

Decadal Agromet Bulletin of Pakistan



Highlights....

- ❖ Light to moderate rainfall reported from few parts of K.P, G.B and southeastern Sindh. While dry weather reported from rest of the country during the last decade.
- ❖ Highest amount of rainfall recorded as 29.0mm at Dir during the last decade.
- ❖ Highest maximum temperature recorded as 43.3°C at Chhor during the last decade.
- ❖ Mainly dry weather is expected in most parts of the country during the current decade, however light rainfall is expected at isolated places in upper KP and G.B.
- ❖ Farmers are advised to schedule the irrigation plans in accordance with the expected weather, mentioned during the decade.
- ❖ 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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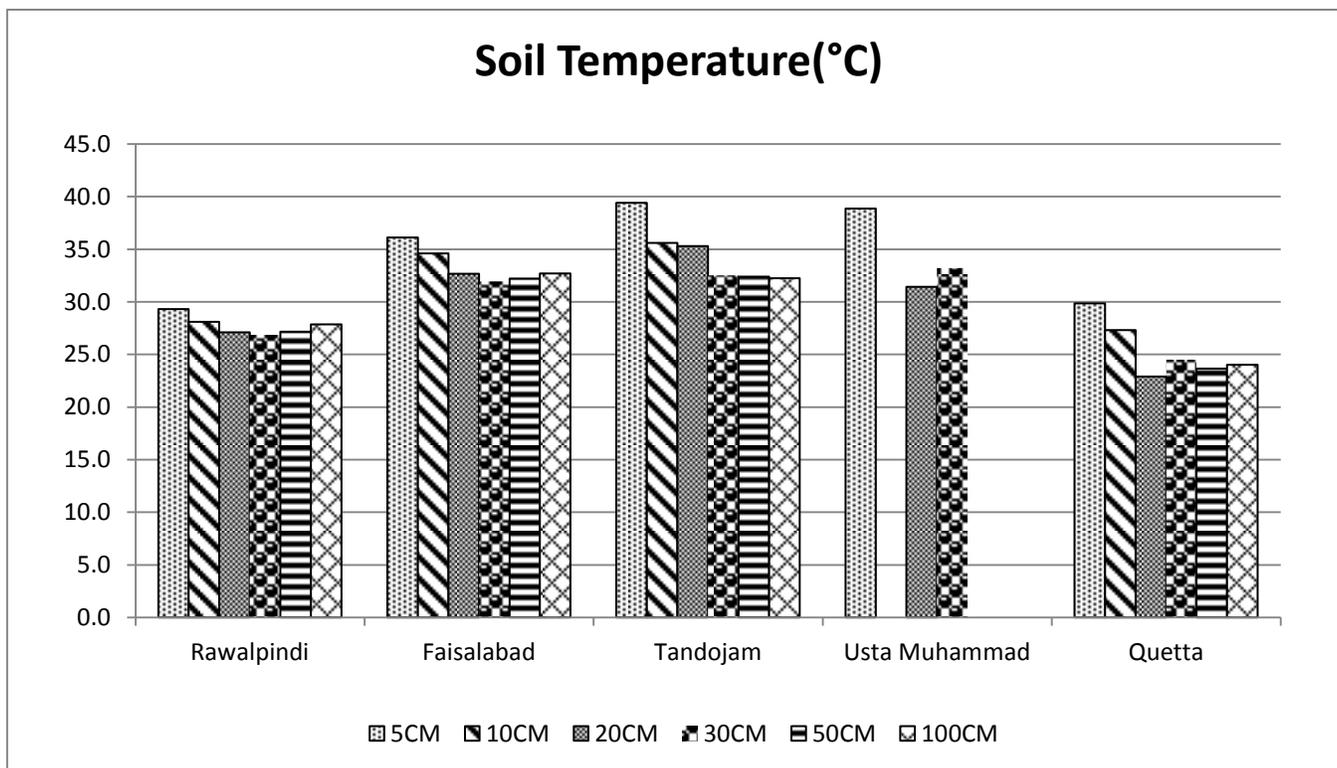
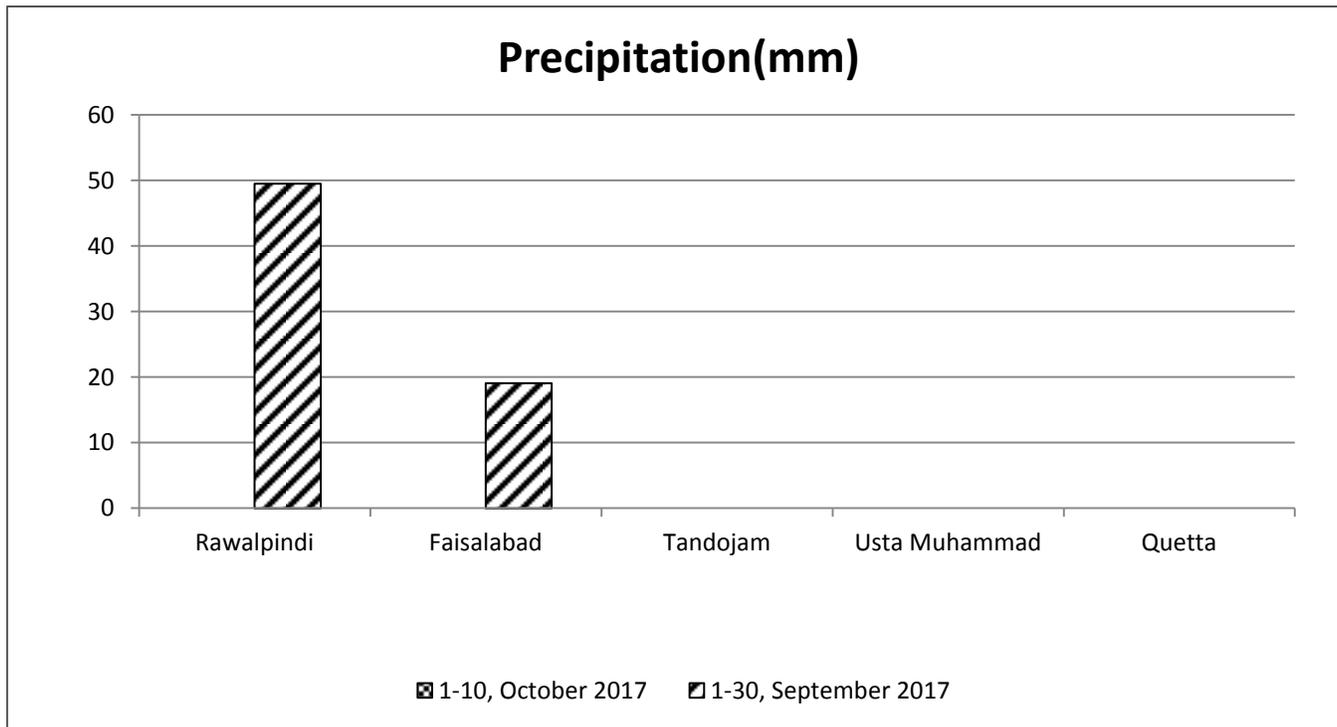
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Meteorological Conditions during 1st Decade of October, 2017

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	1.0	0.0	-1.0	2.3	1.8	27.3	29.3	28.1	27.1	26.9	27.2	27.9	55	89.7	2.3	3.6
2	Faisalabad	0.2	0.0	-0.2	2.2	0.2	28.9	36.1	34.6	32.7	32.0	32.2	32.7	48	92.7	1.5	3.6
3	Jhelum	0.4	0.0	-0.4	1.4	0.7	28.9	32.0	30.6	28.9	28.3	28.9	***	60	84.6	2.3	3.6
4	Lahore	0.1	0.0	-0.1	1.9	-0.5	29.6	33.4	32.5	30.2	29.5	***	29.8	54	77.2	0.7	3.2
5	Sargodha	0.1	0.0	-0.1	-1.2	0.8	29.6	35.0	33.1	30.6	30.2	***	29.6	54	82.5	3.0	3.9
6	Multan	0.2	0.0	-0.2	1.0	1.4	30.4	***	***	***	***	***	***	41	91.2	4.3	4.8
7	Khanpur	0.0	0.0	0.0	1.0	-0.9	29.3	***	31.7	32.4	32.6	32.9	32.8	51	93.9	2.8	4.3
8	Tandojam	0.8	0.0	-0.8	1.0	-0.5	29.4	39.4	35.6	35.3	32.5	32.4	32.3	52	96.4	1.6	4.1
9	Sakrand ☆	0.0	0.0	0.0	1.0	0.2	29.9	39.7	***	***	***	***	35.4	50	112.8	5.4	5.6
11	Rohri	0.0	0.0	0.0	1.8	-0.7	31.5	***	***	***	***	***	***	44	100.1	0.1	3.5
12	D.I Khan	0.3	0.0	-0.3	1.8	0.7	29.6	30.9	30.6	30.6	31.1	20.8	31.7	58	97.0	7.6	5.4
13	Peshawar	1.1	0.0	-1.1	1.5	-0.1	27.5	31.0	32.8	28.2	28.0	28.4	28.8	57	67.7	1.0	2.9
14	Usta .M	0.0	0.0	0.0	0.0	-0.3	29.8	38.9	***	31.4	33.2	***	***	54	***	2.6	3.9
15	Quetta	0.0	0.0	0.0	-1.1	-0.6	18.5	29.9	27.3	22.9	24.5	23.7	24.0	22	106.1	5.0	4.3
16	Skardu	0.1	0.1	0.0	-0.2	0.9	15.5	***	***	***	***	***	***	46	64.0	2.1	2.5
17	Gilgit	0.2	0.0	-0.2	0.8	2.1	19.3	***	***	***	***	***	***	48	62.0	2.6	2.7

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 October, 2017



Past Weather (1st to 10th October, 2017)

Light to moderate rainfall reported from few parts of K.P, G.B and southeastern Sindh. While dry weather reported from rest of the country during the last decade.

1.1 Punjab

Dry weather reported from agricultural plains of Punjab. Decadal maximum & minimum departure both raised above normal by 1.2°C & 0.5°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 52%, 87.4 hrs, 2.4km/hr and 3.9mm/day respectively.

1.1 Sindh

Dry weather reported from the agricultural plains of Sindh. Decadal maximum raised above normal by 1.3°C & minimum temperature dropped below normal by 0.3°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 49%, 103.1hrs, 2.4km/hr and 4.4mm/day respectively.

1.2 Khyber Pakhtunkhwa (KP)

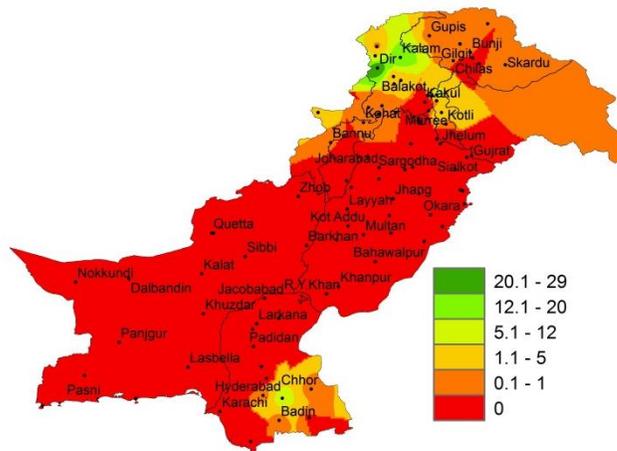
Light to moderate rainfall reported from agricultural plains of KP. Chief amount of rainfall received at Dir, Kalam & Pattan. Decadal maximum & minimum departure both raised above normal by 1.7°C & 0.3°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 58%, 82.4hrs, 4.3km/hr and 4.2mm/day respectively.

1.3 Balochistan

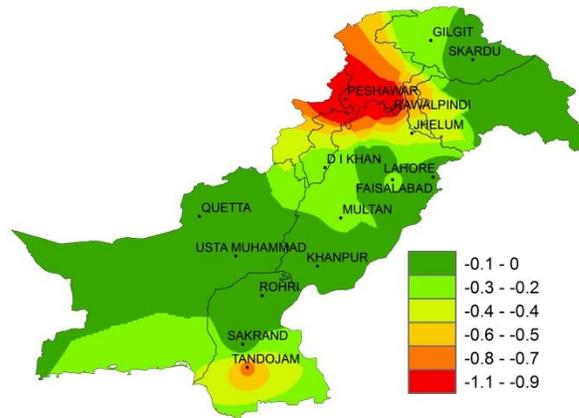
Dry weather reported from agricultural plains of Balochistan. Decadal maximum & minimum departure both dropped below normal by 0.6°C & 0.5°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 38%, 106.1 hrs, 3.8km/hr and 4.2 mm/day respectively.

1.4 Gilgit-Baltistan and Azad Jammu & Kashmir

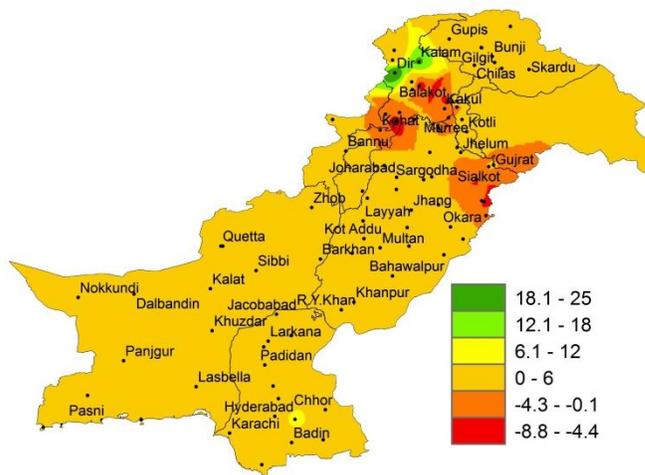
Light rainfall reported from few places of G.B & Kashmir. Chief amount of rainfall received at Rawalakot & Bagrote. Decadal maximum & minimum temperature both raised above normal by 0.3°C & 1.5°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 47%, 63.0hrs, 2.4km/hr and 2.6mm/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 October, 2017)

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

Dry weather reported during the decade; however weather remained cloudy for 02days. Average relative humidity recorded as 55%. Mean day temperature was 35.2°C while night temperature recorded as 19.3°C with 89.7hours bright sunshine duration. Wind speed recorded as 2.3km/hr with mean wind direction *variable*.

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

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 48%. Mean day temperature was 37.4°C while night temperature recorded as 20.4°C with 92.7hours bright sunshine duration. Wind speed recorded as 1.5km/hr with mean wind direction *southerly*.
Cotton: *Very good condition, maturity stage.*

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

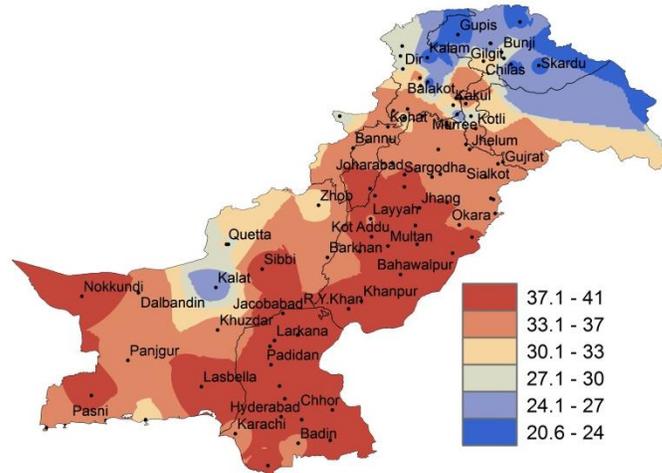
Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 52%. Mean day temperature was 38.0°C while night temperature recorded as 20.7°C with 96.4hours bright sunshine duration. Wind speed recorded as 1.6km/h with mean wind direction *south westerly*.
Cotton HH-906: *Picking completed.*

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

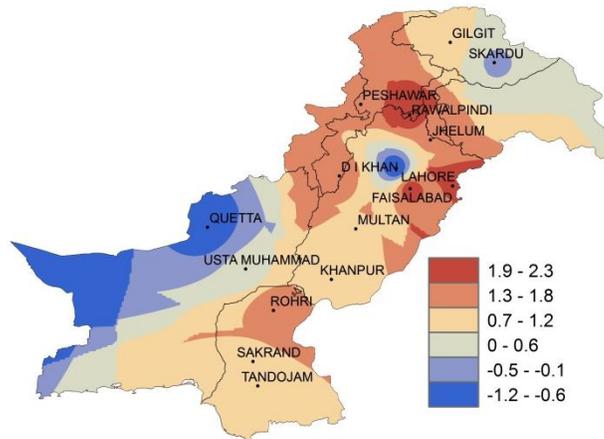
Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 54%. Mean day temperature was 36.4°C while night temperature recorded as 23.2°C. Wind speed recorded as 2.6km/h with mean wind direction *south easterly*.
Rice: *Good condition, flowering stage.*

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

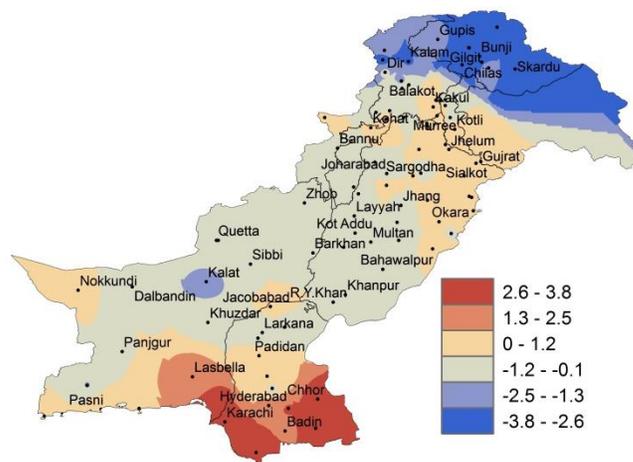
Dry weather reported during the decade; however weather remained cloudy for 01 day. Average relative humidity recorded as 22%. Mean day temperature was 27.7°C while night temperature recorded as 9.3°C with 106.1hours bright sunshine duration. Wind speed recorded as 5.0km/hr with mean wind direction *north westerly*.



I. **Actual max-temp**



II. **Departure of max-temp from Normal**



III. **Departure of max-temp from Previous Decade**

Figure.2: Maximum Temperature distribution during previous decade (°C)

2(b) Past Weather for Sub-Regional Agricultural Plains (1st to 10th October, 2017)

2.6 Jhelum

Dry weather reported during the decade; however weather remained cloudy for 02days. Average relative humidity recorded as 60%. Mean day temperature was 36.1°C while night temperature recorded as 21.6°C with 84.6hours bright sunshine duration. Wind speed recorded as 2.3km/hr with mean wind direction *south westerly*.

2.7 Lahore

Dry weather reported during the decade; however weather remained cloudy for 03days. Average relative humidity recorded as 54%. Mean day temperature was 36.0°C while night temperature recorded as 23.1°C with 77.2hours bright sunshine duration. Wind speed recorded as 0.7km/hr with mean wind direction *north westerly*.

2.8 Sargodha

Dry weather reported during the decade; however weather remained cloudy for 01day. Average relative humidity recorded as 54%. Mean day temperature was 36.3°C while night temperature recorded as 22.9°C with 82.5hours bright sunshine duration. Wind speed recorded 3.0km/hr with mean wind direction *south easterly*.

2.9 Multan

Dry weather reported during the decade; however weather remained cloudy for 01day. Average relative humidity recorded as 41%. Mean day temperature was 37.2°C while night temperature recorded as 23.5°C with 91.2hours bright sunshine duration. Wind speed recorded 4.3km/hr with mean wind direction *southerly*.

2.10 Khanpur

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 51%. Mean day temperature was 37.9°C while night temperature recorded as 20.6°C with 93.9hours bright sunshine duration. Wind speed recorded 2.8km/hr with mean wind direction *south westerly*.

2.11 Sakrand

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 50%. Mean day temperature was 38.2°C while night temperature recorded as 21.5°C with 112.8hours bright sunshine duration. Wind speed recorded 5.4km/hr with wind direction *southerly*.

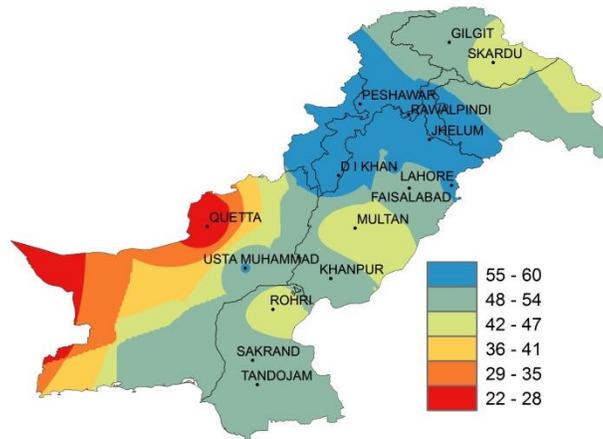


Figure.3: Relative Humidity in Percentage (%)

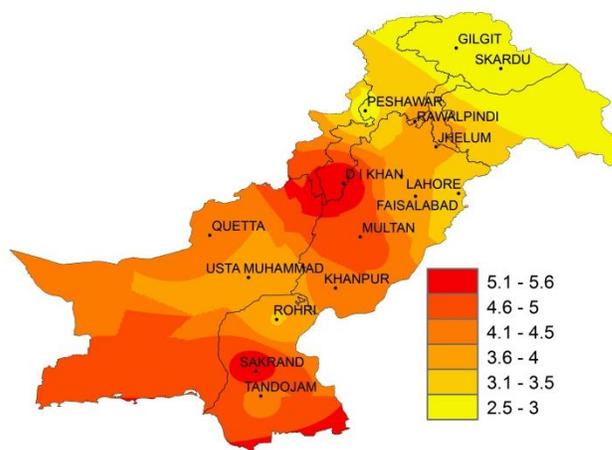


Figure.4: Reference Crop Evapotranspiration ETo(mm/day)

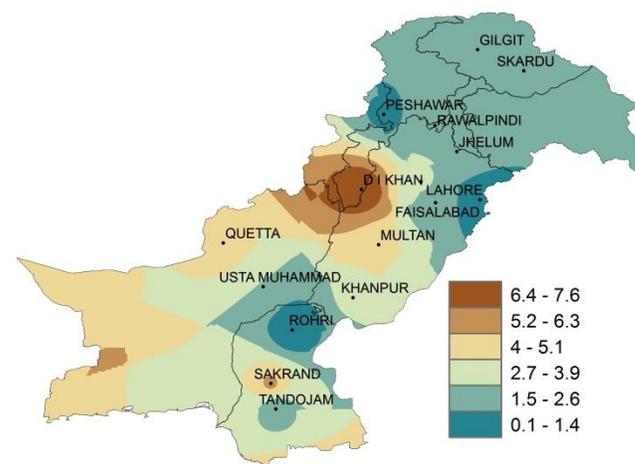


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 44%. Mean day temperature was 39.4°C while night temperature recorded as 23.5°C with 100.1hours bright sunshine duration. Wind speed recorded 0.1km/hr with wind direction *northerly*.

2.13 D.I. Khan

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 58%. Mean day temperature was 37.6°C while night temperature recorded as 21.5°C with 97.0hours bright unshine duration. Wind speed recorded as 7.6km/hr with mean wind direction *north easterly*.

2.14 Peshawar

Dry weather reported during the decade; however weather remained cloudy for 05days. Average relative humidity recorded as 57%. Mean day temperature was 34.9°C while night temperature recorded as 20.0°C with 67.7hours bright sunshine duration. Wind speed recorded as 1.0km/hr with mean wind direction *north easterly*.

2.15 Skardu

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 02days. Average relative humidity recorded as 46%. Mean day temperature was 23.8°C while night temperature recorded as 7.1°C with 64.0hours bright sunshine duration. Wind speed recorded as 2.1km/hr with mean wind direction *east north-easterly*.

2.16 Gilgit

Dry weather reported during the decade; however weather remained cloudy for 04days. Average relative humidity recorded as 48%. Mean day temperature was 28.6°C while night temperature recorded as 10.1°C with 62.0hours bright sunshine duration. Wind speed recorded as 2.6km/hr with mean wind direction *westerly*.

**Ten Days Weather Advisory for Farmers
(11th to 20th October, 2017)****3.1 Temperature Forecast**

Day temperatures are expected slightly normal in most parts of the country, however night temperature are expected below normal in most of the agricultural 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

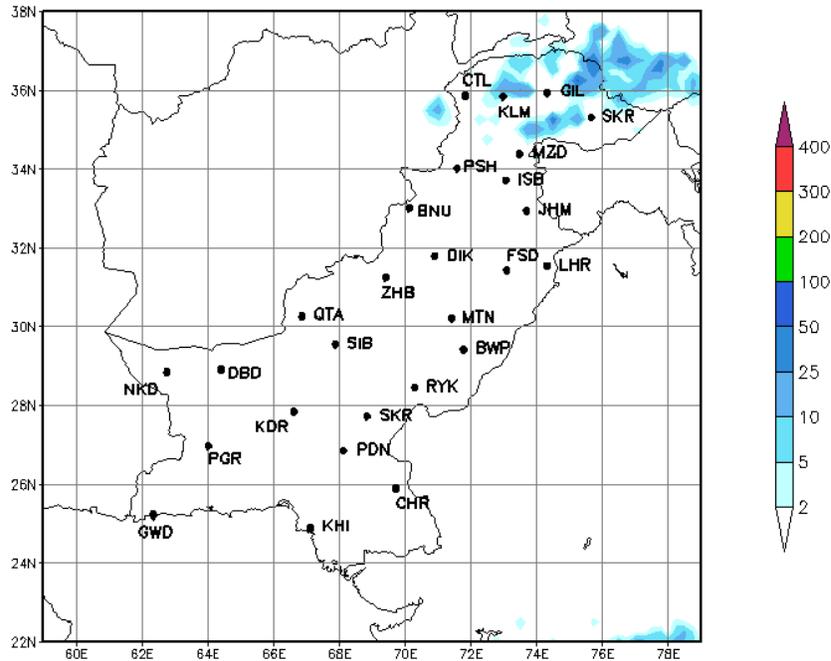
- ❖ **Punjab:** Dry weather is expected in the province during the current decade.
- ❖ **Khyber Pakhtunkhwa:** Light rainfall is expected at scattered places in upper parts of the province during the decade.
- ❖ **Sindh:** Dry weather is expected in the province during the current decade.
- ❖ **Balochistan:** Dry weather is expected in the province during the current decade.
- ❖ **Gilgit Baltistan:** Light rainfall is expected at scattered places of G.B during the current decade.
- ❖ **Kashmir:** Light weather is expected in Kashmir during the current decade.

3.4 Advisory for Farmers

- ❖ Farmers are advised to schedule the irrigation plans in accordance with the expected weather, mentioned during the decade.
- ❖ 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.

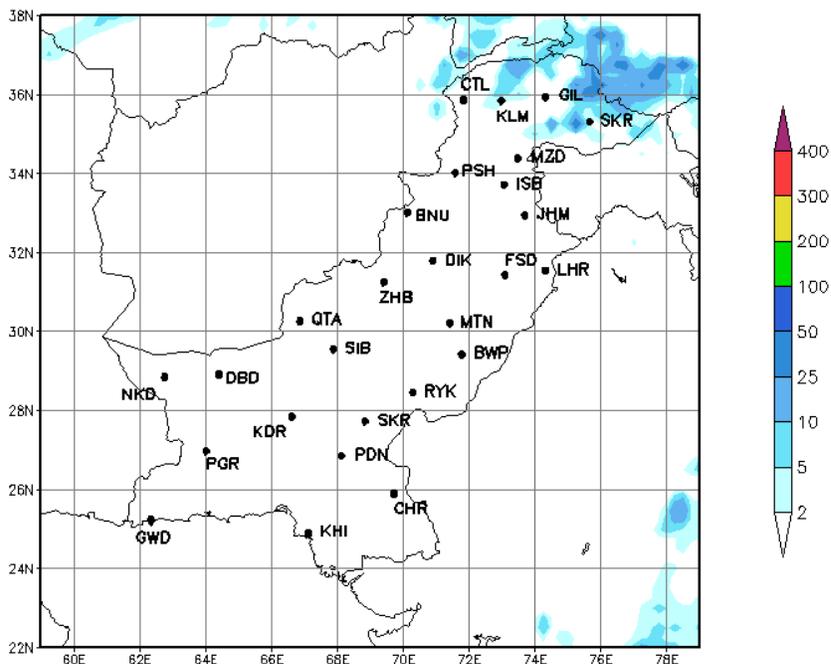
4.1 Precipitation Outlook (11th to 13th October, 2017)

The forecast for the first three days (11th to 13th) of the second decade of October 2017 shows that mainly dry weather may prevail in most parts of the country however light rainfall is expected at scattered places of Upper KP and G.B.



4.2 Precipitation Outlook (14th to 20th October, 2017)

The outlook for the last seven days (14th to 20th) of the second decade of October 2017 shows that light rainfall is expected at particular places of the upper KP and G.B. However, dry weather may prevail in rest 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)