

Decadal Agromet Bulletin of Pakistan



Highlights....

- ❖ Light to moderate rainfall reported from few parts of Punjab, K.P, G.B & Kashmir while dry weather was reported from rest parts of the country during the last decade.
- ❖ Highest amount of rainfall recorded as 34.0mm at Malam Jabba during the last decade.
- ❖ Lowest minimum temperature recorded as -7.6°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 northern and western parts of the country, while dry weather may prevail in rest parts of the country 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.
- ❖ 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.

**NATIONAL AGROMET CENTRE (NAMC)
PAKISTAN METEOROLOGICAL DEPARTMENT
SECTOR H-8/2, ISLAMABAD**

Editor-in-Chief: *Ms. Asma Jawad Hashmi, Deputy Director*

Editor: *Ms. Khalida Noureen, Meteorologist*

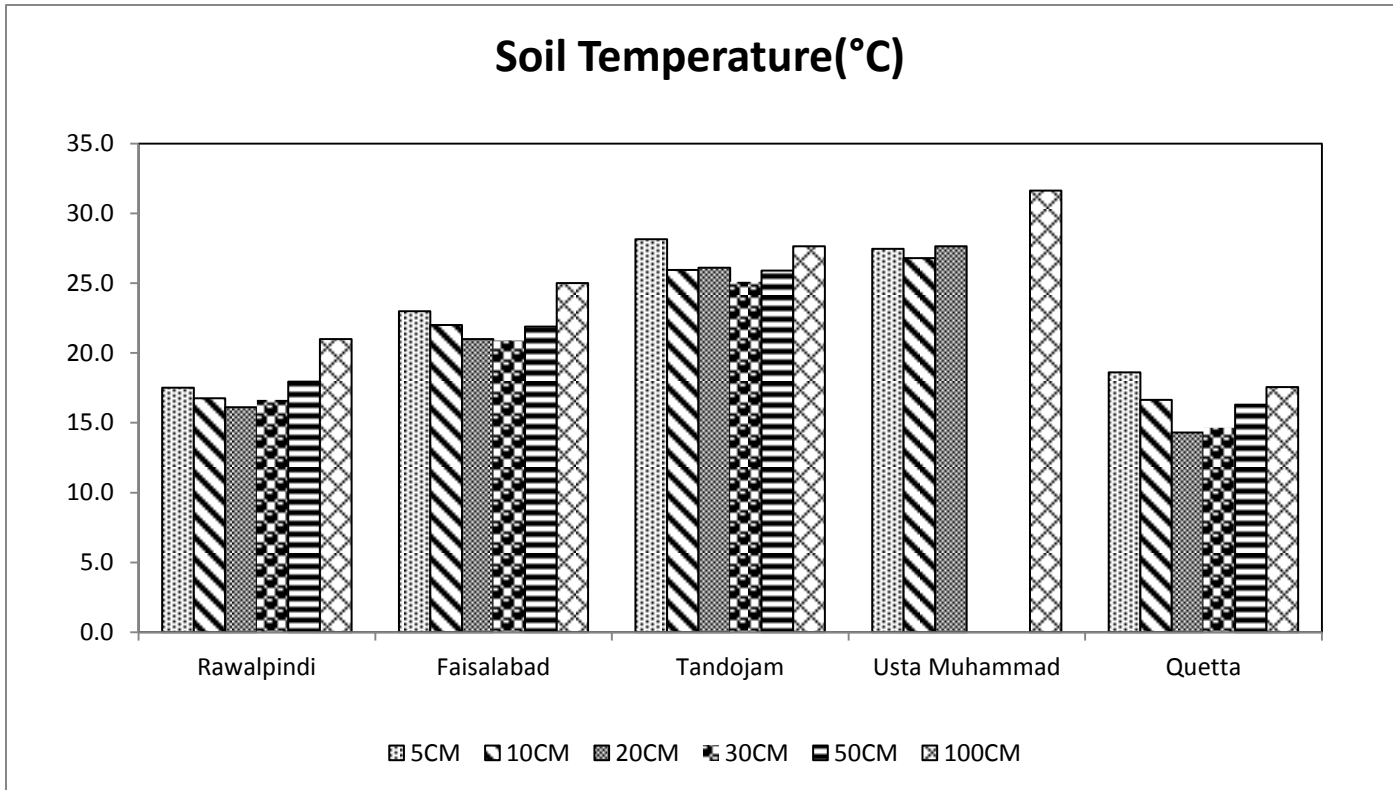
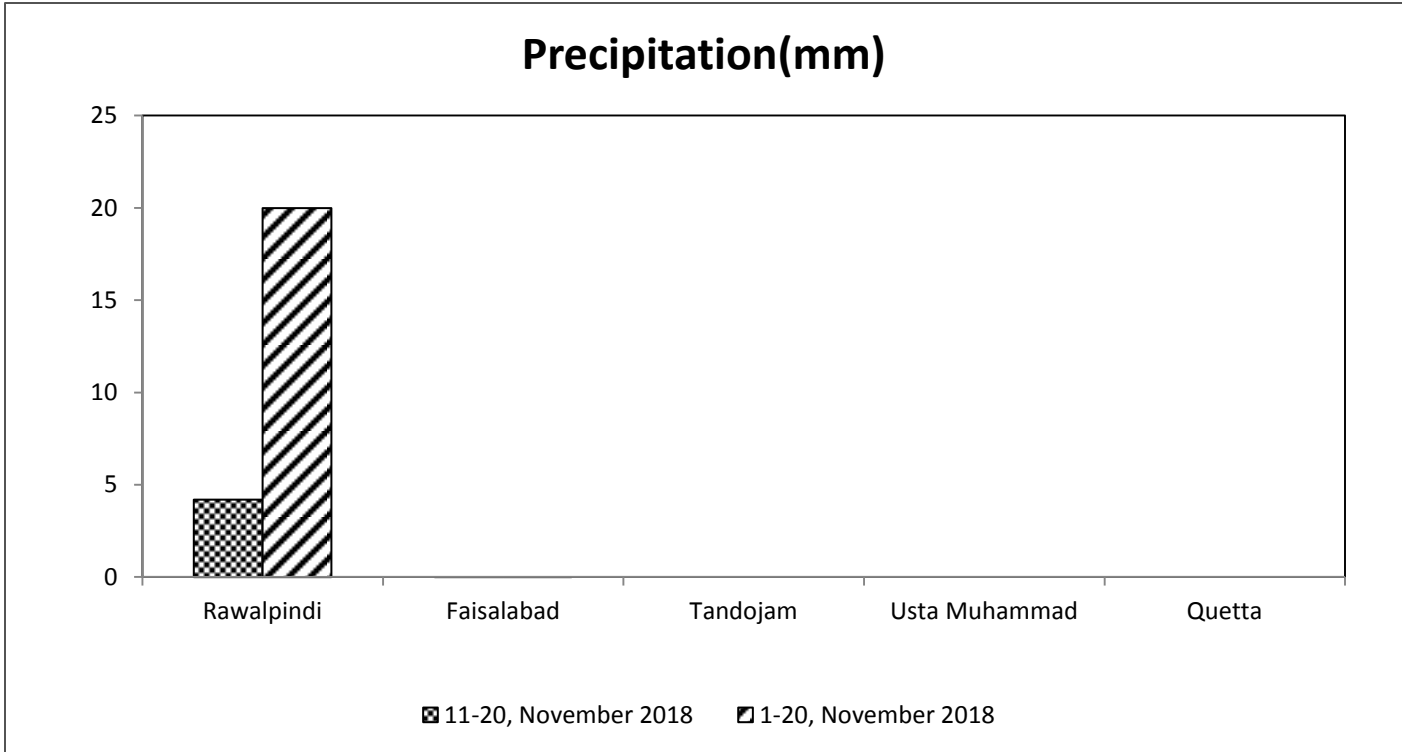
Phone: [+92-51-9250592](tel:+92-51-9250592) Email: dirnamc@yahoo.com

Meteorological Conditions during 2nd Decade of November, 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	0.5	4.2	3.7	-2.4	-1.0	15.1	17.5	16.8	16.1	16.7	18.0	21.0	65	58.2	1.0	1.3
2	Faisalabad	0.1	0.0	-0.1	-0.3	2.1	19.8	23.0	22.0	21.0	20.9	21.9	25.0	59	37.3	1.3	1.6
3	Jhelum	0.5	0.4	-0.1	-1.2	-0.5	18.2	18.9	18.3	18.1	18.5	20.1	***	57	68.0	2.1	1.8
4	Lahore	0.2	1.8	1.6	-1.2	-0.8	20.0	20.8	20.4	20.0	20.3	***	23.8	66	63.8	1.4	1.8
5	Sargodha	0.4	0.0	-0.4	-0.6	1.2	19.7	23.8	22.5	21.4	22.0	***	24.6	68	53.9	1.7	1.7
6	Multan	0.0	0.0	0.0	-2.1	1.0	19.5	***	***	***	***	***	***	58	47.1	2.2	1.9
7	Khanpur	0.0	0.0	0.0	0.2	0.2	20.5	***	22.1	22.6	23.5	24.5	27.0	61	50.0	2.3	2.0
8	Tandojam	0.0	0.0	0.0	0.6	1.2	23.6	28.2	26.0	26.1	25.1	25.9	27.7	61	71.3	3.3	2.9
9	Sakrand	0.0	0.0	0.0	1.8	2.7	23.0	28.7	***	***	***	***	30.3	54	86.8	5.2	3.5
11	Rohri ☆	0.0	0.0	0.0	1.2	0.4	22.9	***	***	***	***	***	***	52	81.5	4.1	3.0
12	D.I Khan	0.4	0.0	-0.4	0.2	1.0	19.7	21.4	21.6	22.2	22.9	13.6	***	67	75.1	5.5	2.5
13	Peshawar	0.7	0.3	-0.4	-0.4	-1.1	16.9	19.8	19.4	18.0	18.7	19.9	21.0	63	46.8	1.0	1.3
14	Usta. M	0.0	0.0	0.0	7.5	-3.1	20.4	27.5	26.8	27.6	***	***	31.6	59	***	4.5	2.7
15	Quetta	1.8	0.0	-1.8	0.0	3.5	12.0	18.6	16.7	14.3	14.7	16.3	17.6	34	96.0	5.9	2.7
16	Skardu	0.1	0.0	-0.1	-2.0	-0.8	4.3	***	***	***	***	***	***	66	44.3	2.1	1.1
17	Gilgit	0.1	0.0	-0.1	-2.3	2.0	9.5	***	***	***	***	***	***	58	36.6	2.9	1.3

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 November, 2018



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

Light to moderate rainfall reported from few parts of Punjab, K.P, G.B & Kashmir while dry weather was reported from rest parts 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 Murree, Islamabad & Kamra. Decadal maximum dropped below normal by 1.1°C & minimum departure raised above normal by 0.3°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 62%, 54.0hrs, 1.7km/hr and 1.7mm/day respectively.

1.2 Sindh

Dry weather was reported from agricultural plains of Sindh. Decadal maximum and minimum departures both raised above normal by 1.2°C & 1.4°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 56%, 79.9hrs, 4.2km/hr and 3.1mm/day respectively.

1.3 Khyber Pakhtunkhwa (KP)

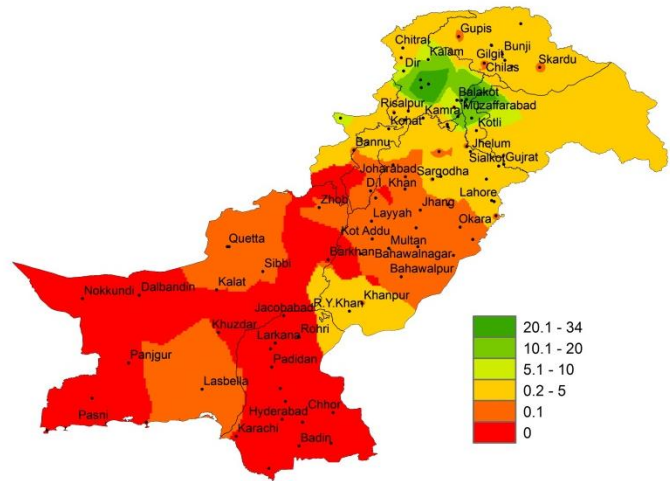
Light to moderate rainfall reported from few agricultural plains of KP. Chief amount of rainfall received at Malam Jabba, Saidu Sharif & Lower Dir. Decadal maximum dropped below normal by 0.1°C & minimum departure remained normal, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 65%, 61.0hrs, 3.3km/hr and 1.9mm/day respectively.

1.4 Balochistan

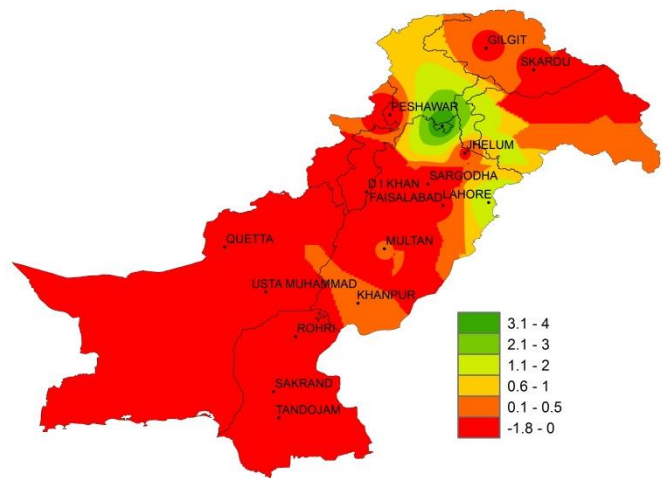
Trace rainfall reported from two agricultural plains of Balochistan. Chief amount of rainfall received at Lasbella & Quetta. Decadal maximum & minimum departure both raised above normal by 3.8°C & 0.2°C respectively, in province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 47%, 96.0hrs, 5.2km/hr and 2.7mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

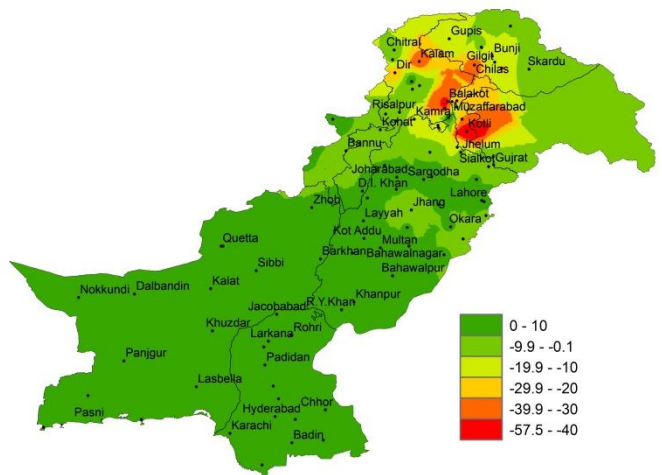
Light to moderate rainfall reported from few plains of G.B & Kashmir respectively. Chief amount of rainfall received at Rawalakot, Garhi Dopatta & Astore. Decadal maximum & dropped below normal by 2.2°C and minimum departure raised above normal by 0.6°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 62%, 40.5hrs, 2.5km/hr and 1.2mm/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 November, 2018)

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

Rainfall reported as 4.2mm during the decade; however weather remained cloudy for 07days. Average relative humidity recorded as 65%. Mean day temperature was 22.5°C while night temperature recorded as 7.6°C with 58.2hours bright sunshine duration. Wind speed recorded as 1.0km/hr with mean wind direction *westerly*.

Maize: *good condition, Full maturity stage.*

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

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 07days. Average relative humidity recorded as 59%. Mean day temperature was 26.6°C while night temperature recorded as 13.0°C with \37.3hours bright sunshine duration. Wind speed recorded as 1.3km/hr with mean wind direction *variable*.

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 61%. Mean day temperature was 31.7°C while night temperature recorded as 15.5°C with 71.3hours bright sunshine duration. Wind speed recorded as 3.3km/h with mean wind direction *northerly*.

Wheat (TJ-83): *Good condition, True leaf.*

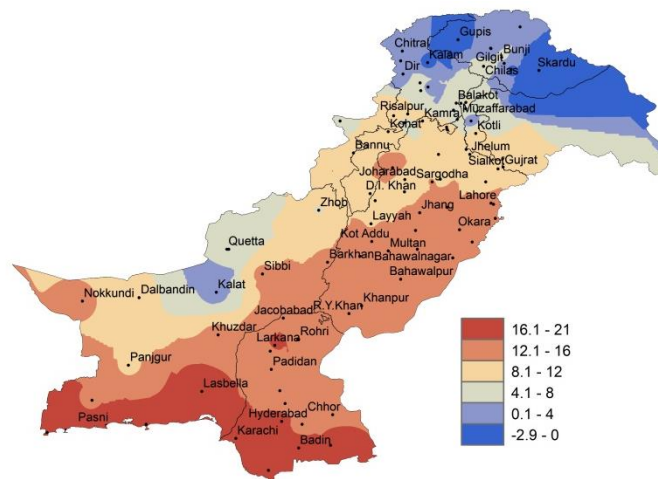
2.4 **RAMC, Usta Muhammad (Eastern Balochistan)**

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 59%. Mean day temperature was 27.3°C while night temperature recorded as 13.5°C. Wind speed recorded as 4.5km/h with mean wind direction *south westerly*.

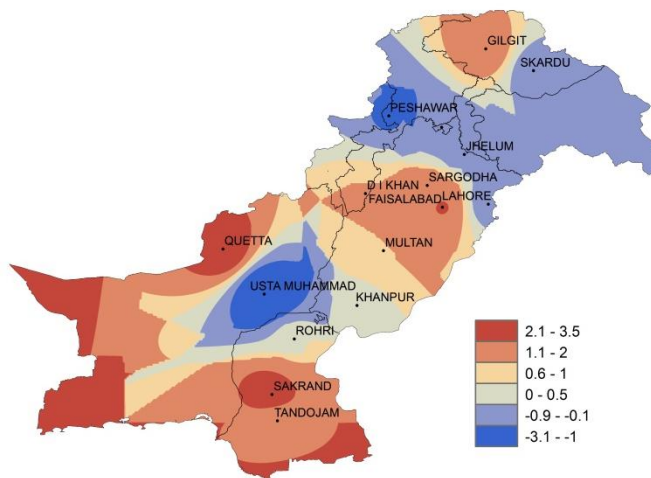
The field has been irrigated to get prepared for upcoming Rabi crop.

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

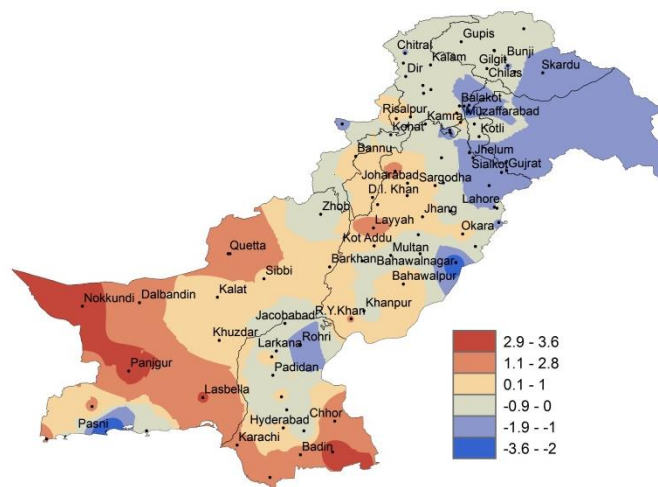
Dry weather reported during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 34%. Mean day temperature was 18.6°C while night temperature recorded as 5.4°C with 96.0hours bright sunshine duration. Wind speed recorded as 5.9km/hr with mean wind direction *north 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 (11th to 20th November, 2018)

2.6 Jhelum

Rainfall reported as 0.4mm during the decade; however weather remained cloudy for 08days. Average relative humidity recorded as 57%. Mean day temperature was 25.7°C while night temperature recorded as 10.6°C with 68.0hours bright sunshine duration. Wind speed recorded as 2.1km/hr with mean wind direction *variable*.

2.7 Lahore

Rainfall reported as 1.8mm during the decade; however weather remained cloudy for 06days. Average relative humidity recorded as 66%. Mean day temperature was 25.8°C while night temperature recorded as 14.1°C with 63.8hours bright sunshine duration. Wind speed recorded as 1.4km/hr with mean wind direction *northerly*.

2.8 Sargodha

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 06days. Average relative humidity recorded as 68%. Mean day temperature was 26.2°C while night temperature recorded as 13.2°C with 62.3hours bright sunshine duration. Wind speed recorded 1.7km/hr with mean wind direction *north easterly*.

2.9 Multan

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 07days. Average relative humidity recorded as 58%. Mean day temperature was 25.7°C while night temperature recorded as 13.2°C with 47.1hours bright sunshine duration. Wind speed recorded 2.2km/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 61%. Mean day temperature was 28.3°C while night temperature recorded as 12.6°C with 50.0hours bright sunshine duration. Wind speed recorded 2.3km/hr with 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 54%. Mean day temperature was 30.7°C while night temperature recorded as 15.3°C with 86.8hours bright sunshine duration. Wind speed recorded 5.2km/hr with wind direction *northerly*.

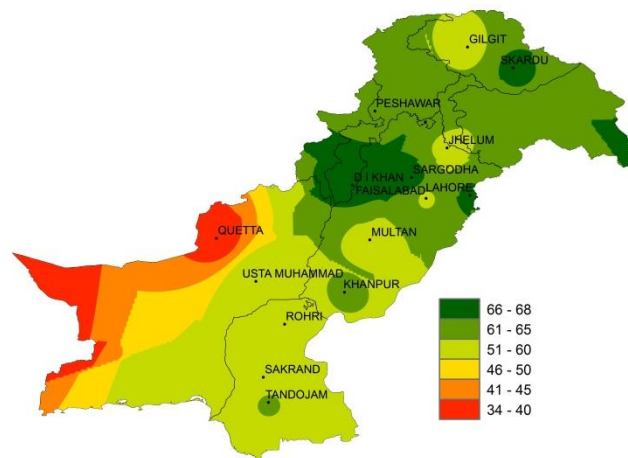


Figure.3: Relative Humidity in Percentage (%)

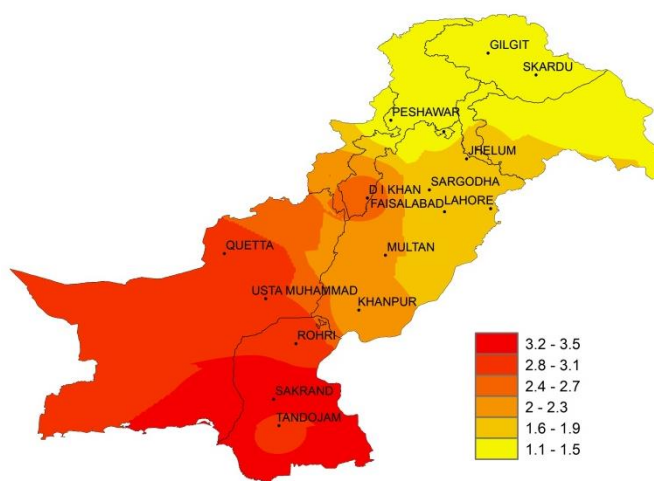


Figure.4: Reference Crop Evapotranspiration ET0 (mm/day)

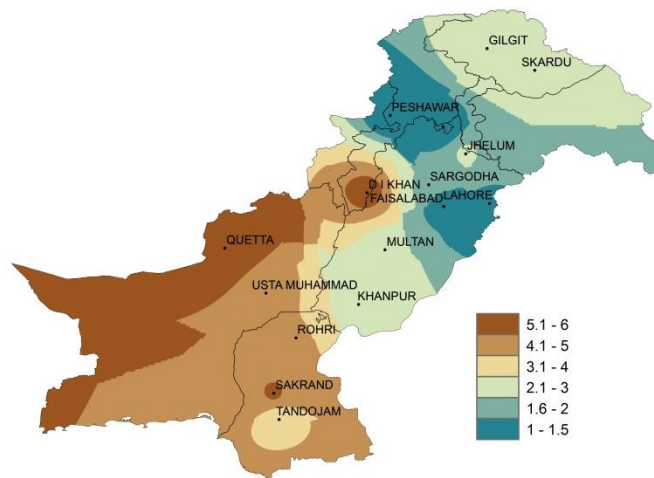


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Dry weather reported during the decade; however weather remained cloudy for 01day. Average relative humidity recorded as 52%. Mean day temperature was 29.9°C while night temperature recorded as 15.8°C with 81.5hours bright sunshine duration. Wind speed recorded 4.1km/hr with wind direction *north easterly*.

2.13 D.I. Khan

Dry weather reported during the decade; however weather remained cloudy for 03days. Average relative humidity recorded as 67%. Mean day temperature was 27.3°C while night temperature recorded as 12.0°C with 75.1hours bright sunshine duration. Wind speed recorded as 5.5km/hr with mean wind direction *north easterly*.

2.14 Peshawar

Rainfall reported as 0.3mm during the decade; however remained cloudy for 08days. Average relative humidity recorded as 63%. Mean day temperature was 24.2°C while night temperature recorded as 9.4°C with 46.8hours bright sunshine duration. Wind speed recorded as 1.0km/hr with mean wind direction *north easterly*.

2.15 Skardu

Dry weather reported during the decade; however weather remained cloudy for 06days. Average relative humidity recorded as 66%. Mean day temperature was 11.4°C while night temperature recorded as -2.9°C with 44.3hours bright sunshine duration. Wind speed recorded as 2.1km/hr with mean wind direction *south south-westerly*.

2.16 Gilgit

Dry weather reported during the decade; however remained cloudy for 07days. Average relative humidity recorded as 58%. Mean day temperature was 16.4°C while night temperature recorded as 2.6°C with 36.6hours bright sunshine duration. Wind speed recorded as 2.9km/hr with mean wind direction *south westerly*.

Ten Days Weather Advisory for Farmers
(21st to 30th November, 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

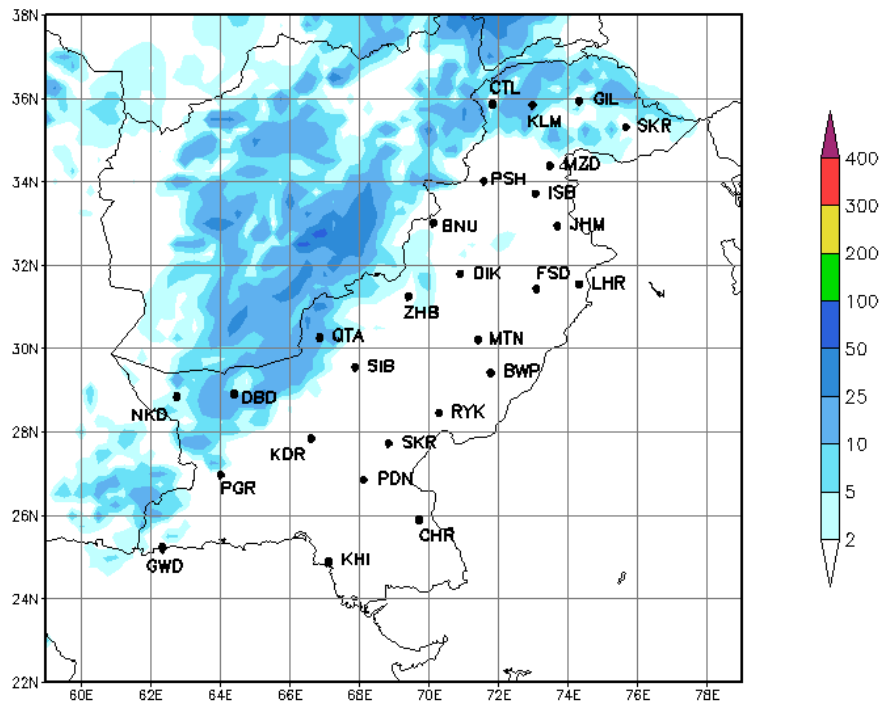
- ❖ **Punjab:** Dry weather is expected in the province, during the current decade.
- ❖ **Khyber Pakhtunkhwa:** Light to moderate rainfall (snowfall over mountains) is expected at scattered places in western and upper parts of the province during the current decade.
- ❖ **Sindh:** Dry weather is expected in the province during the current decade.
- ❖ **Balochistan:** Light to moderate rainfall (snowfall over mountains) is expected at scattered places in the north western parts of province during 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.
- ❖ 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.

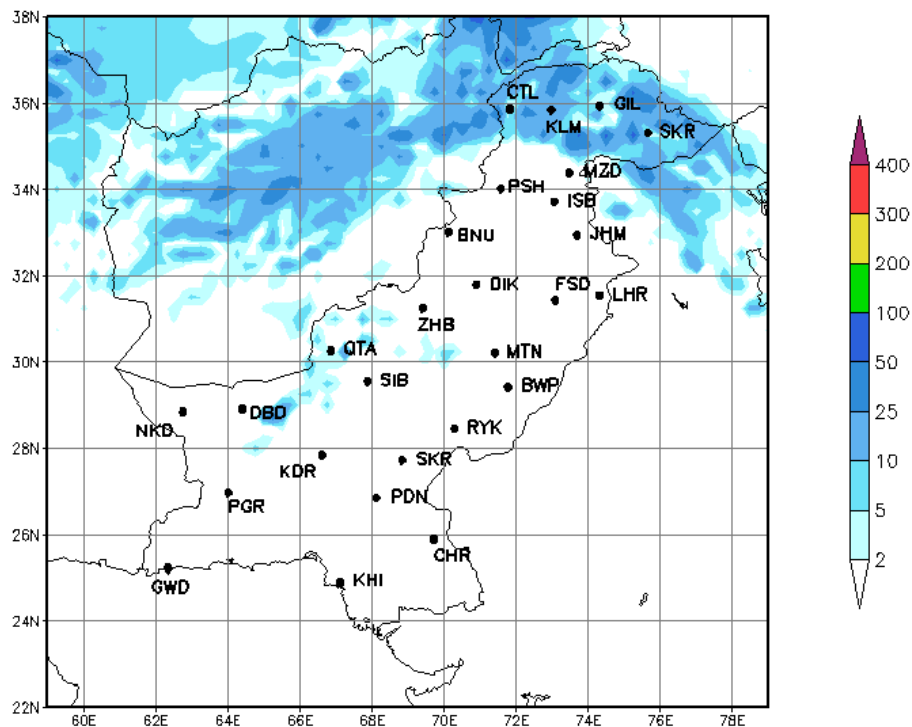
4.1 Precipitation Outlook (22nd to 24th November, 2018)

The forecast for the next three days (22nd to 24th) of the third 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 north-western parts of the country, while dry weather may prevail in rest parts of the country.



4.2 Precipitation Outlook (25th to 30th November, 2018)

The outlook for the last six days (25th to 30th) of the third decade of November 2018 shows that light to moderate rainfall is expected at particular places of the upper KP, Balochistan, 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)