

Decadal Agromet Bulletin of Pakistan



Highlights...

- ❖ Light to moderate rainfall reported from most of the parts of Punjab K.P, G.B & Kashmir while light rainfall was reported from Sindh and Balochistan during the last decade.
- ❖ Highest amount of rainfall recorded as 116.0 mm at Dir during the last decade.
- ❖ Highest maximum temperature recorded as 46.5°C at Sh. Benazirabad during the last decade.
- ❖ Mainly cloudy weather with light to moderate rainfall is expected in most parts of the northern and western parts of the country during the current decade; however dry weather may prevail in south eastern parts of the country.
- ❖ 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.
- ❖ 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.

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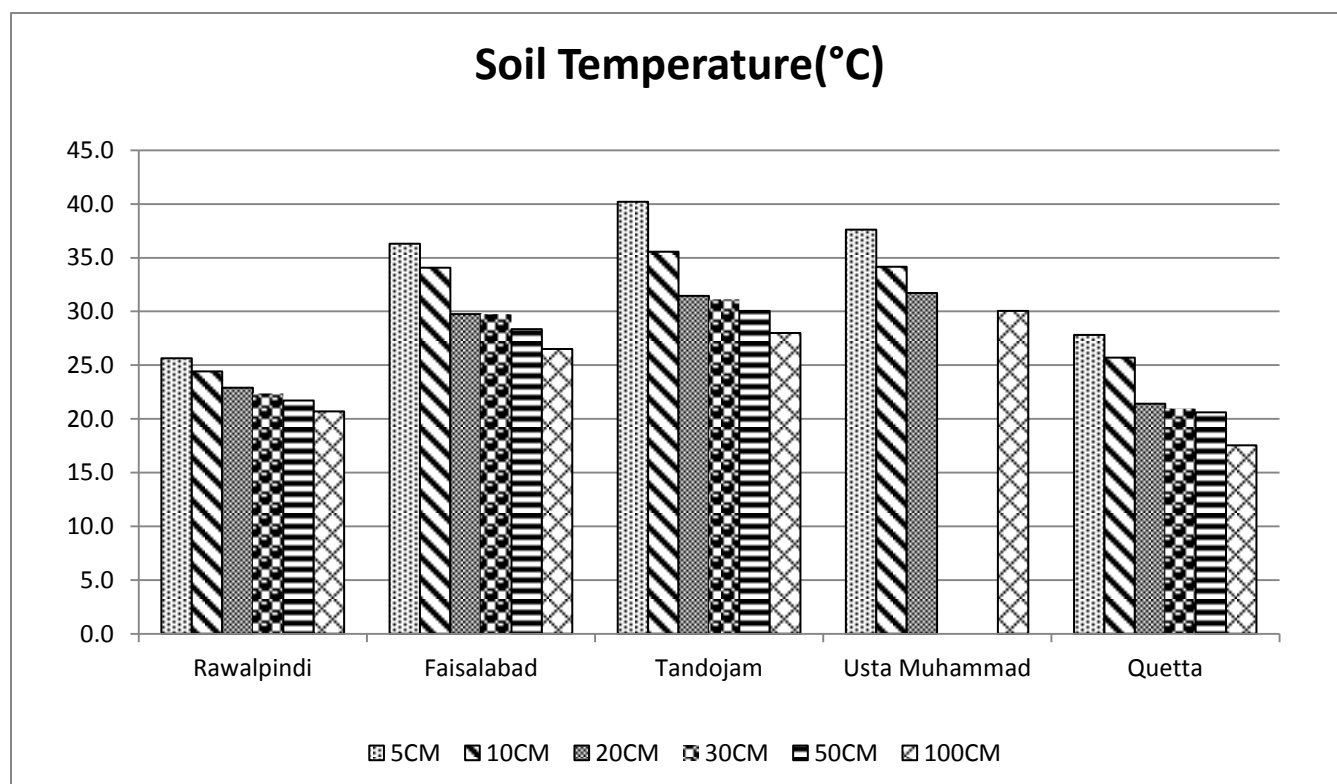
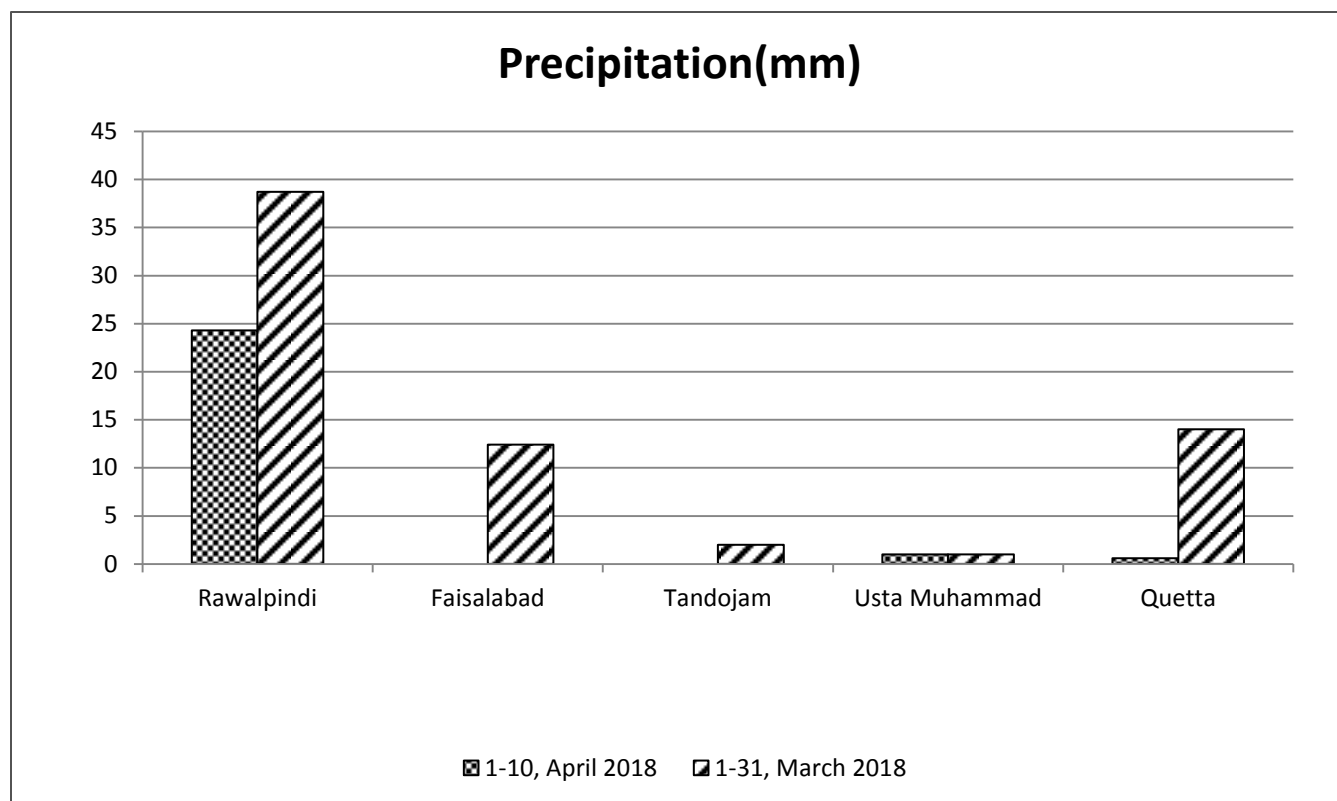
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Meteorological Conditions during 1st Decade of April, 2018

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	2.6	24.3	21.7	1.8	3.0	24.6	25.7	24.4	22.9	22.4	21.7	20.7	57	70.2	4.5	4.2
2	Faisalabad	0.4	0.0	-0.4	2.1	4.5	28.8	36.3	34.1	29.8	29.8	28.4	26.5	50	81.8	3.5	4.8
3	Jhelum	1.7	32.6	30.9	1.8	1.8	26.6	30.9	29.1	27.3	26.4	26.2	***	51	59.4	3.8	4.2
4	Lahore	0.5	0.0	-0.5	1.4	1.7	28.2	29.2	29.6	27.8	26.9	***	25.2	50	69.6	1.1	3.7
5	Sargodha	1.3	21.5	20.2	1.4	1.7	27.4	33.0	30.6	27.6	27.0	***	24.7	56	76.3	4.3	4.7
6	Multan	0.3	1.0	0.7	1.8	3.9	29.6	***	***	***	***	***	***	38	65.4	6.2	5.6
7	Khanpur	0.6	1.7	1.1	3.6	2.2	30.2	***	31.6	31.3	31.2	31.0	28.7	40	81.2	4.2	5.5
8	Tandojam	0.1	0.0	-0.1	1.6	0.7	30.0	40.2	35.6	31.5	31.1	30.1	28.0	46	93.2	7.2	6.8
9	Sakrand☆	0.1	10.0	9.9	3.9	3.2	31.6	42.1	***	***	***	***	29.2	34	96.2	7.6	7.5
11	Rohri	0.6	2.0	1.4	4.3	-0.4	31.3	***	***	***	***	***	***	34	99.7	2.3	5.1
12	D.I Khan	0.7	2.0	1.3	2.9	3.1	28.2	29.5	27.6	26.0	25.8	14.5	23.9	61	65.1	11.2	5.9
13	Peshawar	2.9	42.5	39.6	2.1	1.7	24.7	28.1	27.3	24.0	23.3	22.4	21.3	64	34.6	2.4	3.1
14	Usta .M	0.0	1.0	1.0	3.5	2.2	31.0	37.6	34.2	31.7	***	***	30.1	41	***	5.5	6.5
15	Quetta	0.2	0.6	0.4	3.0	7.1	21.5	27.8	25.7	21.4	21.0	20.6	17.6	29	75.1	6.5	5.0
16	Skardu	2.7	0.0	-2.7	5.5	1.1	14.7	***	***	***	***	***	***	35	58.0	2.5	3.2
17	Gilgit	1.4	6.3	4.9	4.8	1.9	19.0	***	***	***	***	***	***	39	70.3	3.4	3.7

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; **Dep divided by Normal multiplied by 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 (1st to 10th April, 2018)

Light to moderate rainfall reported from most of the parts of Punjab K.P, G.B & Kashmir while light rainfall was reported from Sindh and Balochistan 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, Gujranwala & Mangla. Decadal maximum & minimum both raised above normal by 2.0°C & 2.7°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 49%, 72.0hrs, 3.9km/hr and 4.7mm/day respectively.

1.2 Sindh

Light rainfall reported from agricultural plains of Sindh. Chief amount of rainfall is received at Larkana, Moen Jo Daro & Dadu. Decadal maximum & minimum both raised above normal by 3.3°C & 1.2°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 38%, 96.4hrs, 5.7km/hr and 6.5mm/day respectively.

1.3 Khyber Pakhtunkhwa (KP)

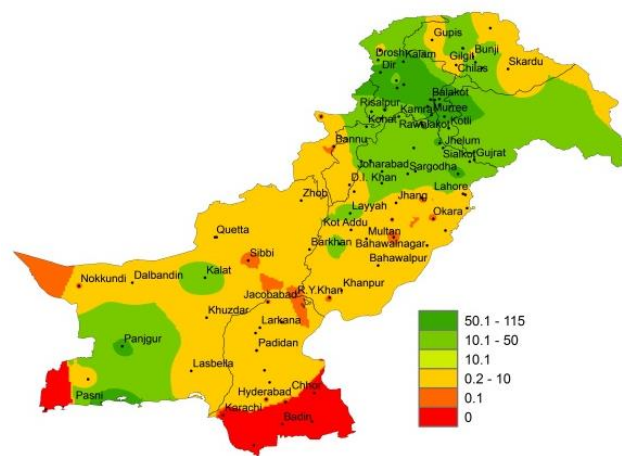
Light to moderate rainfall reported from agricultural plains of KP. Chief amount of rainfall is received at Dir, Malam Jabba & Pattan. Decadal maximum & minimum departure both raised above normal by 2.5°C & 2.4°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 63%, 49.4hrs, 6.8km/hr and 4.5mm/day respectively.

1.4 Balochistan

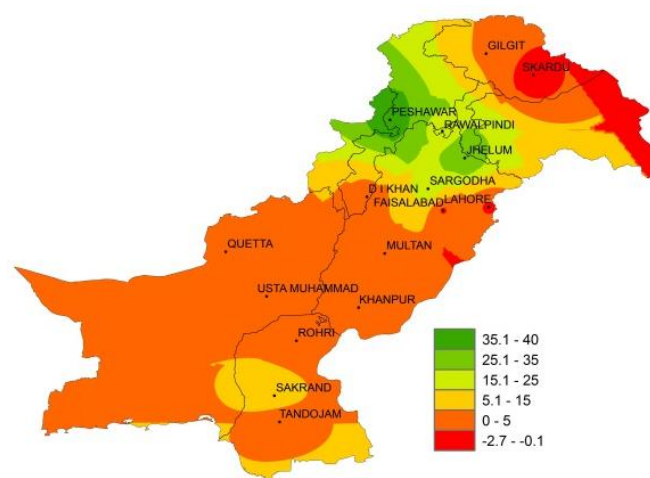
Light rainfall reported from agricultural plains of Balochistan. Chief amount of rainfall is received at Kalat, Barkhan & Zhob. Decadal maximum & minimum both raised above normal by 3.3°C & 4.7°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 35%, 75.1hrs, 6.0km/hr and 5.8mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

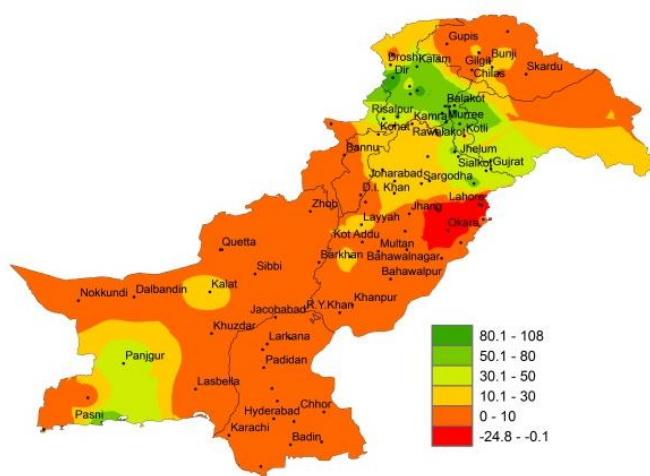
Light to moderate rainfall reported from the agricultural plains of G.B & Kashmir. Chief amount of rainfall is received at Garhi Dopatta, Muzaffarabad & Rawalakot. Decadal maximum & minimum both raised above normal by 5.2°C & 1.5°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 37%, 64.2hrs, 3.0km/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 (1st to 10th April, 2018)

2.1 RAMC, Rawalpindi (Potohar region)

Rainfall reported as 24.3mm during the decade; however weather remained cloudy for 07days during the decade. Average relative humidity recorded as 57%. Mean day temperature was 31.7°C while night temperature recorded as 17.4°C with 70.2hours bright sunshine duration. Wind speed recorded as 4.5km/hr with mean wind direction *south easterly*.

2.2 RAMC, Faisalabad (Central Punjab)

Dry weather reported during the decade; however weather remained cloudy for 07days during the decade. Average relative humidity recorded as 50%. Mean day temperature was 35.6°C while night temperature recorded as 21.9°C with 81.8hours bright sunshine duration. Wind speed recorded as 3.5km/hr with mean wind direction south easterly.

Wheat: *Very good condition, Wax maturity started.*

2.3 RAMC, Tandojam (Lower Sindh)

Dry weather reported during the decade; however weather remained cloudy for 07days during the decade. Average relative humidity recorded as 46%. Mean day temperature was 39.9°C while night temperature recorded as 20.0°C with 93.2hours bright sunshine duration. Wind speed recorded as 7.2km/h with mean wind direction *south westerly*.

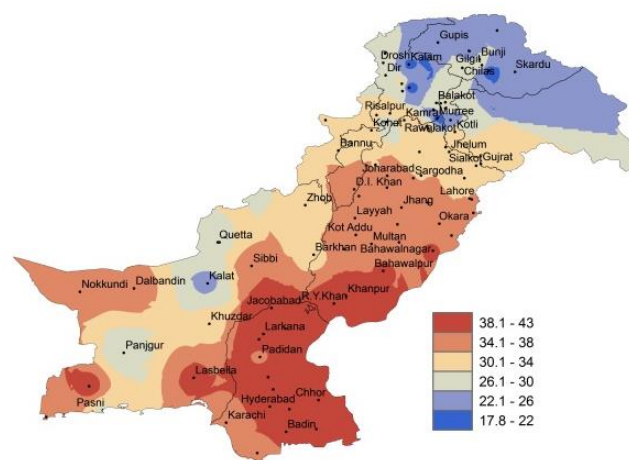
2.4 RAMC, Usta Muhammad (Eastern Balochistan)

Rainfall reported as 1.0mm during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 41%. Mean day temperature was 40.0°C while night temperature recorded as 22.0°C. Wind speed recorded as 5.5km/h with mean wind direction *south westerly*.

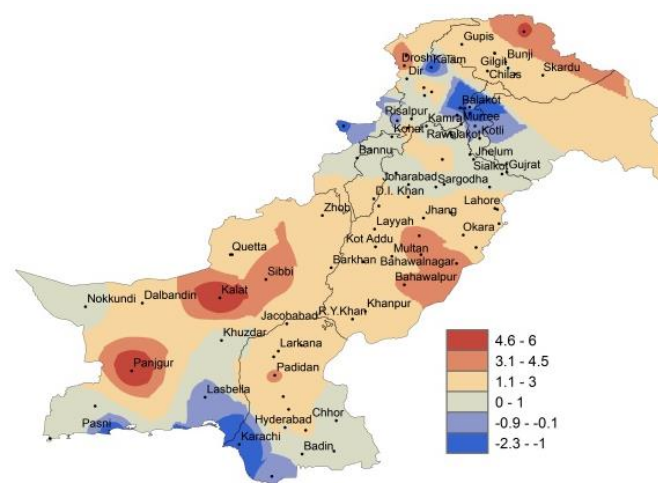
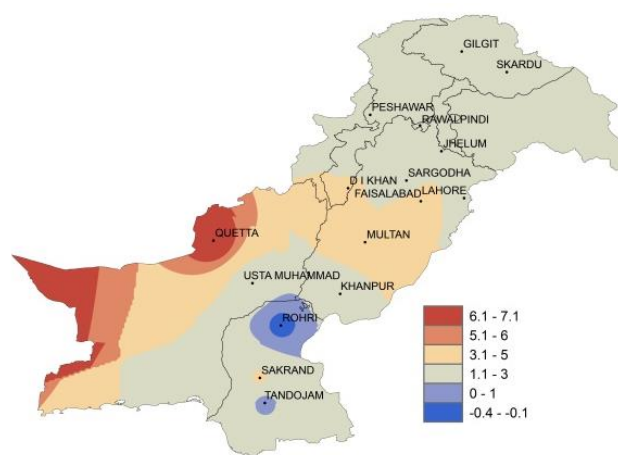
Wheat: *Harvested.*

2.5 RAMC, Quetta (Northern Balochistan)

Rainfall reported as 0.6mm during the decade; however weather remained cloudy for 10days during the decade. Average relative humidity recorded as 29%. Mean day temperature was 27.2°C while night temperature recorded as 15.7°C with 75.1hours bright sunshine duration. Wind speed recorded as 6.5km/hr with mean wind direction *southerly*.



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 (1st to 10th April, 2018)

2.6 Jhelum

Rainfall reported as 32.6mm during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 51%. Mean day temperature was 34.1°C while night temperature recorded as 19.0°C with 59.4hours bright sunshine duration. Wind speed recorded as 3.8km/hr with mean wind direction *northerly*.

2.7 Lahore

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 50%. Mean day temperature was 34.2°C while night temperature recorded as 22.2°C with 69.6hours bright sunshine duration. Wind speed recorded as 1.1km/hr with mean wind direction *north easterly*.

2.8 Sargodha

Rainfall reported as 21.5mm during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 56%. Mean day temperature was 34.8°C while night temperature recorded as 20.0°C with 76.3hours bright sunshine duration. Wind speed recorded 4.3km/hr with mean wind direction *easterly*.

2.9 Multan

Rainfall reported as 1.0mm during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 38%. Mean day temperature was 36.6°C while night temperature recorded as 22.6°C with 65.4hours bright sunshine duration. Wind speed recorded 6.2km/hr with mean wind direction *north easterly*.

2.10 Khanpur

Rainfall reported as 1.7mm during the decade; however weather remained cloudy for 06days during the decade. Average relative humidity recorded as 40%. Mean day temperature was 39.4°C while night temperature recorded as 21.0°C with 81.2hours bright sunshine duration. Wind speed recorded 4.2km/hr with mean wind direction *north easterly*.

2.11 Sakrand

Rainfall reported as 10.0mm during the decade; however weather remained cloudy for 07days during the decade. Average relative humidity recorded as 34%. Mean day temperature was 41.0°C while night temperature recorded as 22.2°C with 96.2hours bright sunshine duration. Wind speed recorded 7.6km/hr with wind direction *southerly*.

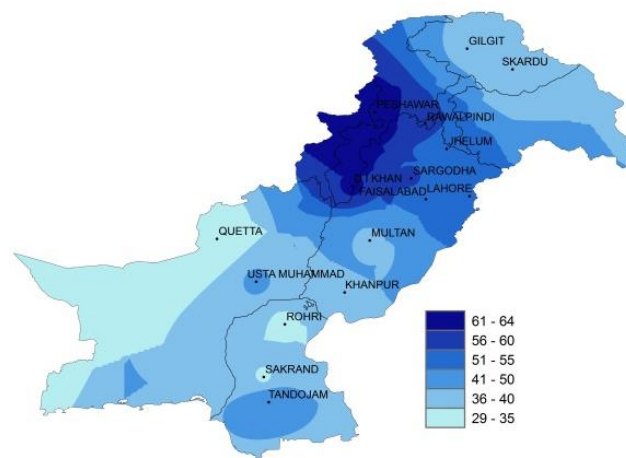


Figure.3: Relative Humidity in Percentage (%)

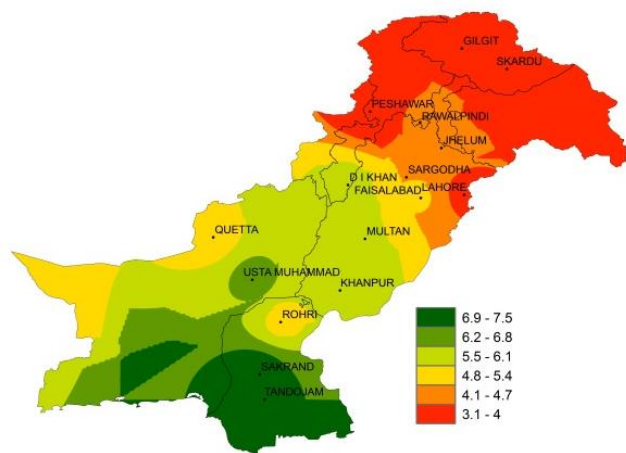


Figure.4: Reference Crop Evapotranspiration ETo (mm/day)

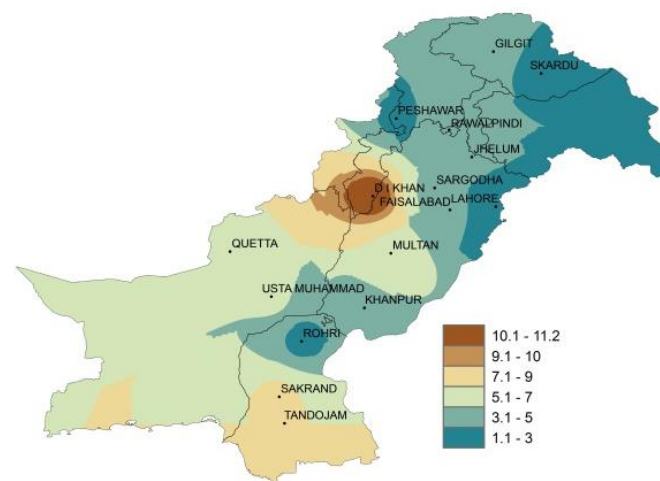


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Rainfall reported as 2.0mm during the decade; however weather remained cloudy for 05days during the decade. Average relative humidity recorded as 34%. Mean day temperature was 40.8°C while night temperature recorded as 21.7°C with 99.7hours bright sunshine duration. Wind speed recorded 2.3km/hr with wind direction *north easterly*.

2.13 D.I. Khan

Rainfall reported as 2.0mm during the decade; however weather remained cloudy for 05days during the decade. Average relative humidity recorded as 61%. Mean day temperature was 35.9°C while night temperature recorded as 20.4°C with 65.1hours bright sunshine duration. Wind speed recorded as 11.2km/hr with mean wind direction *north easterly*.

2.14 Peshawar

Rainfall reported as 42.5mm during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 64%. Mean day temperature was 31.3°C while night temperature recorded as 18.1°C with 34.6hours bright sunshine duration. Wind speed recorded as 2.4km/hr with mean wind direction *variable*.

2.15 Skardu

Dry weather reported as Trace (not measureable) during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 35%. Mean day temperature was 23.3°C while night temperature recorded as 6.0°C with 58.0 hours bright sunshine duration. Wind speed recorded as 2.5km/hr with mean wind direction *south south-easterly*.

2.16 Gilgit

Rainfall reported as 6.3mm during the decade; however weather remained cloudy for 06days during the decade. Average relative humidity recorded as 39%. Mean day temperature was 27.9°C while night temperature recorded as 10.0°C with 70.3hours bright sunshine duration. Wind speed recorded as 3.4km/hr with mean wind direction *south easterly*.

Ten Days Weather Advisory for Farmers
(11th to 20th 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

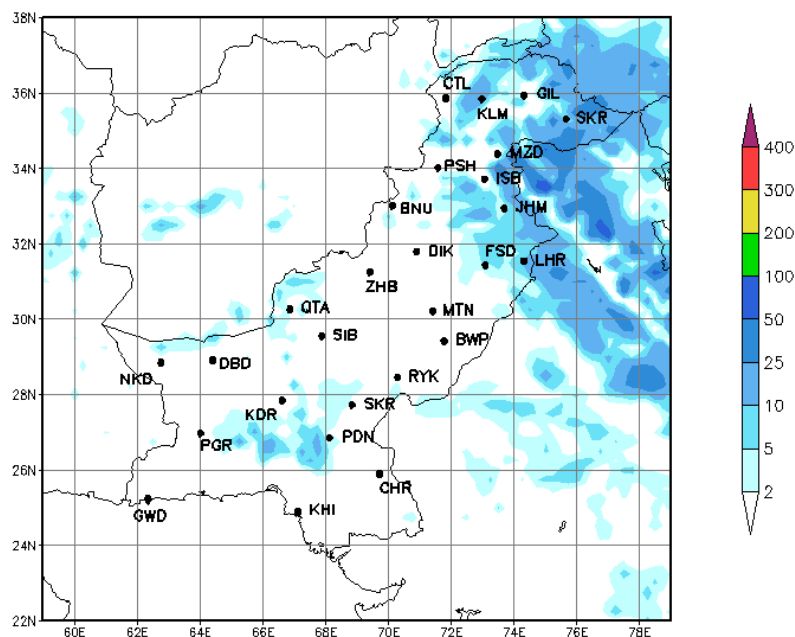
- ❖ **Punjab:** Mainly partly hot and cloudy weather is expected in most parts while light to moderate rain-thunderstorm is expected at scattered places during the decade.
- ❖ **Khyber Pakhtunkhwa:** Light to moderate rain-thunderstorm is expected at most of the places of the province during the decade.
- ❖ **Sindh:** Mainly dry weather with light to moderate rainfall at scattered places is expected in the the province.
- ❖ **Balochistan:** Light rain-thunderstorm with gusty winds is expected at few places in Quetta, Zhob and Kalat division during the decade.
- ❖ **Gilgit-Baltistan:** Heavy rain-thunderstorm with gusty winds is expected at isolated during the decade.
- ❖ **Kashmir:** Heavy rain-thunderstorm is expected at few 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.

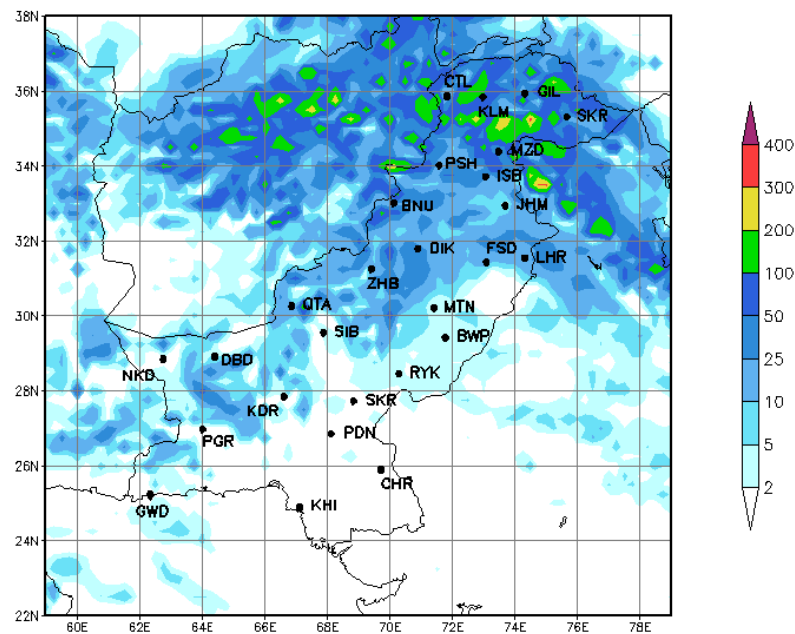
4.1 Precipitation Outlook (11th to 13th April, 2018)

The forecast for the first three days (11th to 13th) of the second 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, upper Punjab, G.B, Kashmir and light rainfall is expected at scattered places in northern Balochistan and Sindh.



4.2 Precipitation Outlook (14th to 20th April, 2018)

The outlook for the last six days (14th to 20th) of the second decade of April, 2018 shows that moderate to heavy rainfall is expected at scattered places in KP, Kashmir, GB and light to moderate rainfall is expected at rest of the parts of the country.



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 (بذریعہ نئی 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)