

Decadal Agromet Bulletin of Pakistan



Highlights....

- ❖ Light rainfall reported from particular places of K.P and G.B. While dry weather reported from rest of the country during the last decade.
- ❖ Highest amount of rainfall recorded as 8.0mm at Dir during the last decade.
- ❖ Highest maximum temperature recorded as 43.8°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 in the start of the decade.
- ❖ 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.
- ❖ Farmers are advised to take cultivate winter vegetables in time so that present soil moisture may fully be utilized.
- ❖ Farmers of cotton crop areas are advised to prepare field for incoming Rabi crops and complete sowing in time.

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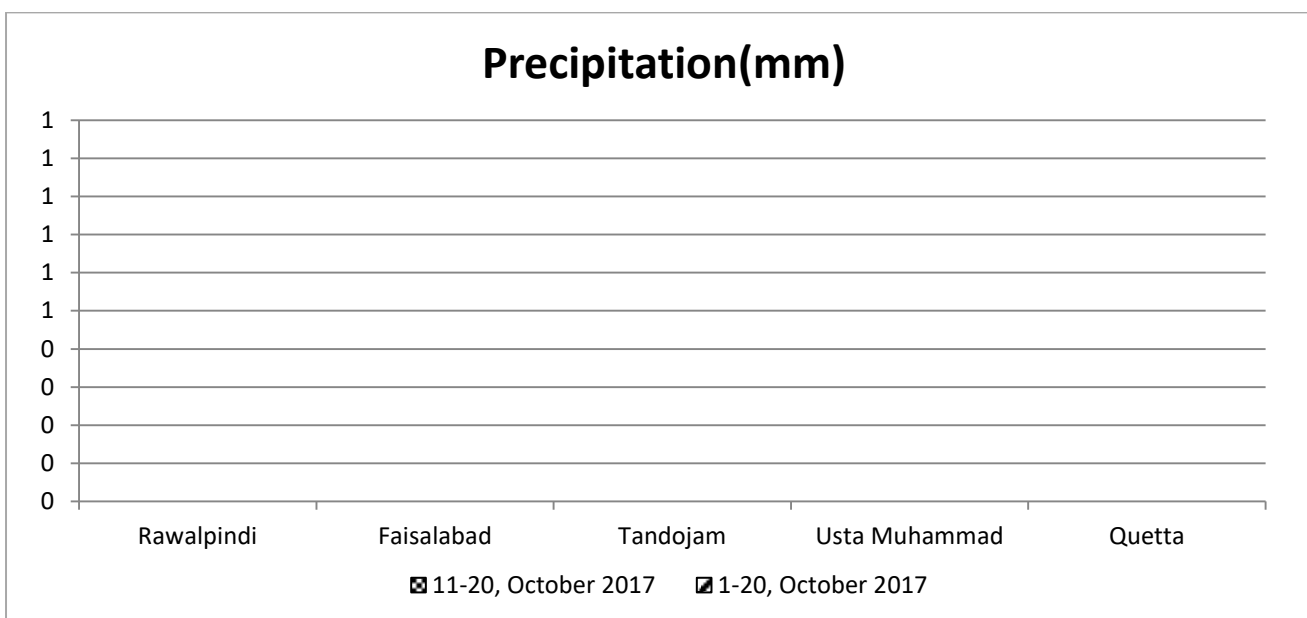
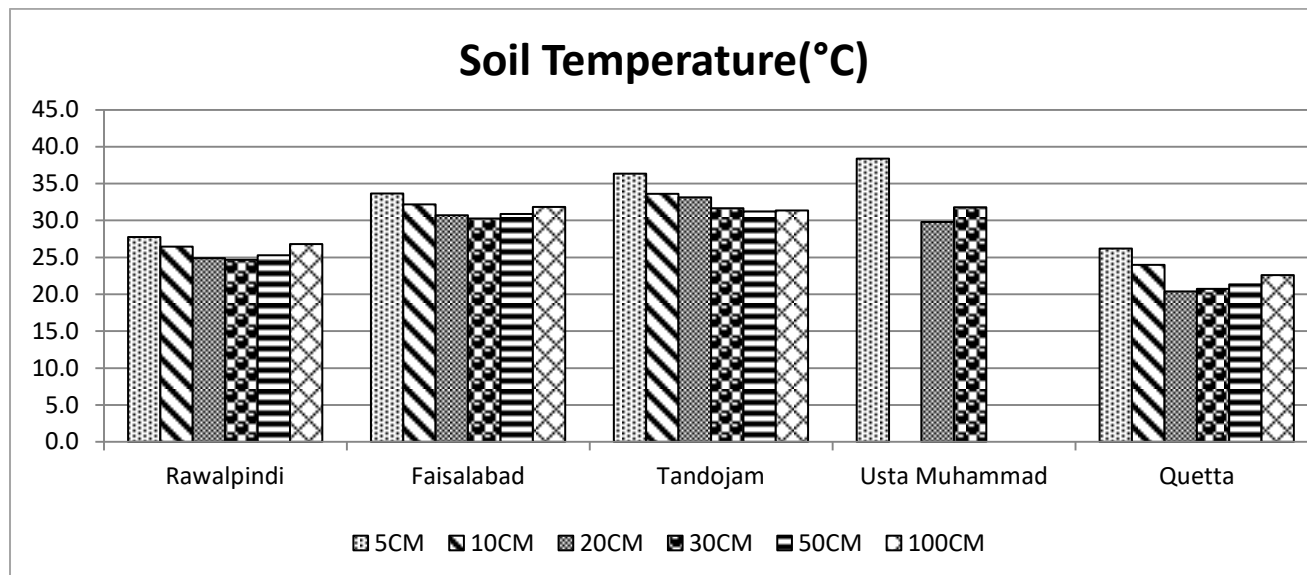
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Meteorological Conditions during 2nd Decade of October, 2017

| 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 | 1.9 | 0.0 | -1.9 | 3.7 | 2.0 | 26.0 | 27.8 | 26.5 | 24.9 | 24.7 | 25.3 | 26.8 | 52 | 93.1 | 2.1 | 2.1 |
| 2 | Faisalabad | 0.1 | 0.0 | -0.1 | -0.5 | 0.8 | 26.8 | 33.7 | 32.2 | 30.7 | 30.3 | 30.9 | 31.9 | 51 | 77.3 | 1.3 | 1.9 |
| 3 | Jhelum | 1.1 | 0.0 | -1.1 | 2.8 | 0.3 | 28.1 | 29.2 | 28.0 | 26.8 | 26.5 | 27.4 | *** | 55 | 90.2 | 1.6 | 2.0 |
| 4 | Lahore | 0.6 | 0.0 | -0.6 | 2.7 | 2.1 | 28.1 | 30.5 | 29.8 | 28.3 | 27.9 | *** | 29.0 | 55 | 67.8 | 0.8 | 1.8 |
| 5 | Sargodha | 0.4 | 0.0 | -0.4 | 1.8 | 1.7 | 28.3 | 32.9 | 31.1 | 29.2 | 29.1 | *** | 29.1 | 55 | 83.2 | 1.9 | 2.2 |
| 6 | Multan | 0.0 | 0.0 | 0.0 | 1.4 | -0.9 | 27.9 | *** | *** | *** | *** | *** | *** | 46 | 86.1 | 2.4 | 2.6 |
| 7 | Khanpur | 0.0 | 0.0 | 0.0 | 2.2 | 2.0 | 26.0 | *** | 29.8 | 30.2 | 30.8 | 31.6 | 32.0 | 52 | 99.3 | 2.0 | 2.8 |
| 8 | Tandojam | 0.0 | 0.0 | 0.0 | 3.1 | -0.4 | 29.5 | 36.4 | 33.6 | 33.2 | 31.7 | 31.3 | 31.4 | 50 | 88.3 | 3.3 | 3.5 |
| 9 | Sakrand ☆ | 0.0 | 0.0 | 0.0 | 2.7 | 0.7 | 29.4 | 37.9 | *** | *** | *** | *** | 34.1 | 45 | 111.2 | 2.3 | 3.1 |
| 11 | Rohri | 0.0 | 0.0 | 0.0 | 2.4 | -0.9 | 29.9 | *** | *** | *** | *** | *** | *** | 40 | 99.8 | 3.0 | 3.2 |
| 12 | D.I Khan | 0.2 | 0.0 | -0.2 | 2.1 | 2.2 | 28.1 | 29.2 | 28.9 | 29.1 | 29.7 | 19.7 | 31.3 | 53 | 90.3 | 6.2 | 3.6 |
| 13 | Peshawar | 0.5 | 0.0 | -0.5 | 2.6 | -1.0 | 24.8 | 28.3 | 32.8 | 25.7 | 25.8 | 26.7 | 27.0 | 52 | 66.2 | 1.4 | 1.6 |
| 14 | Usta .M | 0.0 | 0.0 | 0.0 | 2.3 | -2.5 | 28.2 | 38.4 | *** | 29.8 | 31.8 | *** | *** | 51 | *** | 1.2 | 2.2 |
| 15 | Quetta | 0.0 | 0.0 | 0.0 | -0.4 | -1.6 | 16.8 | 26.2 | 24.0 | 20.4 | 20.8 | 21.4 | 22.6 | 16 | 103.4 | 4.8 | 2.9 |
| 16 | Skardu | 0.2 | 0.0 | -0.2 | 0.5 | -0.3 | 12.0 | *** | *** | *** | *** | *** | *** | 54 | 59.7 | 1.5 | 1.1 |
| 17 | Gilgit | 0.1 | 0.0 | -0.1 | 2.0 | 1.3 | 16.3 | *** | *** | *** | *** | *** | *** | 44 | 64.3 | 1.7 | 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 October, 2017



Past Weather (11th to 20th October, 2017)

Light rainfall reported from few parts of K.P and G.B. 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 2.0°C & 0.8°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 52%, 85.3 hrs, 1.7km/hr and mm/day respectively.

1.2 Sindh

Dry weather reported from the agricultural plains of Sindh. Decadal maximum raised above normal by 2.7°C & minimum temperature dropped below normal by 0.2°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 45%, 99.8hrs, 2.9km/hr and 3.3mm/day respectively.

1.3 Khyber Pakhtunkhwa (KP)

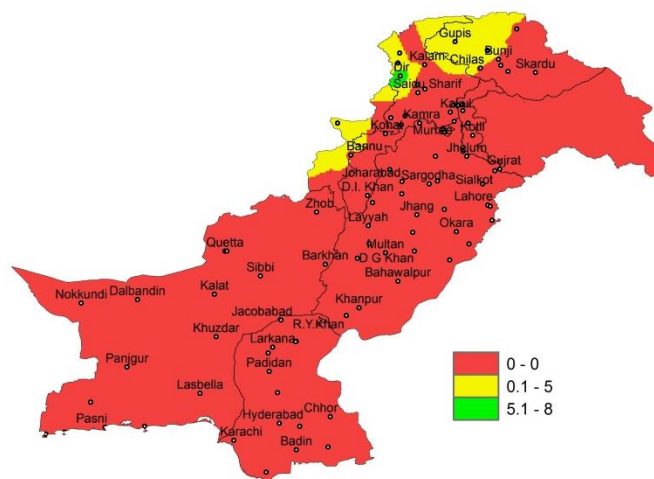
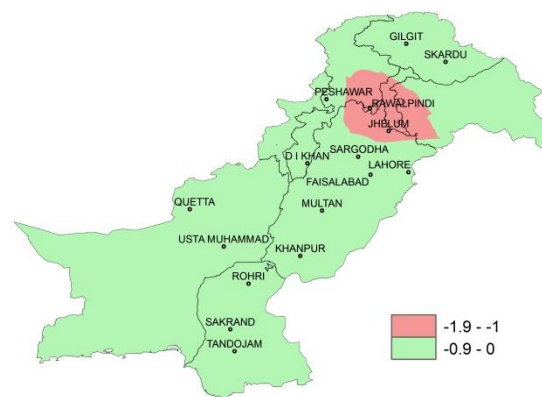
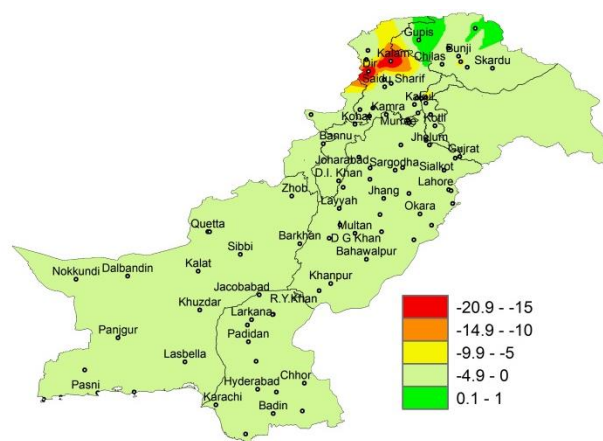
Rainfall reported from a single station Parachinar 2.0mm of agricultural plains of KP. Decadal maximum & minimum departure both raised above normal by 2.4°C & 0.6°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 53%, 78.3hrs, 3.8km/hr and 2.6mm/day respectively.

1.4 Balochistan

Dry weather reported from the agricultural plains of Balochistan. Decadal maximum raised above normal by 0.9°C & minimum temperature dropped below normal by 2.1°C, in province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 34%, 103.4 hrs, 3.0km/hr and 2.6 mm/day respectively.

1.5 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 1.3°C & 0.5°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 49%, 62.0hrs, 1.6km/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(b) Past Weather for Sub-Regional Agricultural Plains (11th to 20th October, 2017)

2.6 Jhelum

Dry weather reported during the decade; however weather remained cloudy for 01day. Average relative humidity recorded as 55%. Mean day temperature was 35.4°C while night temperature recorded as 18.1°C with 90.2hours bright sunshine duration. Wind speed recorded as 1.6km/hr with mean wind direction *south easterly*.

2.7 Lahore

Dry weather reported during the decade; however weather remained cloudy for 02days. Average relative humidity recorded as 55%. Mean day temperature was 34.7°C while night temperature recorded as 21.4°C with 67.8hours bright sunshine duration. Wind speed recorded as 0.8km/hr with mean wind direction *north westerly*.

2.8 Sargodha

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 55%. Mean day temperature was 35.0°C while night temperature recorded as 21.2°C with 83.2hours bright sunshine duration. Wind speed recorded 1.0km/hr with mean wind direction *variable*.

2.9 Multan

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 46%. Mean day temperature was 35.7°C while night temperature recorded as 20.9°C with 86.1hours bright sunshine duration. Wind speed recorded 2.4km/hr with mean wind direction *north easterly*.

2.10 Khanpur

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 52%. Mean day temperature was 37.4°C while night temperature recorded as 18.4°C with 99.3hours bright sunshine duration. Wind speed recorded 2km/hr with wind direction *variable*.

2.11 Sakrand

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 45%. Mean day temperature was 38.7°C while night temperature recorded as 20.0°C with 111.2hours bright sunshine duration. Wind speed recorded 2.3km/hr with wind direction *northerly*.

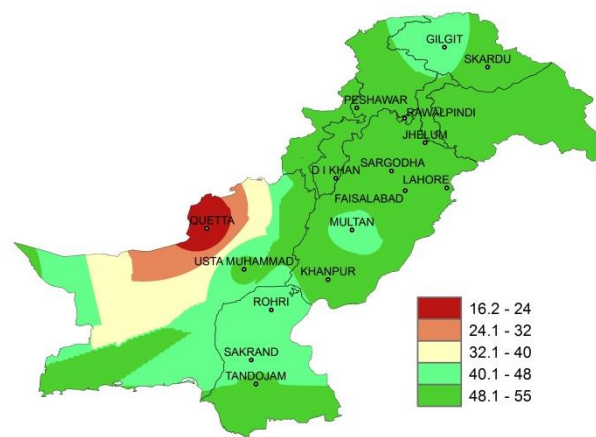


Figure.3: Relative Humidity in Percentage (%)

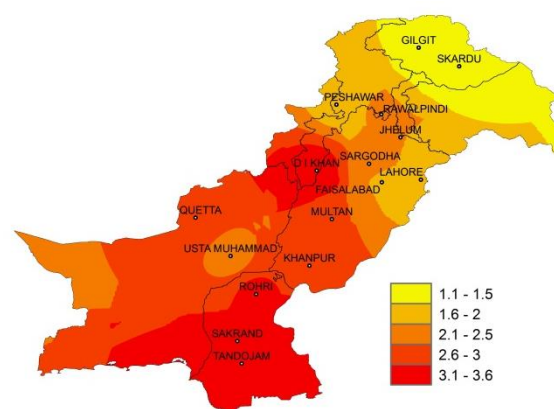


Figure.4: Reference Crop Evapotranspiration ETo (mm/day)

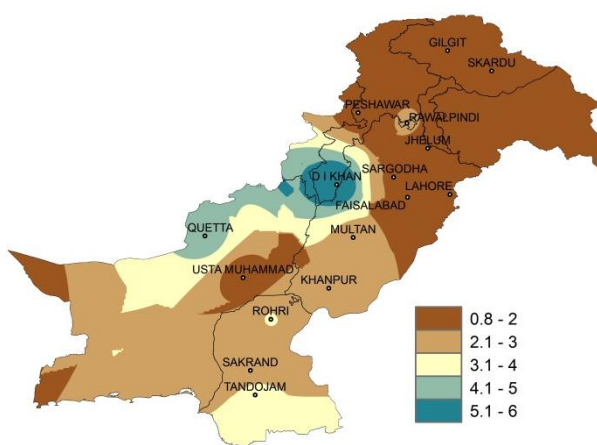


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 40%. Mean day temperature was 38.5°C while night temperature recorded as 21.2°C with 99.8hours bright sunshine duration. Wind speed recorded 3.0km/hr with wind direction *south easterly*.

2.13 D.I. Khan

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 53%. Mean day temperature was 35.9°C while night temperature recorded as 20.3°C with 90.3hours bright sunshine duration. Wind speed recorded as 6.2km/hr with mean wind direction *south easterly*.

2.14 Peshawar

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 52%. Mean day temperature was 33.3°C while night temperature recorded as 16.2°C with 66.2hours bright sunshine duration. Wind speed recorded as 1.4km/hr with mean wind direction *north easterly*.

2.15 Skardu

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 54%. Mean day temperature was 21.0°C while night temperature recorded as 3.0°C with 59.7hours bright sunshine duration. Wind speed recorded as 1.5km/hr with mean wind direction *easterly*.

2.16 Gilgit

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 44%. Mean day temperature was 25.5°C while night temperature recorded as 7.5°C with 64.3hours bright sunshine duration. Wind speed recorded as 1.7km/hr with mean wind direction *westerly*.

Ten Days Weather Advisory for Farmers **(23rd to 31st 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

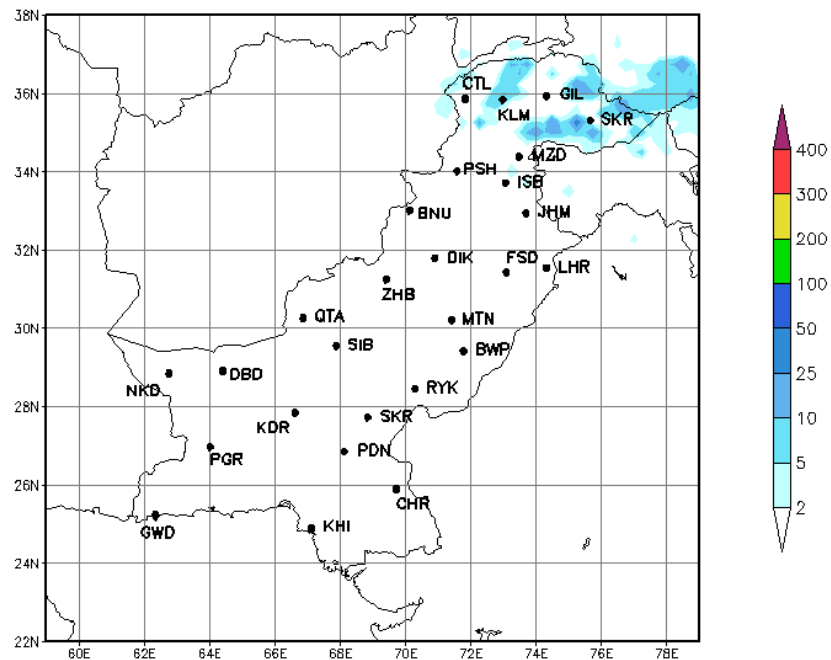
- ❖ **Punjab:** Dry weather is expected in the province during the current decade.
- ❖ **Khyber Pakhtunkhwa:** Light rainfall is expected at scattered places in upper parts of the province during the start of the decade.
- ❖ **Sindh:** Dry weather is expected in the province during the current decade.
- ❖ **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 at isolated places during the current decade.

3.4 Advisory for Farmer

- ❖ 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.
- ❖ Farmers are advised to take cultivate winter vegetables in time so that present soil moisture may fully be utilized.
- ❖ Farmers of cotton crop areas are advised to prepare field for incoming Rabi crops and complete sowing in time.

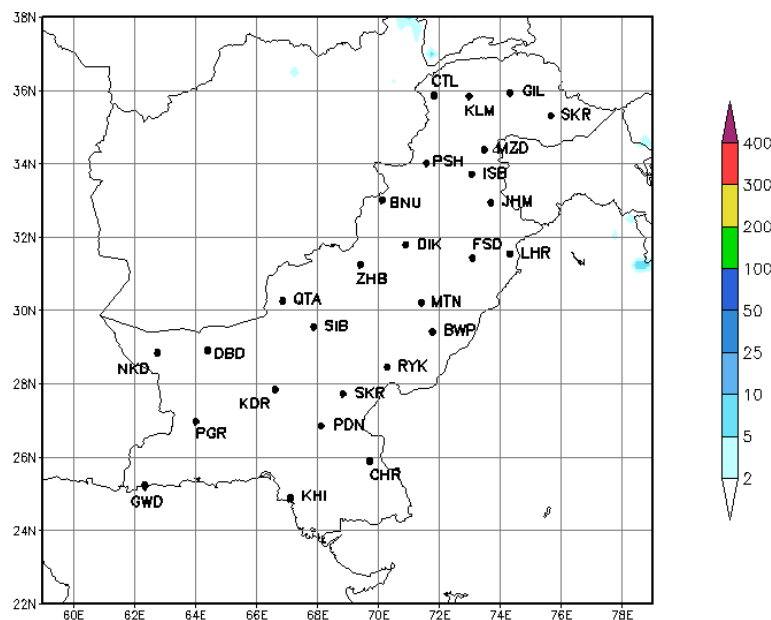
4.1 Precipitation Outlook (23rd to 25th October, 2017)

The forecast for the next three days (23rd to 25th) of the third 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, Kashmir and G.B.



4.2 Precipitation Outlook (26th to 31st October, 2017)

The outlook for the last seven days (26th to 31st) of the third decade of October 2017 shows that dry weather may prevail in the country.



Findings of AgMIP Pakistan, 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 سدّ باب (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)