

Decadal Agromet Bulletin of Pakistan



Highlights....

- ❖ Light to moderate rainfall reported from few parts of Punjab, K.P, G.B while dry weather was reported from rest of the country during the last decade.
- ❖ Highest amount of rainfall recorded as 66.0 mm at Pattan during the last decade.
- ❖ Highest maximum temperature recorded as 41.0°C at Mithi 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 scattered places in upper parts of K.P, G.B, central Balochistan, Kashmir, FATA during the current decade.
- ❖ Use proper precautions during picking of cotton because the cost of good and clean quality cotton is high than that of the filthy one.
- ❖ 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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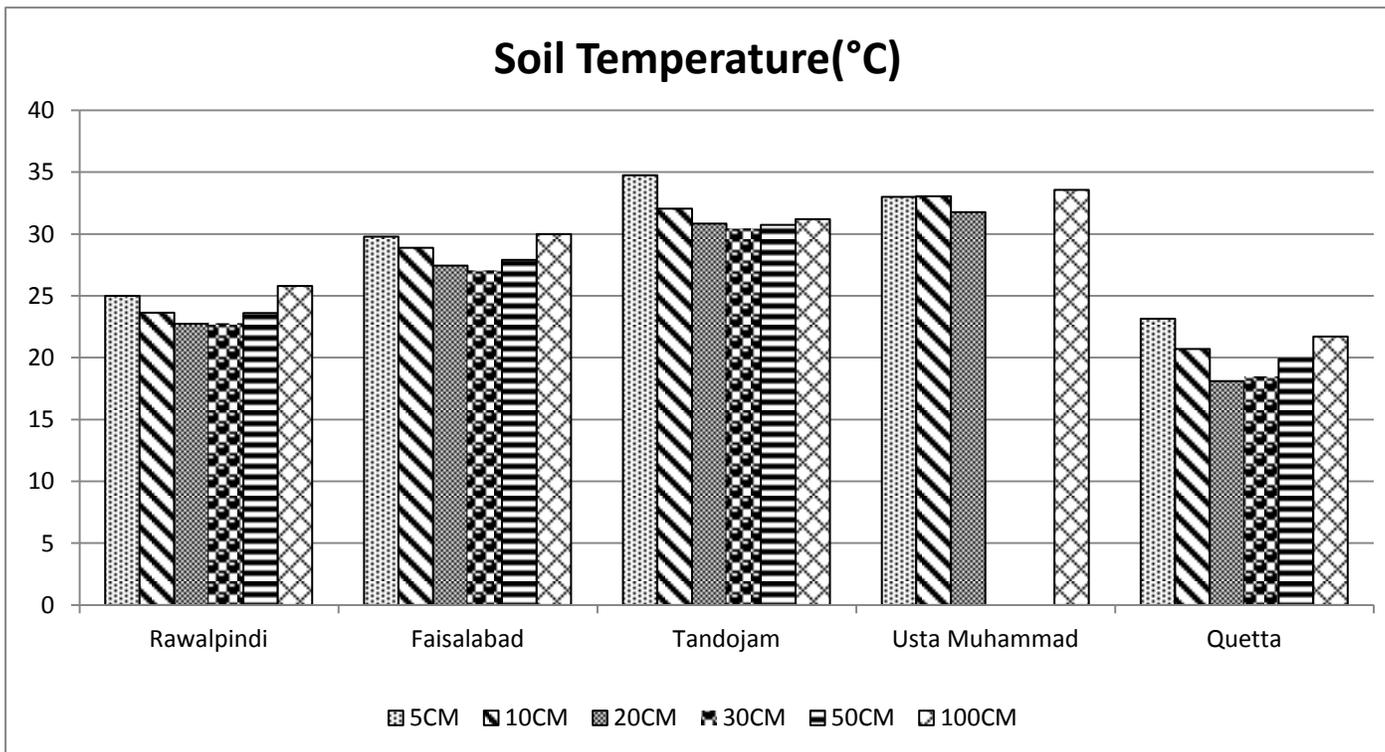
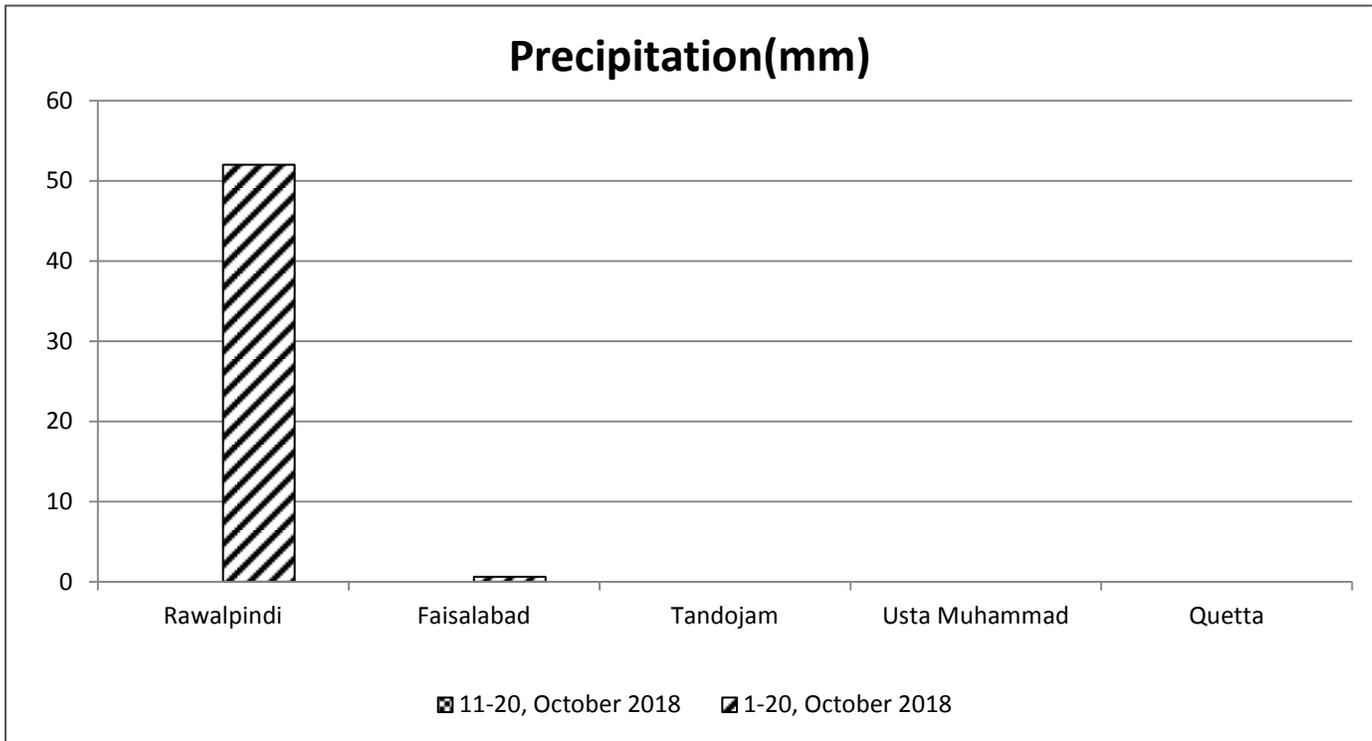
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Meteorological Conditions during 2nd Decade of October, 2018

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	1.9	0.0	-1.9	-1.3	-2.3	21.5	25.0	23.7	22.8	22.8	23.6	25.8	56	83.2	2.0	2.7
2	Faisalabad	0.1	0.0	-0.1	-0.6	0.4	25.2	29.8	28.9	27.5	27.1	27.9	30.0	53	78.2	1.4	2.8
3	Jhelum	1.1	0.0	-1.1	-0.4	-0.6	24.5	26.6	25.6	24.6	26.0	25.7	***	50	86.7	1.1	2.7
4	Lahore	0.6	0.0	-0.6	-0.4	-1.6	25.6	27.9	27.5	26.6	26.2	***	26.9	56	86.6	1.0	2.9
5	Sargodha	0.4	0.0	-0.4	-1.3	-0.5	25.3	31.2	29.3	27.5	27.5	***	28.7	53	77.5	1.1	2.7
6	Multan	0.0	0.0	0.0	-1.8	0.5	26.1	***	***	***	***	***	***	45	73.4	1.6	2.9
7	Khanpur	0.0	0.0	0.0	-0.8	-1.9	25.9	***	29.5	29.9	30.5	31.7	32.1	50	53.7	2.4	3.1
8	Tandojam	0.0	0.0	0.0	-0.7	-2.1	26.8	34.8	32.1	30.9	30.5	30.8	31.2	48	87.6	2.6	3.9
9	Sakrand	0.0	0.0	0.0	-0.8	0.3	27.4	33.6	***	***	***	***	33.5	0	94.0	2.0	3.8
11	Rohri ☆	0.0	0.0	0.0	-0.8	-3.2	27.1	***	***	***	***	***	***	37	109.0	1.8	3.6
12	D.I Khan	0.2	0.0	-0.2	-0.8	-0.1	25.5	29.0	29.0	29.1	29.7	19.9	***	50	82.6	7.4	4.6
13	Peshawar	0.5	8.0	7.5	-2.0	-4.0	21.0	24.6	24.3	23.6	24.0	25.3	25.5	57	63.4	1.0	2.2
14	Usta. M	0.0	0.0	0.0	-3.8	-1.6	25.6	33.0	33.1	31.8	***	***	33.6	59	***	0.8	2.6
15	Quetta	0.0	0.0	0.0	-6.3	-0.7	14.3	23.2	20.7	18.1	18.5	19.9	21.7	24	107.8	6.2	3.8
16	Skardu	0.2	0.0	-0.2	-4.2	-0.7	9.5	***	***	***	***	***	***	56	56.3	1.8	1.8
17	Gilgit	0.1	10.5	10.4	-2.5	-0.9	13.0	***	***	***	***	***	***	52	53.6	2.4	2.0

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, 2018



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

Light to moderate rainfall reported from few parts of Punjab, K.P, G.B while dry weather was reported from rest of the country during the last decade.

1.1 Punjab

Light to moderate rainfall reported from few agricultural plains of Punjab. Chief amount of rainfall received at Noorpurthal, Kamra & Sialkot. Decadal maximum & minimum departure both dropped below normal by 0.9°C & 0.9°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 52%, 77hrs, 1.5km/hr and 2.8 mm/day respectively.

1.2 Sindh

Dry weather reported from most of the agricultural plains of Sindh except Trace (Not measurable) from Hyderabad. Decadal maximum & minimum departure both dropped below normal by 0.8°C & 1.7°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 44%, 96.9hrs, 2.1km/hr and 3.8mm/day respectively.

1.3 Khyber Pakhtunkhwa (KP)

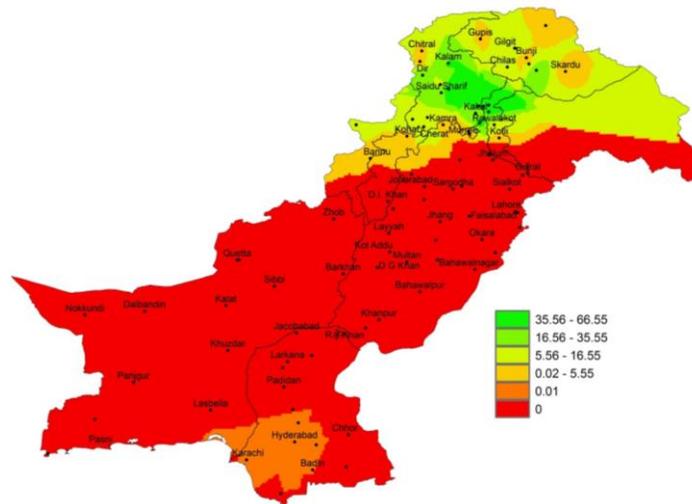
Light to moderate rainfall reported from few agricultural plains of KP. Chief amount of rainfall received at Pattan, Malamjabba & Balakot. Decadal maximum & minimum departure both dropped below normal by 1.4°C & 2.1 °C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 54%, 73.0hrs, 4.2km/hr and 3.4mm/day respectively.

1.4 Balochistan

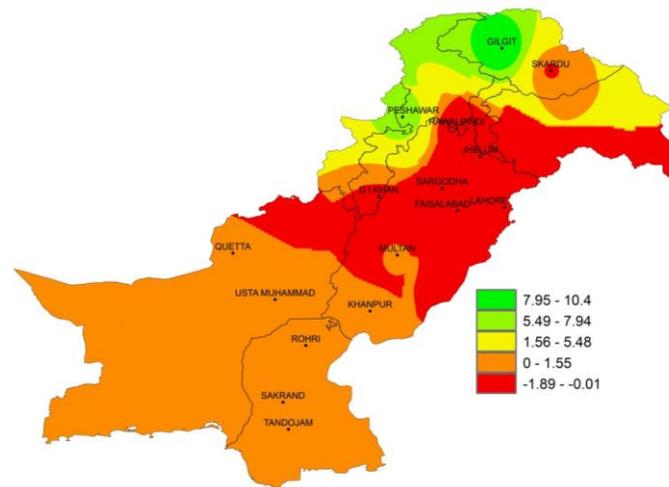
Dry weather reported from the agricultural plains of Balochistan. Decadal maximum & minimum departure both dropped below normal by 5.1°C & 1.2°C respectively, in province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 42%, 107.8hrs, 3.5km/hr and 3.2mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

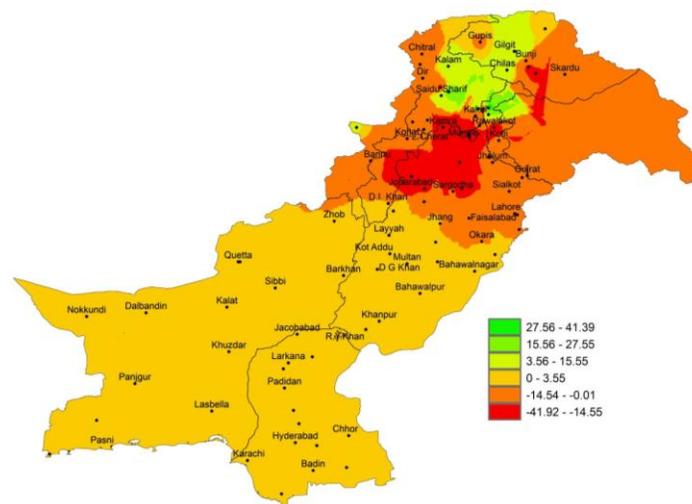
Light rainfall reported from few plains of G.B & Kashmir respectively. Chief amount of rainfall received at Astore, Muzaffarabad & Sakrdu. Decadal maximum & minimum departure both dropped below normal by 3.4°C & 0.8°C respectively in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 54%, 55hrs, 2.1km/hr and 2.1mm/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 October, 2018)

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

Dry weather reported during the decade; however weather remained cloudy for 02 day. Average relative humidity recorded as 56%. Mean day temperature was 29.3°C while night temperature recorded as 13.6°C with 83.2hours bright sunshine duration. Wind speed recorded as 2.0km/hr with mean wind direction *Westerly*.

Maize: good condition, Flowering stage.

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

Dry weather reported during the decade; however weather remained cloudy for 03 day. Average relative humidity recorded as 53%. Mean day temperature was 32.5°C while night temperature recorded as 17.8°C with 78.2hours bright sunshine duration. Wind speed recorded as 1.4km/hr with mean wind direction *southeasterly*.

Cotton: Very good condition, Full maturity completed.

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

Dry weather reported during the decade; however weather remained cloudy for 02 day. Average relative humidity recorded as 48%. Mean day temperature was 35.7°C while night temperature recorded as 17.8°C with 87.6hours bright sunshine duration. Wind speed recorded as 2.6km/h with mean wind direction *Northerly*.

There is water in the field.

Cotton: CIM-602, Harvested on 17th October 2018

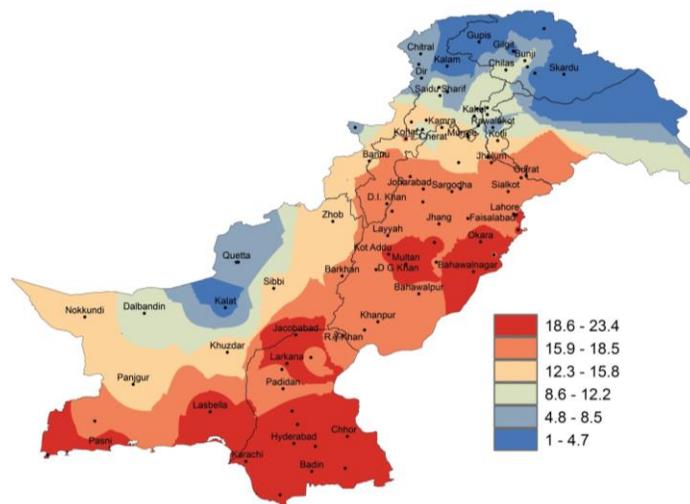
2.4 **RAMC, Usta Muhammad (Eastern Balochistan)**

Dry weather reported during the decade; however weather remained cloudy for 01 day. Average relative humidity recorded as 59%. Mean day temperature was 30.9°C while night temperature recorded as 20.2°C. Wind speed recorded as 0.8km/h with mean wind direction *south easterly*.

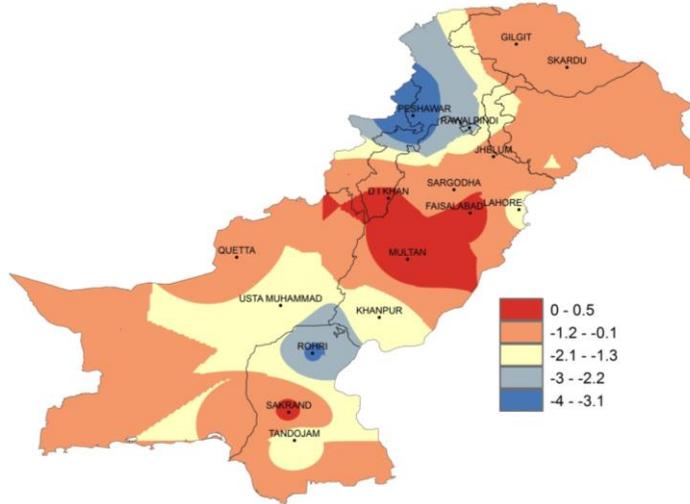
Rice: Good condition, Maturity stage.

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

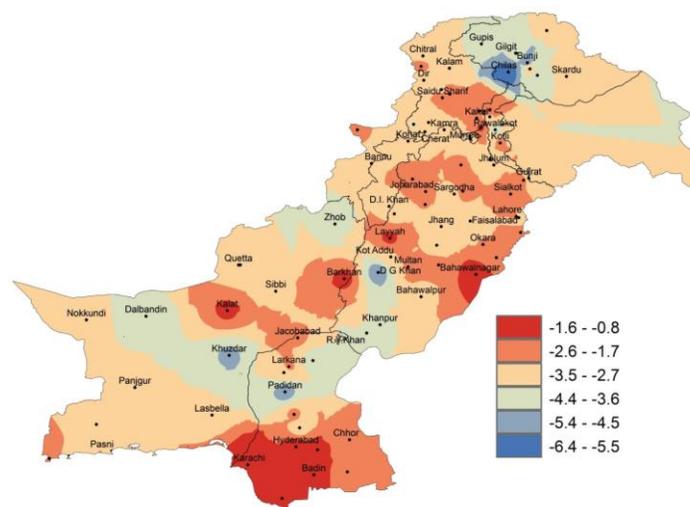
Dry weather reported during the decade; however weather remained cloudy for 03 day. Average relative humidity recorded as 24%. Mean day temperature was 21.0°C while night temperature recorded as 7.6°C with 107.8hours bright sunshine duration. Wind speed recorded as 6.2km/hr with mean wind direction *north 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 (11th to 20th October, 2018)

2.6 Jhelum

Dry weather reported during the decade; however weather remained cloudy for 06day. Average relative humidity recorded as 50%. Mean day temperature was 32.2°C while night temperature recorded as 16.7°C with 86.7hours bright sunshine duration. Wind speed recorded as 1.1km/hr with mean wind direction *Variable*.

2.7 Lahore

Dry weather reported during the decade; however weather remained cloudy for 03days. Average relative humidity recorded as 56%. Mean day temperature was 31.6°C while night temperature recorded as 19.5°C with 86.6hours bright sunshine duration. Wind speed recorded as 1.0km/hr with mean wind direction *northerly*.

2.8 Sargodha

Dry weather reported during the decade; however weather remained cloudy for 02days. Average relative humidity recorded as 53%. Mean day temperature was 31.9°C while night temperature recorded as 18.6°C with 77.5hours bright sunshine duration. Wind speed recorded 1.1km/hr with mean wind direction *North easterly*.

2.9 Multan

Dry weather reported during the decade; however weather remained cloudy for 05days. Average relative humidity recorded as 45%. Mean day temperature was 32.5°C while night temperature recorded as 19.7°C with 73.4 hours bright sunshine duration. Wind speed recorded 1.6km/hr with mean wind direction *North easterly*.

2.10 Khanpur

Dry weather reported during the decade; however weather remained cloudy for 02days. Average relative humidity recorded as 50%. Mean day temperature was 34.4°C while night temperature recorded as 17.4°C with 53.7hours bright sunshine duration. Wind speed recorded 2.4km/hr with wind direction *North easterly*.

2.11 Sakrand

Dry weather reported during the decade; however weather remained cloudy for 02days. Average relative humidity recorded as 46%. Mean day temperature was 35.2°C while night temperature recorded as 18.0°C with 94.0hours bright sunshine duration. Wind speed recorded 2.0km/hr with wind direction *northerly*.

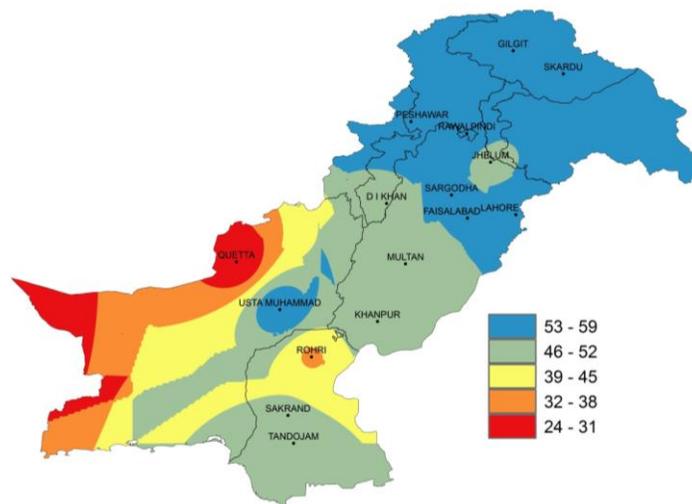


Figure.3: Relative Humidity in Percentage (%)

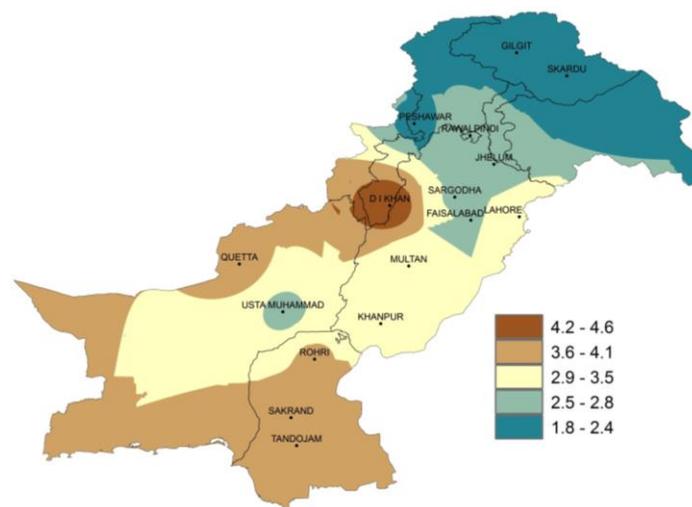


Figure.4: Reference Crop Evapotranspiration ETo (mm/day)

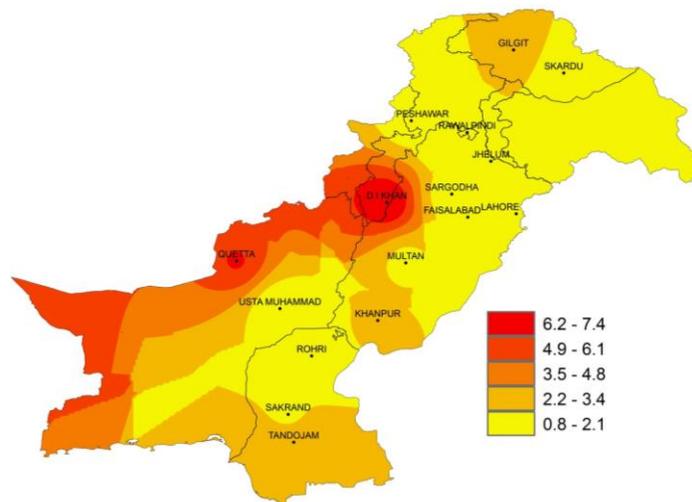


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Dry weather reported during the decade; however weather remained cloudy for 02days. Average relative humidity recorded as 37%. Mean day temperature was 35.3°C while night temperature recorded as 18.9°C with 109.0hours bright sunshine duration. Wind speed recorded 1.8km/hr with wind direction *North easterly*.

2.13 D.I. Khan

Dry weather reported during the decade; however weather remained cloudy for 01days. Average relative humidity recorded as 50%. Mean day temperature was 33.0°C while night temperature recorded as 18.0°C with 82.6hours bright sunshine duration. Wind speed recorded as 7.4km/hr with mean wind direction *North easterly*.

2.14 Peshawar

Rainfall reported as 8.0mm during the decade; however remained cloudy for 08days. Average relative humidity recorded as 57%. Mean day temperature was 28.7°C while night temperature recorded as 13.2°C with 63.4hours bright sunshine duration. Wind speed recorded as 1.0km/hr with mean wind direction *North westerly*.

2.15 Skardu

Dry weather reported during the decade; however weather remained cloudy for 06days. Average relative humidity recorded as 56%. Mean day temperature was 16.3°C while night temperature recorded as 2.6°C with 56.3hours bright sunshine duration. Wind speed recorded as 1.8km/hr with mean wind direction *South easterly*.

2.16 Gilgit

Rainfall reported as 10.5mm during the decade; however remained cloudy for 10 days. Average relative humidity recorded as 52%. Mean day temperature was 21.0°C while night temperature recorded as 4.9°C with 53.6hours bright sunshine duration. Wind speed recorded as 2.4km/hr with mean wind direction *Variable*.

Ten Days Weather Advisory for Farmers
(22nd to 31st October, 2018)

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

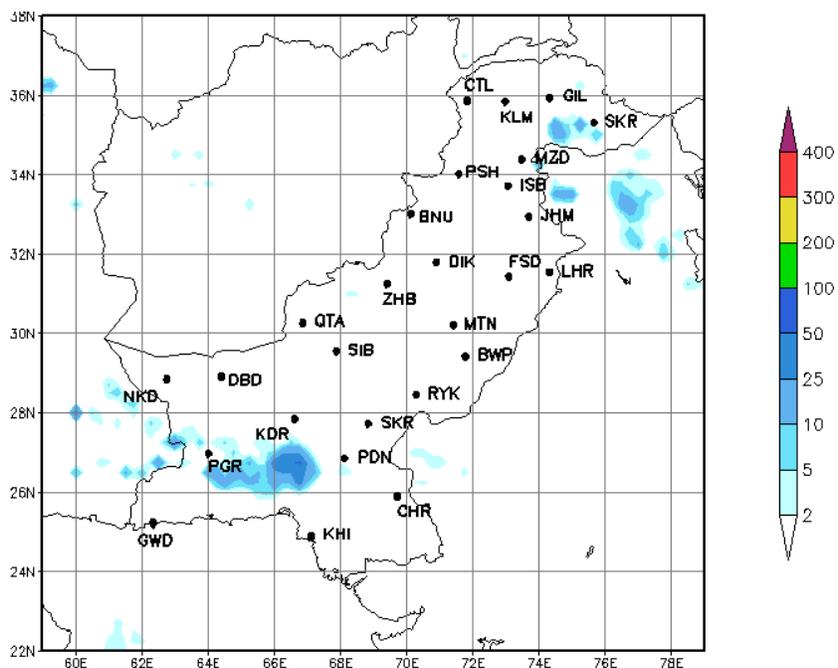
- ❖ **Punjab:** Dry weather is expected in the province during the current decade.
- ❖ **Khyber Pakhtunkhwa:** Light rainfall is expected at scattered places in upper parts of the province during the 2nd half of the current decade.
- ❖ **Sindh:** Dry weather is expected in the province during the current decade.
- ❖ **Balochistan:** Light rainfall is expected at scattered places in the province during the 1st half of the current decade.
- ❖ **Gilgit-Baltistan:** Light rainfall is expected at scattered places of G.B during the 2nd half of the current decade.
- ❖ **Kashmir:** Light rainfall is expected at scattered places in Kashmir during the current decade.

3.4 Advisory for Farmers

- ❖ Use proper precautions during picking of cotton because the cost of good and clean quality cotton is high than that of the filthy one.
- ❖ 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.

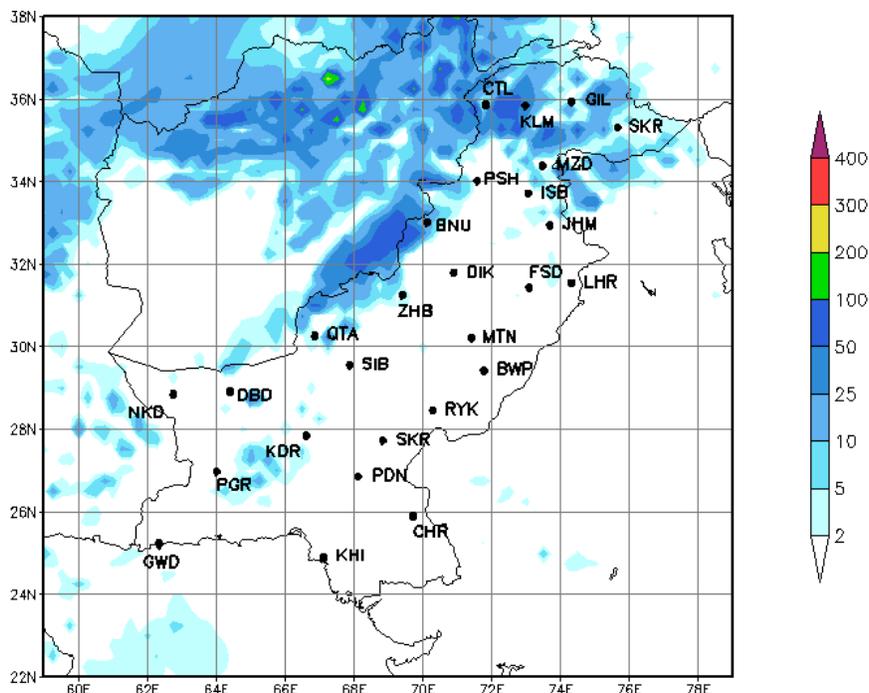
4.1 Precipitation Outlook (22nd to 24th October, 2018)

The forecast for the next three days (22nd to 24th) of the third decade of October 2018 shows that mainly dry weather may prevail in most parts of the country, however light to moderate rainfall is expected at isolated places of Kashmir, GB, South eastern Balochistan and adjoining areas of Sindh.



4.2 Precipitation Outlook (25th to 31st October, 2018)

The outlook for the last days (25th to 31st) of the third decade of October 2018 shows that light to moderate rainfall is expected at particular places of the upper KP, FATA, Kashmir and G.B. However, light rainfall is expected at central Balochistan. 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 (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)