

Decadal Agromet Bulletin of Pakistan



Highlights....

- ❖ Light to moderate rainfall reported from few parts of the country particularly K.P during the last decade.
- ❖ Highest amount of rainfall recorded as 51.0 mm at Dir and Kalam during the last decade.
- ❖ Lowest minimum temperature recorded as -4.0°C at Skardu during the last decade.
- ❖ Mainly dry weather is expected in most parts of the country during the current decade, however light to moderate rainfall with snowfall over mountains is expected at scattered places in upper Punjab, K.P, G.B and Kashmir 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.
- ❖ Harvesting of Peanut may be completed and the fields may be well ploughed afterwards.
- ❖ Farmers are advised to schedule the irrigation plans in context of upcoming Rabi crops.
- ❖ 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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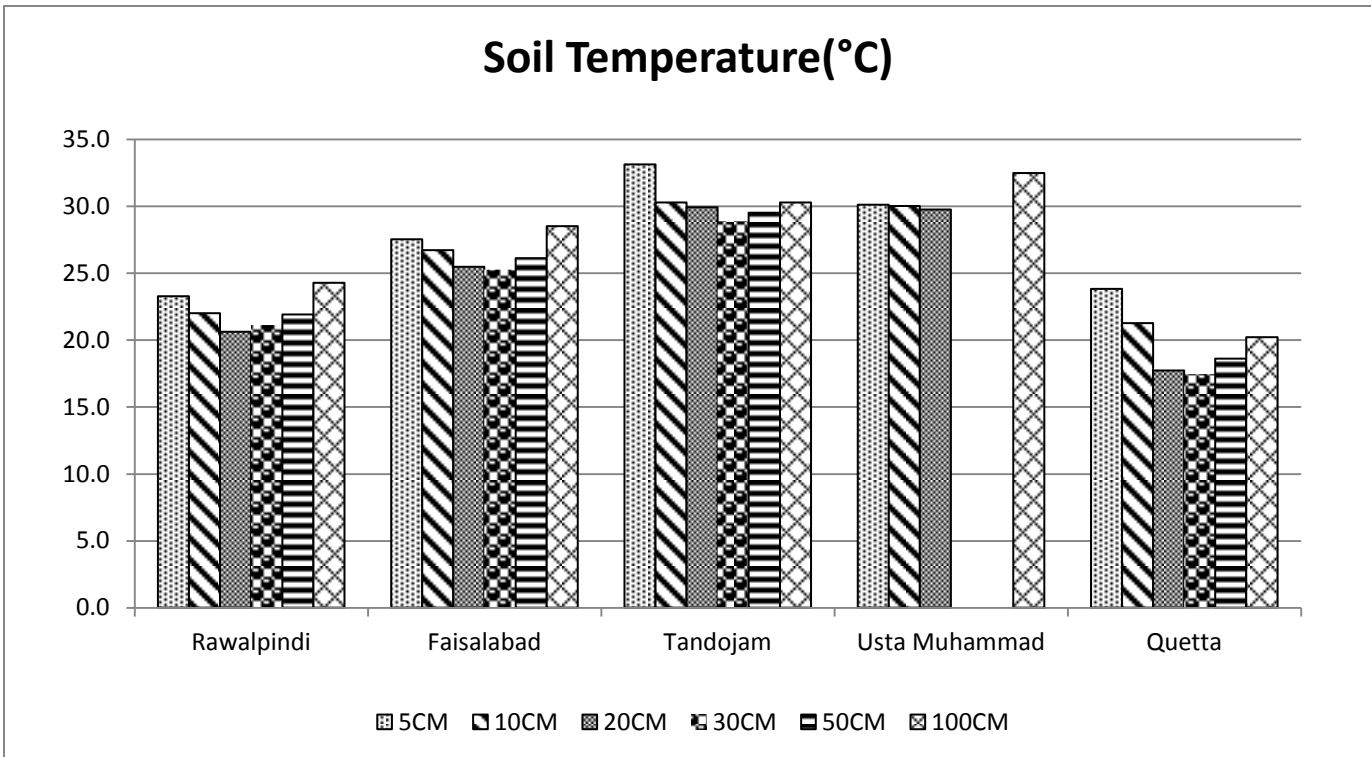
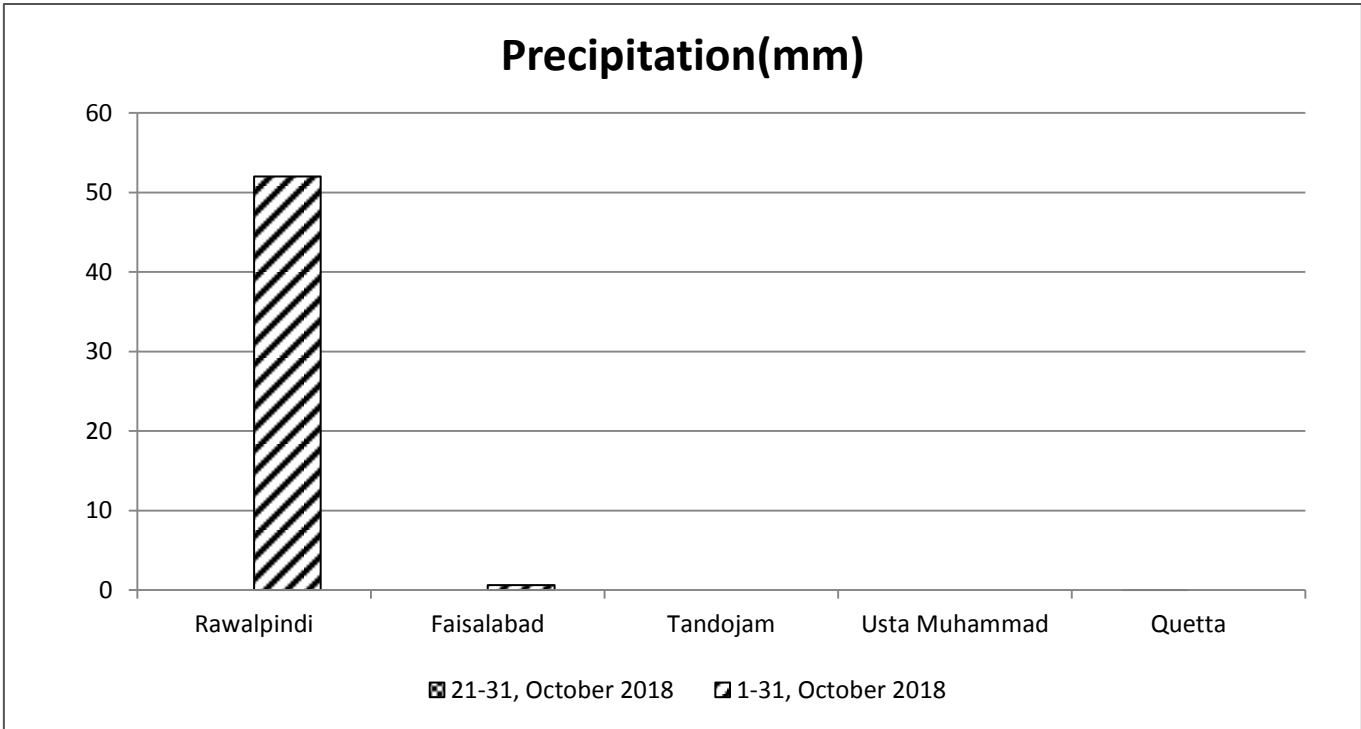
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Meteorological Conditions during 3rd Decade of October, 2018

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	0.3	0.0	-0.3	0.0	-1.2	20.2	23.3	22.0	20.6	21.1	21.9	24.3	57	95.5	1.3	2.4
2	Faisalabad	0.0	0.0	0.0	0.3	3.2	25.2	27.5	26.7	25.5	25.3	26.1	28.5	53	67.3	1.1	2.4
3	Jhelum	0.3	0.0	-0.3	-0.5	-1.2	22.7	24.4	23.4	22.8	22.8	24.0	***	56	94.4	1.2	2.4
4	Lahore	0.1	0.0	-0.1	0.4	-0.5	24.4	25.5	25.1	24.1	24.1	***	26.8	61	66.1	0.4	2.2
5	Sargodha	0.2	0.0	-0.2	-0.4	0.5	24.2	28.8	27.2	25.8	26.0	***	27.7	60	62.3	1.1	2.2
6	Multan	0.0	0.0	0.0	-0.1	1.6	25.5	***	***	***	***	***	***	43	72.5	4.1	3.5
7	Khanpur	0.0	0.0	0.0	1.6	-0.1	25.6	***	27.8	28.4	29.1	30.0	30.7	51	100.6	1.8	3.2
8	Tandojam	0.0	0.0	0.0	2.1	-1.3	27.1	33.1	30.3	29.9	28.9	29.5	30.3	47	95.7	2.7	3.9
9	Sakrand	0.0	0.0	0.0	1.8	0.8	27.0	35.8	***	***	***	***	33.4	43	112.8	3.5	7.0
11	Rohri ☆	0.0	0.0	0.0	1.3	-2.2	26.8	***	***	***	***	***	***	41	109.8	1.6	3.3
12	D.I Khan	0.1	0.0	-0.1	0.2	0.1	24.1	28.8	28.6	28.9	29.5	19.7	***	60	77.7	5.9	3.6
13	Peshawar	0.1	0.0	-0.1	-0.9	-3.0	20.2	24.4	23.9	21.8	22.3	23.4	23.8	64	53.9	0.4	1.7
14	Usta. M	0.0	0.0	0.0	0.7	-2.0	25.9	30.1	30.0	29.7	***	***	32.5	57	***	0.5	2.6
15	Quetta	0.0	0.0	0.0	-1.1	3.2	16.8	23.8	21.3	17.7	17.5	18.6	20.2	31	109.0	5.0	3.5
16	Skardu	0.0	0.0	0.0	-1.7	-3.8	7.4	***	***	***	***	***	***	56	85.3	0.9	1.6
17	Gilgit	0.1	0.0	-0.1	-1.1	-1.9	12.7	***	***	***	***	***	***	49	93.0	0.1	1.5

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 (21st to 31st October, 2018)

Light to moderate rainfall reported from few parts of K.P while light rainfall was reported from isolated places of the country during the last decade.

1.1 Punjab

Light rainfall reported from few agricultural plains of Punjab. Chief amount of rainfall received at Islamabad, Kamra & Kot Addu. Decadal maximum & minimum departure both raised above normal by 0.2°C & 0.3°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 54%, 79.8hrs, 1.6km/hr and 2.6mm/day respectively.

1.2 Sindh

Light rainfall reported from few agricultural plains of Sindh. Chief amount of rainfall received at Larkana & Moen-Jo-Daro. Decadal maximum raised above normal by 1.7°C & minimum departure dropped below normal by 0.9°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 44%, 106.1hrs, 2.6km/hr and 4.7mm/day respectively.

1.3 Khyber Pakhtunkhwa (KP)

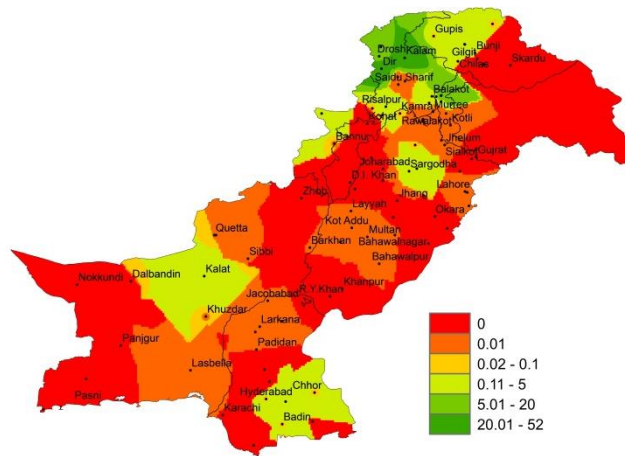
Light to moderate rainfall reported from few agricultural plains of KP. Chief amount of rainfall received at Dir, Kalam & Pattan. Decadal maximum & minimum departure both dropped below normal by 0.4°C & 1.5°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 62%, 65.8hrs, 3.2km/hr and 2.7mm/day respectively.

1.4 Balochistan

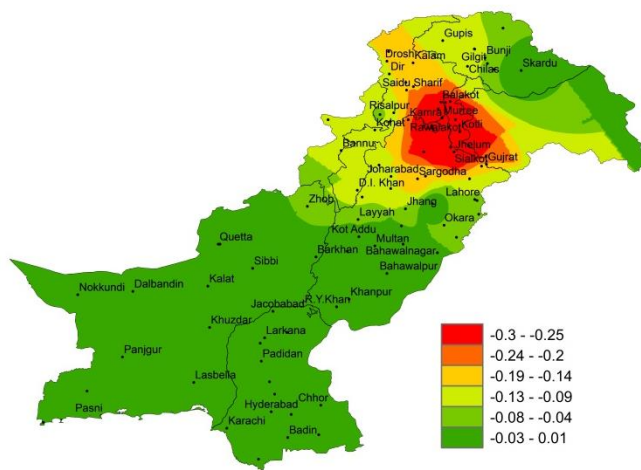
Light rainfall reported from few agricultural plains of Balochistan. Chief amount of rainfall received at Kalat, Lasbella & Quetta. Decadal maximum dropped below normal by 0.2°C & minimum departure raised above normal by 0.6°C, in province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 44%, 109.0hrs, 2.8km/hr and 3.1mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

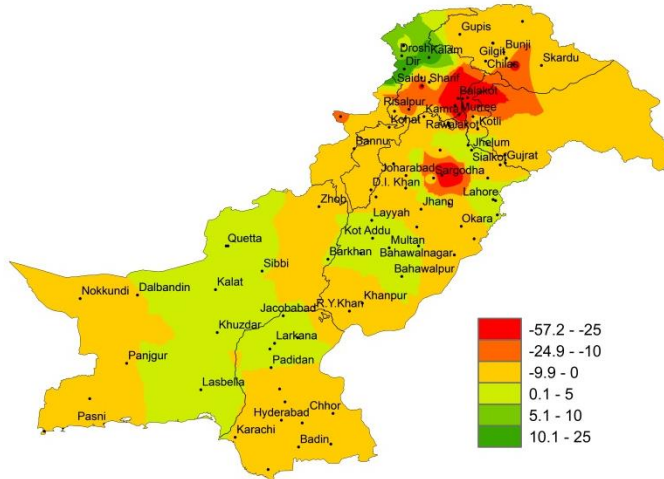
Light rainfall reported from few plains of G.B & Kashmir respectively. Chief amount of rainfall received at Gilgit, Bagrote & Rawalakot. Decadal maximum & minimum departure both dropped below normal by 1.4°C & 2.9°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 53%, 89.2hrs, 0.5km/hr and 1.6mm/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**
(21st to 31st October, 2018)

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

Dry weather reported during the decade; however weather remained cloudy for 03days. Average relative humidity recorded as 57%. Mean day temperature was 29.2°C while night temperature recorded as 11.1°C with 95.5hours bright sunshine duration. Wind speed recorded as 1.3km/hr with mean wind direction *southerly*.

Maize: good condition, wax maturity stage.

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

Dry weather reported during the decade; however weather remained cloudy for 05days. Average relative humidity recorded as 53%. Mean day temperature was 31.9°C while night temperature recorded as 18.4°C with 67.3hours bright sunshine duration. Wind speed recorded as 1.1km/hr with mean wind direction *south easterly*.

Cotton: Very good condition, Full maturity completed.

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

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 47%. Mean day temperature was 37.6°C while night temperature recorded as 16.5°C with 95.7hours bright sunshine duration. Wind speed recorded as 2.7km/h with mean wind direction *southerly*.

The field has been irrigated to get prepared for upcoming Rabi crop.

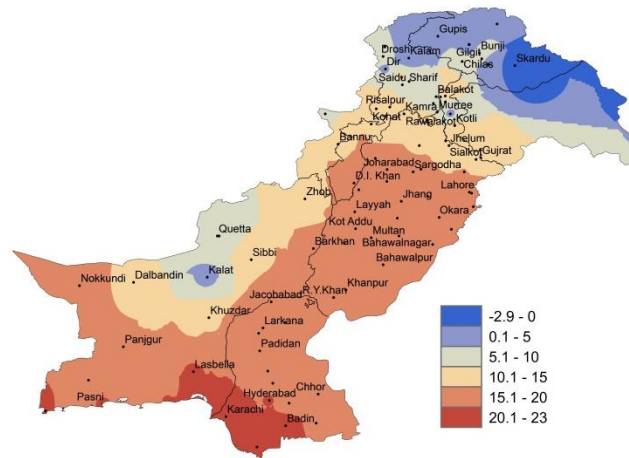
2.4 **RAMC, Usta Muhammad (Eastern Balochistan)**

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 57%. Mean day temperature was 33.7°C while night temperature recorded as 18.1°C. Wind speed recorded as 0.5km/h with mean wind direction *south easterly*.

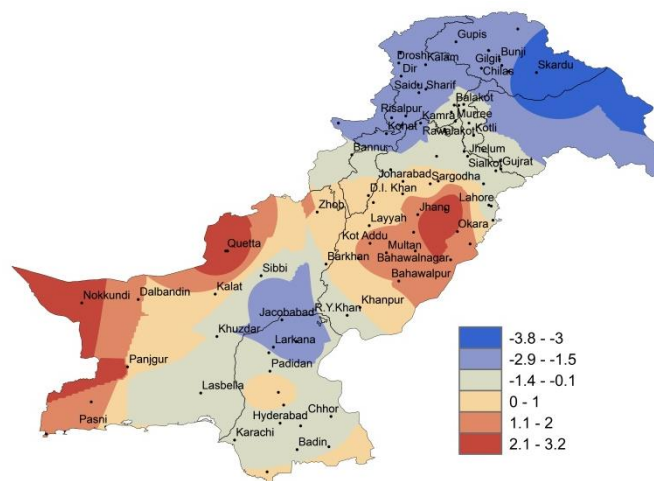
Rice: Good condition, harvested on 26.10.2018.

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

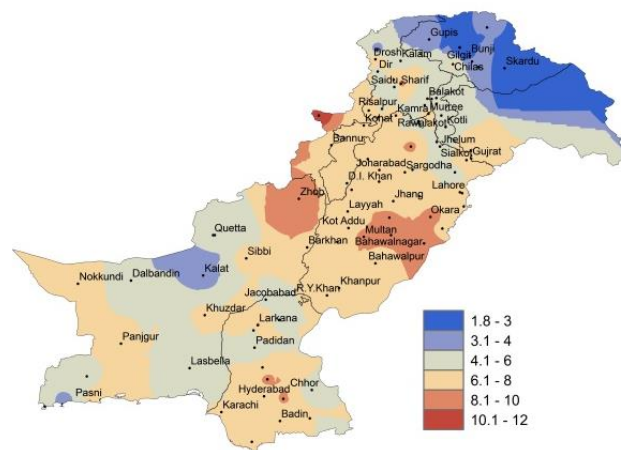
Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 31%. Mean day temperature was 23.6°C while night temperature recorded as 9.9°C with 109.0hours bright sunshine duration. Wind speed recorded as 5.0km/hr with mean wind direction *north westerly*.



I. Actual min-temp



II. Departure of min-temp from Normal



III. Departure of min-temp from Previous Decade

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

2(b) Past Weather for Sub-Regional Agricultural Plains (21st to 31st October, 2018)

2.6 Jhelum

Dry weather reported during the decade; however weather remained cloudy for 06days. Average relative humidity recorded as 56%. Mean day temperature was 31.1°C while night temperature recorded as 14.3°C with 94.4hours bright sunshine duration. Wind speed recorded as 1.2km/hr with mean wind direction *southerly*.

2.7 Lahore

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 03days. Average relative humidity recorded as 61%. Mean day temperature was 30.8°C while night temperature recorded as 18.0°C with 66.1hours bright sunshine duration. Wind speed recorded as 0.4km/hr with mean wind direction *westerly*.

2.8 Sargodha

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 07days. Average relative humidity recorded as 60%. Mean day temperature was 31.1°C while night temperature recorded as 17.3°C with 62.3hours bright sunshine duration. Wind speed recorded 1.1km/hr with mean wind direction *south westerly*.

2.9 Multan

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 07days. Average relative humidity recorded as 43%. Mean day temperature was 32.5°C while night temperature recorded as 18.4°C with 72.5hours bright sunshine duration. Wind speed recorded 4.1km/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 51%. Mean day temperature was 34.6°C while night temperature recorded as 16.6°C with 100.6hours bright sunshine duration. Wind speed recorded 1.8km/hr with wind direction *northerly*.

2.11 Sakrand

Dry weather reported during the decade; however weather remained cloudy for 01day. Average relative humidity recorded as 43%. Mean day temperature was 35.9°C while night temperature recorded as 18.1°C with 112.8hours bright sunshine duration. Wind speed recorded 3.5km/hr with wind direction *northerly*.

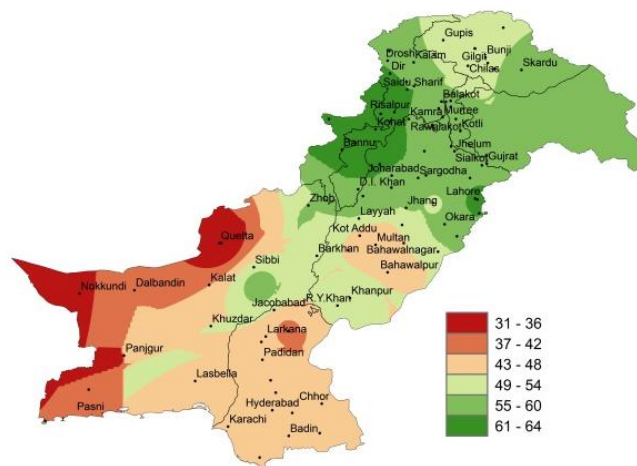


Figure.3: Relative Humidity in Percentage (%)

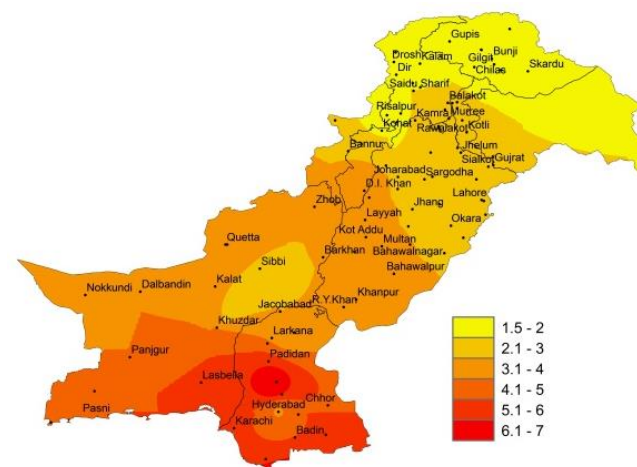


Figure.4: Reference Crop Evapotranspiration ET0 (mm/day)

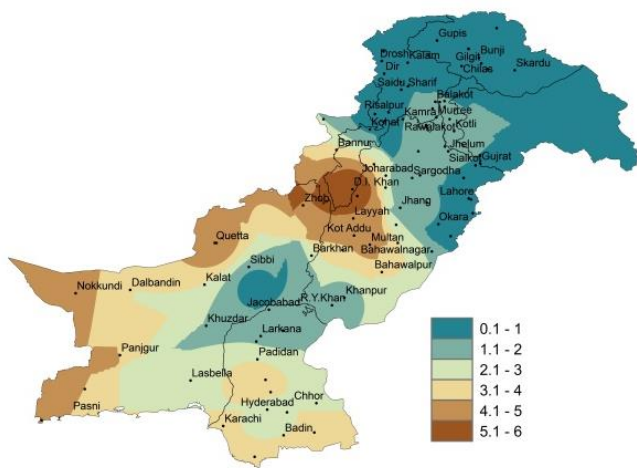


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Dry weather reported during the decade; however weather remained cloudy for 03days. Average relative humidity recorded as 41%. Mean day temperature was 35.3°C while night temperature recorded as 18.3°C with 109.8hours bright sunshine duration. Wind speed recorded 1.6km/hr with wind direction *northerly*.

2.13 D.I. Khan

Dry weather reported during the decade; however weather remained cloudy for 01day. Average relative humidity recorded as 60%. Mean day temperature was 32.2°C while night temperature recorded as 15.9°C with 77.7hours bright sunshine duration. Wind speed recorded as 5.9km/hr with mean wind direction *south easterly*.

2.14 Peshawar

Rainfall reported as Trace (not measureable) during the decade; however remained cloudy for 06days. Average relative humidity recorded as 64%. Mean day temperature was 28.2°C while night temperature recorded as 12.1°C with 53.9hours bright sunshine duration. Wind speed recorded as 0.4km/hr with mean wind direction *easterly*.

2.15 Skardu

Dry weather reported during the decade; however weather remained cloudy for 02days. Average relative humidity recorded as 56%. Mean day temperature was 17.6°C while night temperature recorded as -2.6°C with 85.3hours bright sunshine duration. Wind speed recorded as 0.9km/hr with mean wind direction *south easterly*.

2.16 Gilgit

Dry weather reported during the decade; however remained cloudy for 09days. Average relative humidity recorded as 49%. Mean day temperature was 23.9°C while night temperature recorded as 1.5°C with 93.0hours bright sunshine duration. Wind speed recorded as 0.1km/hr with mean wind direction *southerly*.

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 most parts of the province, however light to moderate rainfall is expected in upper parts of province during 1st half of decade.
- ❖ **Khyber Pakhtunkhwa:** Light to moderate rainfall is expected at scattered places in upper parts of the province during 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 north eastern parts of province during the 1st half of the current decade.
- ❖ **Gilgit-Baltistan:** Light to moderate rainfall is expected at scattered places of G.B during the current decade.
- ❖ **Kashmir:** Light to moderate rainfall is expected at scattered places in Kashmir during the current decade.

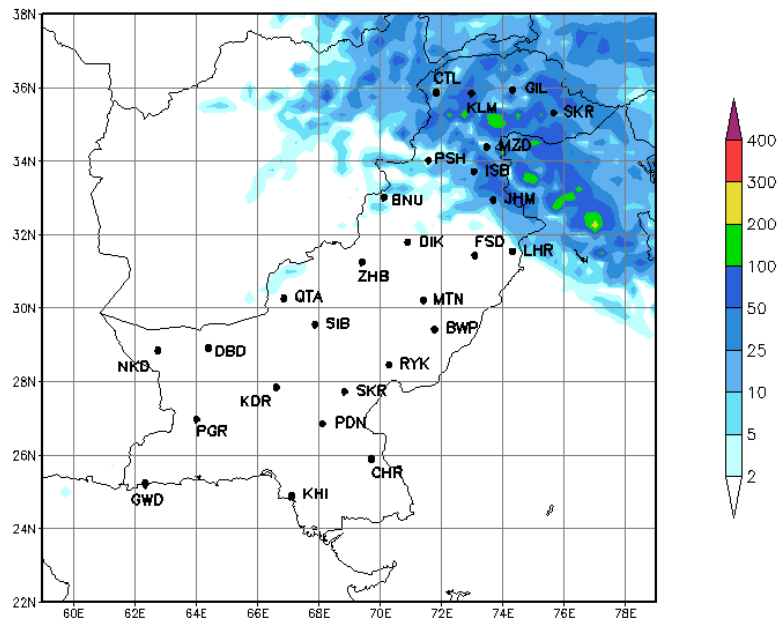
3.4 Advisory for Farmers

- ❖ Use proper precautions during picking of cotton because the cost of good and clean quality cotton is high than that of the filthy one.
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- ❖ Harvesting of Peanut may be completed and the fields may be well ploughed afterwards.
- ❖ Farmers are advised to schedule the irrigation plans in context of upcoming Rabi crops.
- ❖ 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.

Ten Days Weather Advisory for Farmers
(1st to 10th November, 2018)

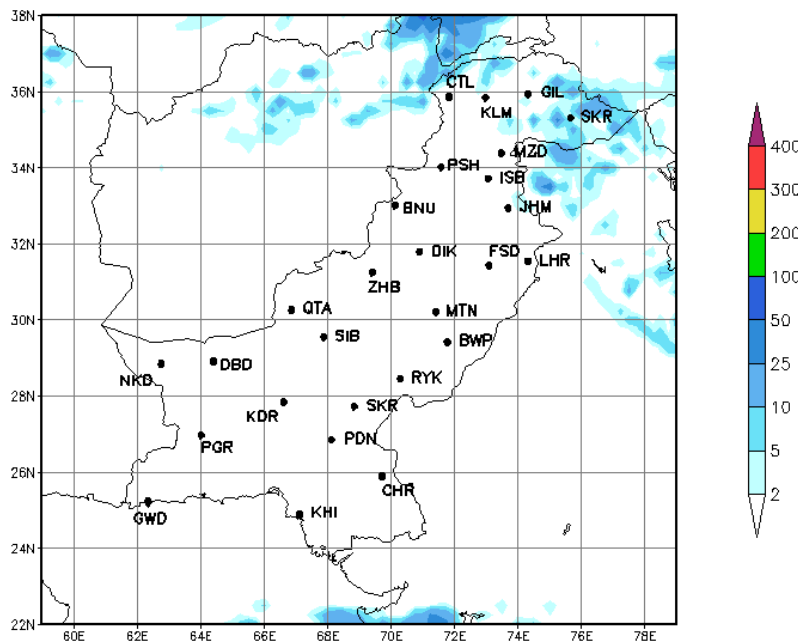
4.1 Precipitation Outlook (1st to 3rd November, 2018)

The forecast for the first three days (1st to 3rd) of the first decade of November 2018 shows that mainly dry weather may prevail in most parts of the country, however light to moderate rainfall with snowfall over the mountains is expected in Upper Punjab, K.P, GB, Kashmir, and at isolated places of south eastern Balochistan.



4.2 Precipitation Outlook (4th to 10th November, 2018)

The outlook for the last seven days (4th to 10th) of the first decade of November 2018 shows that light to moderate rainfall is expected at particular places of the upper KP, Kashmir and G.B. 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)