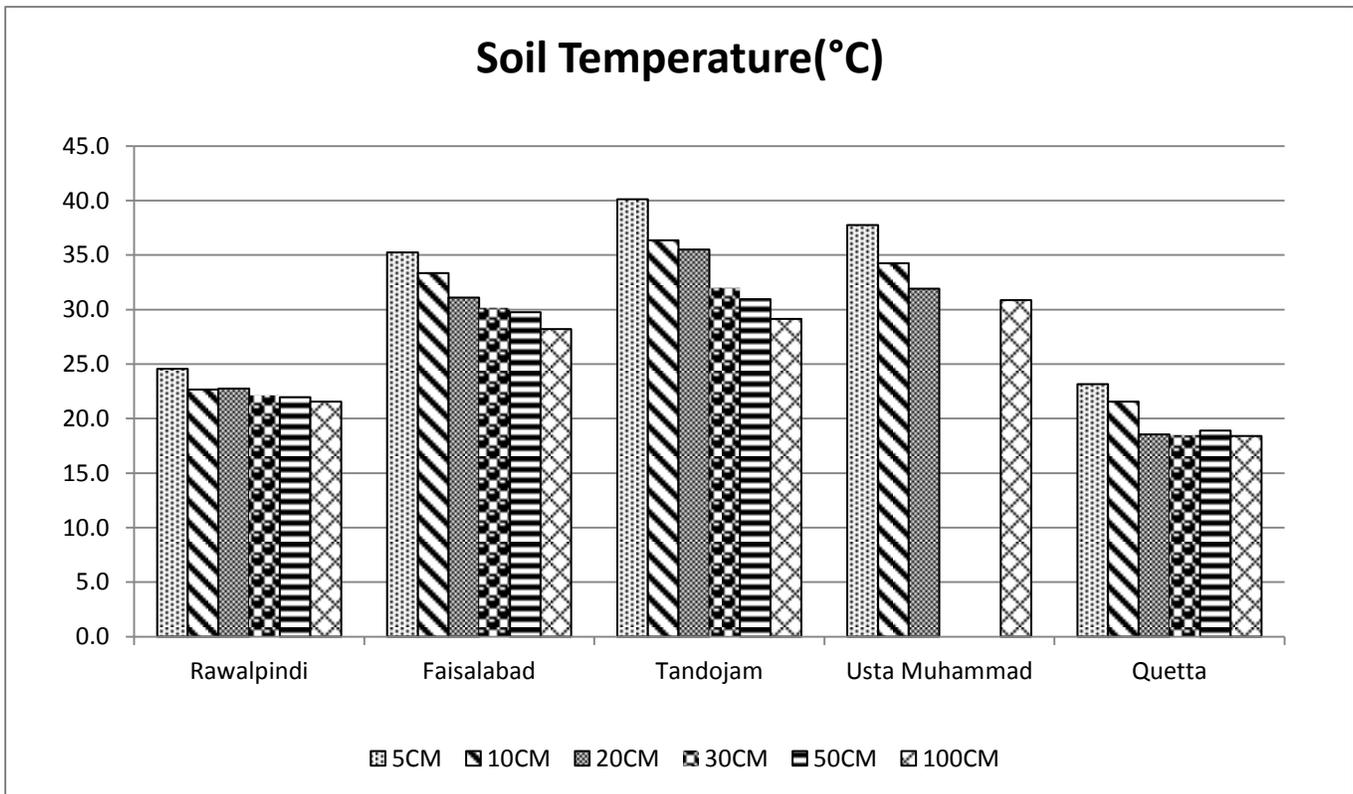
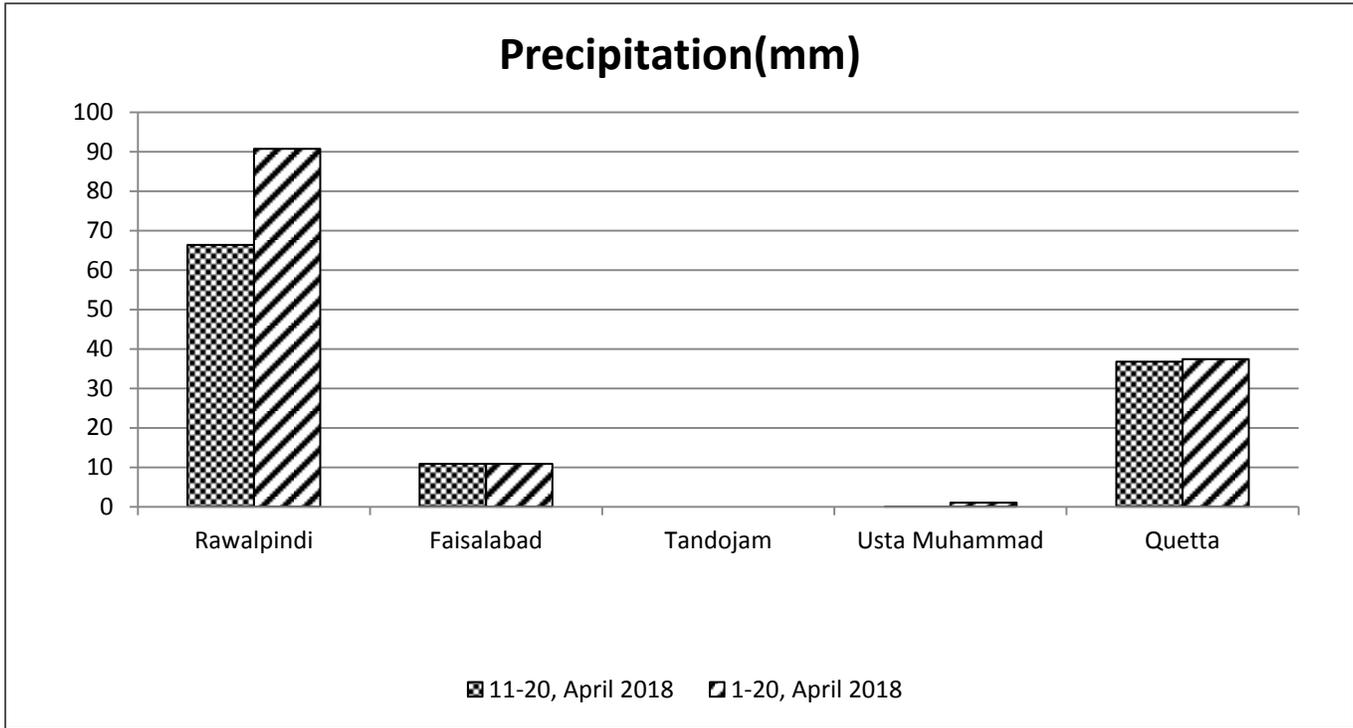
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Meteorological Conditions during 2nd Decade of April, 2018

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	0.6	66.4	65.8	-3.0	-1.0	22.1	24.6	22.7	22.8	22.2	22.0	21.6	52	75.8	4.7	4.4
2	Faisalabad	0.4	10.9	10.5	-2.4	0.5	26.9	35.3	33.4	31.1	30.2	29.8	28.2	47	78.8	3.3	4.6
3	Jhelum	0.8	27.4	26.6	-2.5	-1.3	25.1	30.2	28.5	26.4	25.8	26.0	***	46	79.1	5.9	5.2
4	Lahore	0.2	2.9	2.7	-1.4	-0.7	27.6	30.2	29.5	27.6	26.7	***	24.4	43	70.1	1.1	3.8
5	Sargodha	0.5	47.7	47.2	-3.8	-0.6	26.1	31.8	29.9	27.2	26.8	***	25.3	52	73.6	5.4	4.9
6	Multan	0.6	5.7	5.1	-2.9	0.0	27.7	***	***	***	***	***	***	39	91.0	6.4	6.1
7	Khanpur	0.0	0.0	0.0	-1.1	0.4	30.1	***	33.2	33.0	33.0	33.0	32.0	30	86.1	6.9	6.8
8	Tandojam	0.0	0.0	0.0	-11.1	-0.5	26.0	40.1	36.4	35.5	32.0	31.0	29.2	39	92.4	6.1	5.8
9	Sakrand☆	0.0	0.0	0.0	-0.4	2.3	31.3	41.3	***	***	***	***	30.3	32	104.0	4.3	6.3
11	Rohri	0.0	0.0	0.0	-1.2	0.4	31.6	***	***	***	***	***	***	32	93.7	2.1	5.0
12	D.I Khan	0.8	12.0	11.2	-1.6	-0.1	26.3	29.6	27.9	26.3	26.5	15.5	24.8	56	67.8	12.4	6.1
13	Peshawar	2.6	32.4	29.8	-3.5	-2.5	21.8	25.9	25.1	22.5	22.2	22.0	21.8	59	45.2	2.5	3.2
14	Usta .M	0.0	0.0	0.0	0.3	2.0	31.3	37.8	34.3	31.9	***	***	30.9	39	***	4.2	6.1
15	Quetta	0.4	36.8	36.4	-5.0	0.7	16.1	23.2	21.6	18.6	18.5	18.9	18.4	42	77.0	5.6	4.2
16	Skardu	0.8	14.2	13.4	0.0	0.0	13.1	***	***	***	***	***	***	37	53.3	5.7	3.7
17	Gilgit	0.6	6.8	6.2	-2.1	-0.2	16.1	***	***	***	***	***	***	44	41.0	3.5	3.2

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 April, 2018



Past Weather (11th to 20th April, 2018)

Light to moderate rainfall reported from most of the parts of Punjab K.P, Balochistan, G.B & Kashmir while light rainfall was reported from few places of Sindh during the last decade.

1.1 Punjab

Light to moderate rainfall reported from most of the agricultural plains of Punjab. Chief amount of rainfall is received at Murree, Kamra & Jhang. Decadal maximum & minimum both dropped below normal by 2.4°C & 0.4°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 44%, 79.2hrs, 4.8km/hr and 5.1mm/day respectively.

1.2 Sindh

Light rainfall reported from few agricultural plains of Sindh. Chief amount of rainfall is received at Jacobabad & Moen Jo Daro. Decadal maximum dropped below normal by 4.2°C & minimum raised above normal by 0.7°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 34%, 96.7hrs, 4.2km/hr and 6.7mm/day respectively.

1.3 Khyber Pakhtunkhwa (KP)

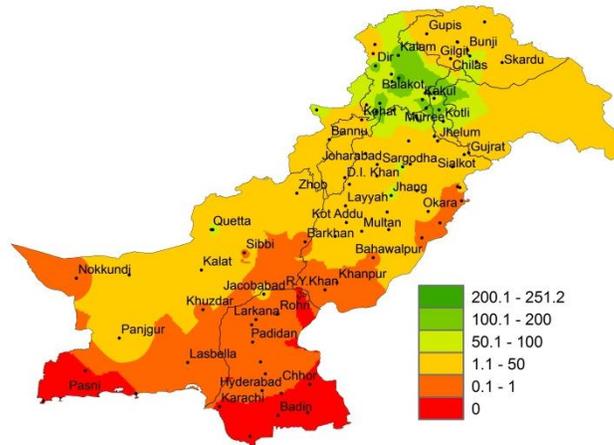
Light to moderate rainfall reported from agricultural plains of KP. Chief amount of rainfall is received at Malam Jabba, Pattan & Kalam. Decadal maximum & minimum departure both dropped below normal by 2.6°C & 1.3°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 58%, 56.5hrs, 7.5km/hr and 4.7mm/day respectively.

1.4 Balochistan

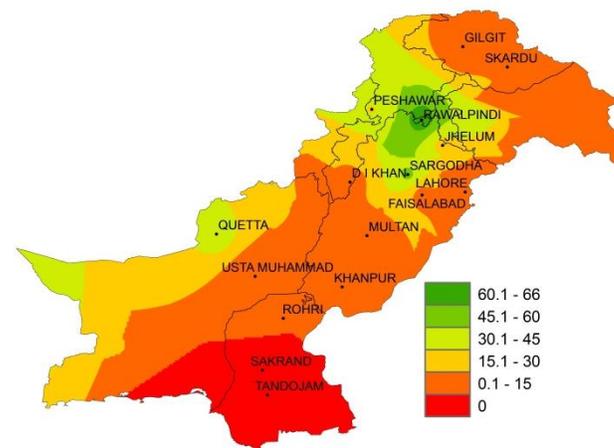
Light to moderate rainfall reported from agricultural plains of Balochistan. Chief amount of rainfall is received at Quetta, Kalat & Dalbandin. Decadal maximum dropped below normal by 2.4°C & minimum raised above normal by 1.4°C, in the province, in province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 41%, 77.0hrs, 4.9km/hr and 5.2mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

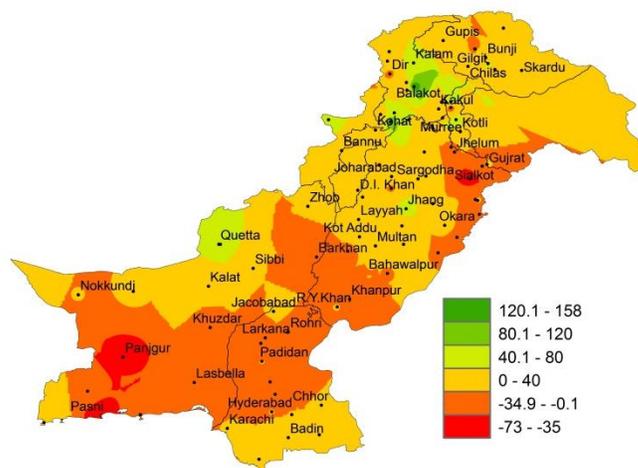
Light to moderate rainfall reported from the agricultural plains of G.B & Kashmir. Chief amount of rainfall is received at Rawalakot, Muzzaffarabad & Garhi Dopatta. Decadal maximum & minimum both dropped below normal by 1.1°C & 0.1°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 41%, 47.0hrs, 4.6km/hr and 3.5mm/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**
(11th to 20th April, 2018)

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

Rainfall reported as 66.4mm during the decade; however weather remained cloudy for 07days during the decade. Average relative humidity recorded as 52%. Mean day temperature was 28.9°C while night temperature recorded as 15.2°C with 75.8hours bright sunshine duration. Wind speed recorded as 4.7km/hr with mean wind direction *westerly*.

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

Rainfall reported as 10.9mm during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 47%. Mean day temperature was 33.8°C while night temperature recorded as 20.0°C with 78.83hours bright sunshine duration. Wind speed recorded as 3.3km/hr with mean wind direction *southerly*.

Wheat: *Very good condition, full maturity.*

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

Dry weather reported during the decade; however weather remained cloudy for 02days during the decade. Average relative humidity recorded as 39%. Mean day temperature was 39.4°C while night temperature recorded as 20.5°C with 92.4hours bright sunshine duration. Wind speed recorded as 6.1km/h with mean wind direction *south westerly*.

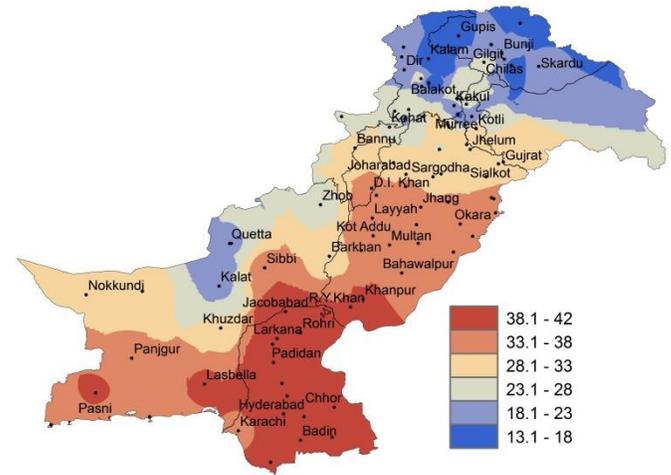
2.4 **RAMC, Usta Muhammad (Eastern Balochistan)**

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 39%. Mean day temperature was 39.6°C while night temperature recorded as 22.9°C. Wind speed recorded as 4.2km/h with mean wind direction *south westerly*.

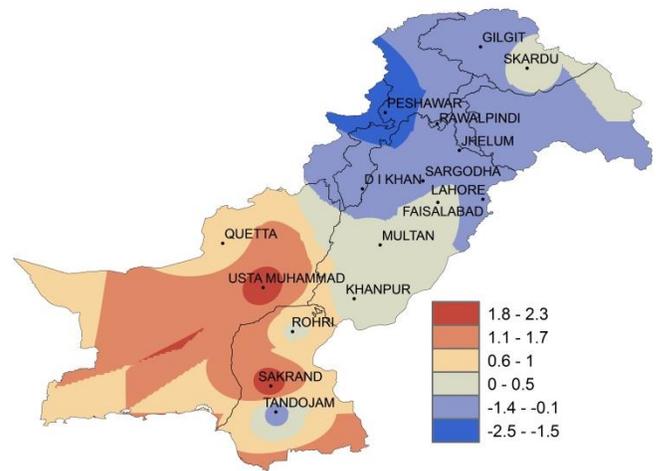
Wheat: *Harvested.*

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

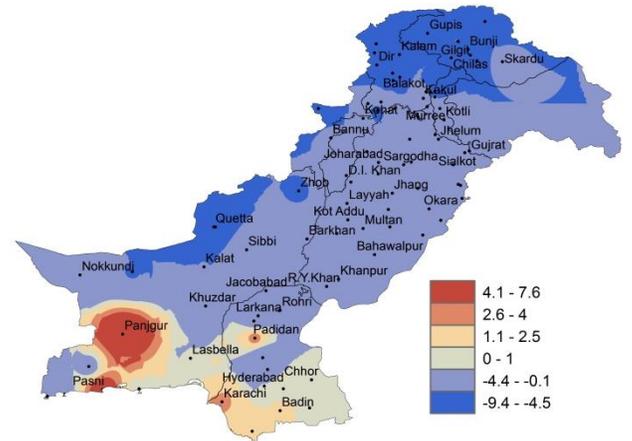
Rainfall reported as 36.8mm during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 42%. Mean day temperature was 21.0°C while night temperature recorded as 11.2°C with 77.0hours bright sunshine duration. Wind speed recorded as 5.6km/hr with 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 (11th to 20th April, 2018)

2.6 Jhelum

Rainfall reported as 27.4mm during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 46%. Mean day temperature was 32.4°C while night temperature recorded as 17.8°C with 79.1hours bright sunshine duration. Wind speed recorded as 5.9km/hr with mean wind direction *south westerly*.

2.7 Lahore

Rainfall reported as 2.9mm during the decade; however weather remained cloudy for 10days during the decade. Average relative humidity recorded as 43%. Mean day temperature was 33.8°C while night temperature recorded as 21.4°C with 70.1hours bright sunshine duration. Wind speed recorded as 1.1km/hr with mean wind direction *north westerly*.

2.8 Sargodha

Rainfall reported as 47.7mm during the decade; however weather remained cloudy for 10days during the decade. Average relative humidity recorded as 52%. Mean day temperature was 32.2°C while night temperature recorded as 19.9°C with 73.6hours bright sunshine duration. Wind speed recorded 5.4km/hr with mean wind direction *north easterly*.

2.9 Multan

Rainfall reported as 5.7mm during the decade; however weather remained cloudy for 10days during the decade. Average relative humidity recorded as 39%. Mean day temperature was 34.5°C while night temperature recorded as 20.9°C with 91.0hours bright sunshine duration. Wind speed recorded 6.4km/hr with mean wind direction *south easterly*.

2.10 Khanpur

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 07days during the decade. Average relative humidity recorded as 30%. Mean day temperature was 38.2°C while night temperature recorded as 21.9°C with 86.1hours bright sunshine duration. Wind speed recorded 6.9km/hr with mean wind direction *north easterly*.

2.11 Sakrand

Dry weather reported during the decade; however weather remained cloudy for 02days during the decade. Average relative humidity recorded as 32%. Mean day temperature was 39.6°C while night temperature recorded as 22.9°C with 104.0hours bright sunshine duration. Wind speed recorded 4.3km/hr with wind direction *southerly*.

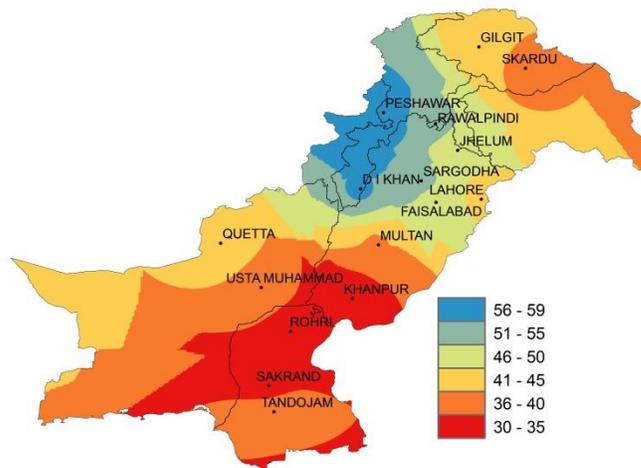


Figure.3: Relative Humidity in Percentage (%)

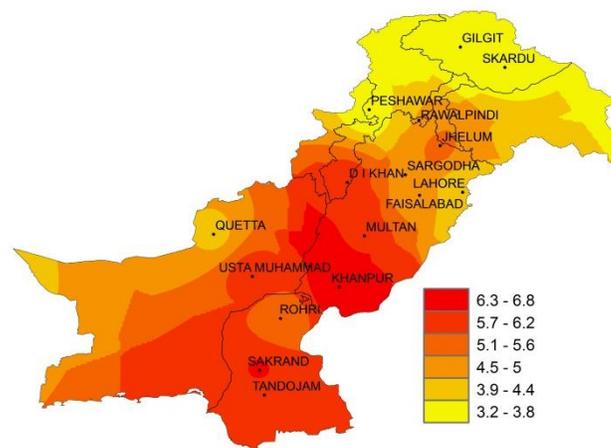


Figure.4: Reference Crop Evapotranspiration ET0 (mm/day)

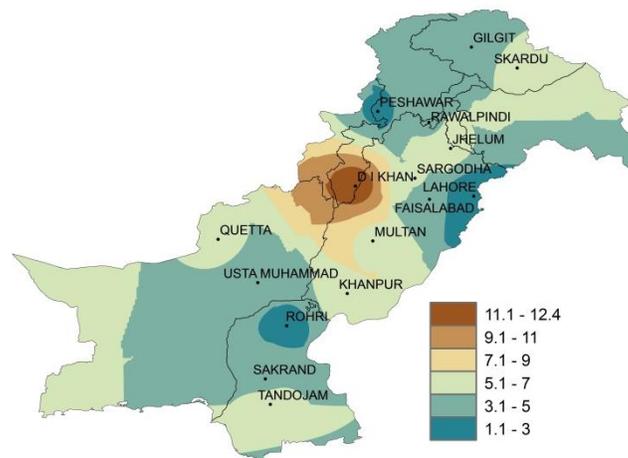


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Dry weather reported during the decade; however weather remained cloudy for 02days during the decade. Average relative humidity recorded as 32%. Mean day temperature was 38.8°C while night temperature recorded as 24.4°C with 93.7hours bright sunshine duration. Wind speed recorded 2.1km/hr with wind direction *north westerly*.

2.13 D.I. Khan

Rainfall reported as 12.0mm during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 56%. Mean day temperature was 33.3°C while night temperature recorded as 19.2°C with 67.8hours bright sunshine duration. Wind speed recorded as 12.4km/hr with mean wind direction *north easterly*.

2.14 Peshawar

Rainfall reported as 32.4mm during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 59%. Mean day temperature was 28.0°C while night temperature recorded as 15.6°C with 45.2hours bright sunshine duration. Wind speed recorded as 2.5km/hr with mean wind direction *north westerly*.

2.15 Skardu

Rainfall reported as 14.2mm during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 37%. Mean day temperature was 19.8°C while night temperature recorded as 6.4°C with 53.3hours bright sunshine duration. Wind speed recorded as 5.7km/hr with mean wind direction *south easterly*.

2.16 Gilgit

Rainfall reported as 6.8mm during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 44%. Mean day temperature was 22.8°C while night temperature recorded as 9.4°C with 41.0hours bright sunshine duration. Wind speed recorded as 3.5km/hr with mean wind direction *south westerly*.

Ten Days Weather Advisory for Farmers
(23rd to 30th April, 2018)

3.1 Temperature Forecast

Night temperatures and day temperatures are likely to be slightly 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

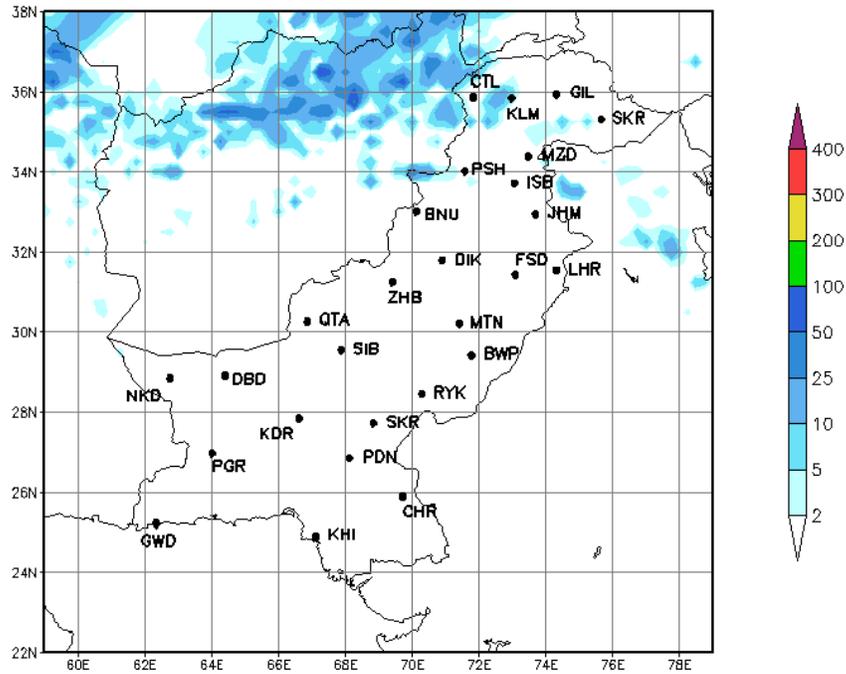
- ❖ **Punjab:** Partly hot and dry weather is expected in most parts while light to moderate rain-thunderstorm is expected at scattered places during the second half of the decade.
- ❖ **Khyber Pakhtunkhwa:** Light to moderate rain-thunderstorm is expected at most of the places of the province during the decade.
- ❖ **Sindh:** Mainly hot and dry weather is expected in the province during the decade.
- ❖ **Balochistan:** Light rain-thunderstorm with gusty winds is expected at few places in Zhob division 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 most 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.
- ❖ 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.
- ❖ Farmers are advised to ensure field sanitation and spray prophylactic fungicidal sprays to prevent spread of diseases on vegetables.

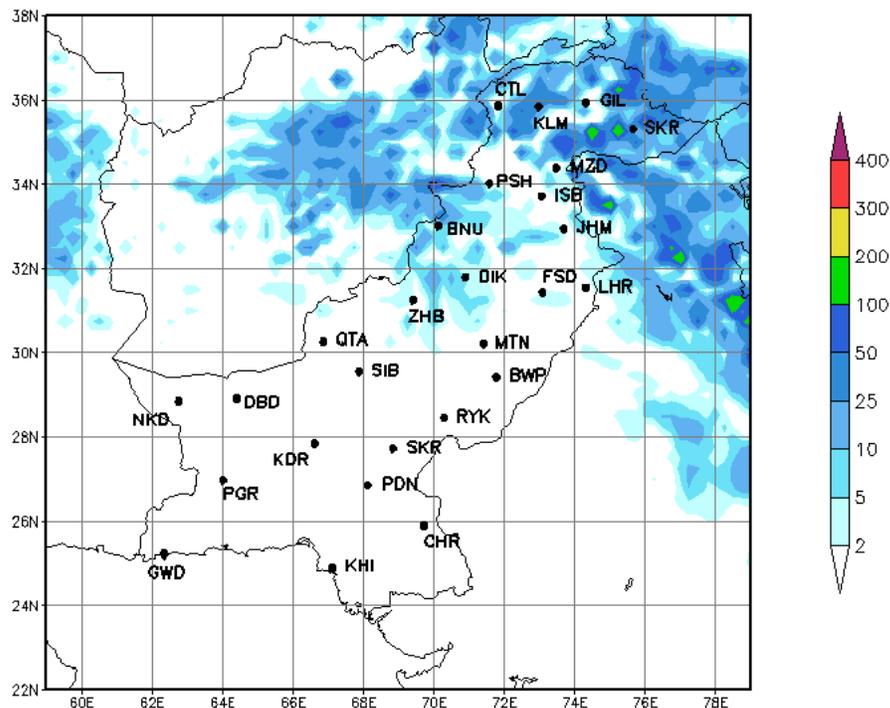
4.1 Precipitation Outlook (23rd to 25th April, 2018)

The forecast for the next three days (23rd to 25th) of the third decade of April, 2018 shows that mainly dry weather is expected in most parts of the country. However light to moderate rainfall is expected at scattered places in KP, G.B and Kashmir. Dry weather may prevail in rest parts of the country.



4.2 Precipitation Outlook (26th to 30th March, 2018)

The outlook for the last five days (26th to 30th) of the third decade of April, 2018 shows that light to moderate rainfall is expected at most of the places of KP, Upper Punjab, northern Balochistan, Kashmir and GB.



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)