

Decadal Agromet Bulletin of Pakistan



Highlights...

- ❖ Light to moderate rainfall reported from most of the agricultural plains of the country while light rainfall was reported from Balochistan during the last decade.
- ❖ Highest amount of rainfall recorded as 70.0 mm at Parachinar during the last decade.
- ❖ Highest maximum temperature recorded as 49.0°C at Sukkur during the last decade.
- ❖ Mainly dry and hot weather is expected in most parts of the country during the current decade; however light to moderate rainfall is expected in most of the parts of Punjab, KP, northern Baluchistan, GB, Kashmir.
- ❖ Measures may be taken to preserve the standing crops/orchids from the damaging impacts of extreme weather conditions like thunder/dust storm, gusty winds, hails etc in particular areas.
- ❖ Wheat crop is at final stages in northern parts of the country. Farmers are advised to complete their harvesting by keeping in view the weather forecast.
- ❖ The fields got fallow after the harvesting of wheat may be deeply ploughed and leave empty for a few weeks.

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

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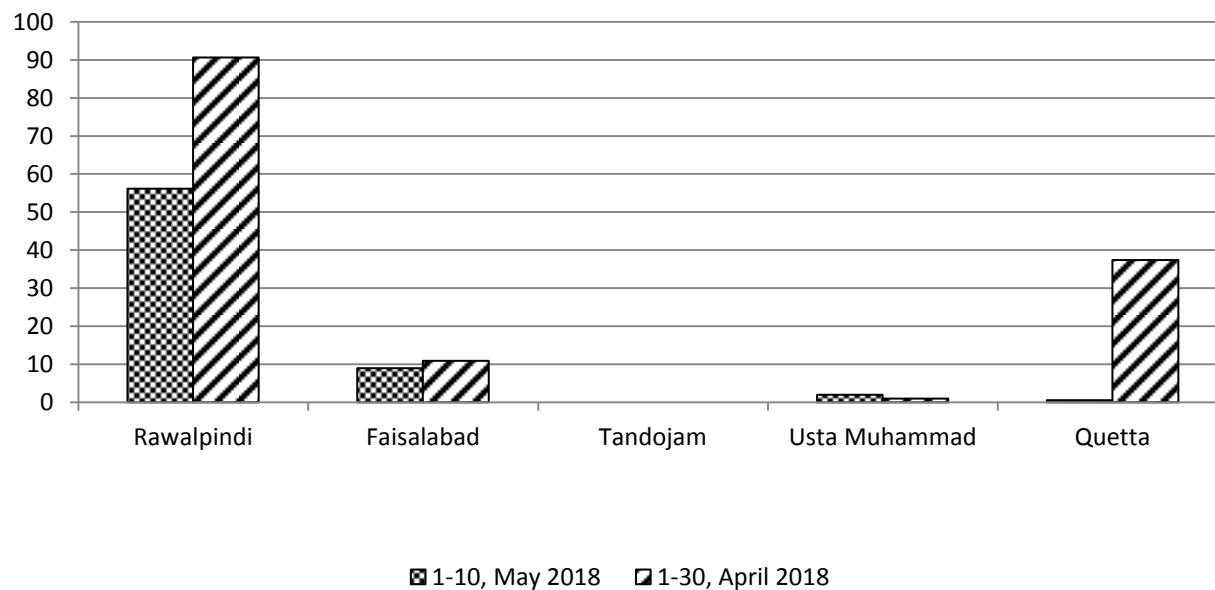
Meteorological Conditions during 1st Decade of May, 2018

| 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 | 1.0 | 56.2 | 55.2 | -4.3 | -1.5 | 24.6 | 25.6 | 24.8 | 23.9 | 24.4 | 23.8 | 23.2 | 58 | 60.2 | 3.4 | 4.1 |
| 2 | Faisalabad | 0.7 | 9.0 | 8.3 | -3.3 | 0.2 | 29.4 | 37.7 | 33.4 | 33.4 | 32.3 | 31.9 | 30.2 | 43 | 81.8 | 3.7 | 5.3 |
| 3 | Jhelum | 1.5 | 22.1 | 20.6 | -2.3 | -1.4 | 28.5 | 33.9 | 31.9 | 29.7 | 28.6 | 28.6 | *** | 41 | 81.5 | 4.8 | 5.6 |
| 4 | Lahore | 0.7 | 7.2 | 6.5 | -1.6 | -1.0 | 30.3 | 31.6 | 30.8 | 28.9 | 27.8 | *** | 27.1 | 44 | 67.5 | 1.3 | 4.3 |
| 5 | Sargodha | 0.5 | 13.8 | 13.3 | -3.1 | 0.4 | 30.1 | 35.9 | 33.2 | 30.2 | 29.4 | *** | 27.0 | 51 | 80.3 | 7.4 | 6.3 |
| 6 | Multan | 0.4 | 3.0 | 2.6 | -1.9 | 0.3 | 31.8 | *** | *** | *** | *** | *** | *** | 33 | 72.8 | 6.2 | 6.5 |
| 7 | Khanpur | 0.2 | 0.0 | -0.2 | 0.7 | 0.7 | 33.3 | *** | 35.6 | 35.2 | 35.2 | 34.6 | 32.4 | 34 | 61.5 | 5.4 | 6.3 |
| 8 | Tandojam | 0.0 | 0.0 | 0.0 | -0.1 | -0.3 | 32.3 | 42.0 | 37.7 | 34.4 | 33.0 | 32.3 | 30.4 | 48 | 92.2 | 11.7 | 8.5 |
| 9 | Sakrand☆ | 0.0 | 0.0 | 0.0 | 1.8 | 2.6 | 35.7 | 43.6 | *** | *** | *** | *** | 33.0 | 29 | 101.3 | 9.8 | 9.0 |
| 11 | Rohri | 0.0 | 6.0 | 6.0 | -0.1 | 0.5 | 35.6 | *** | *** | *** | *** | *** | *** | 33 | 79.8 | 1.7 | 5.2 |
| 12 | D.I Khan | 0.1 | 0.0 | -0.1 | -0.6 | 1.2 | 30.8 | 34.2 | 32.2 | 30.8 | 30.2 | 18.6 | *** | 48 | 84.3 | 13.0 | 8.0 |
| 13 | Peshawar | 0.9 | 16.0 | 15.1 | -1.6 | -0.9 | 26.9 | 29.6 | 28.9 | 25.8 | 25.0 | 24.4 | 23.9 | 54 | 62.6 | 3.5 | 4.5 |
| 14 | Usta .M | 0.1 | 2.0 | 1.9 | 1.7 | 1.7 | 36.6 | 44.4 | 38.6 | 37.0 | *** | *** | 35.1 | 33 | *** | 4.6 | 7.6 |
| 15 | Quetta | 0.3 | 0.6 | 0.3 | -1.0 | 3.2 | 22.7 | 29.7 | 27.8 | 24.3 | 23.4 | 23.4 | 20.4 | 29 | 83.5 | 6.4 | 5.7 |
| 16 | Skardu | 1.1 | 0.0 | -1.1 | -0.7 | -0.3 | 15.9 | *** | *** | *** | *** | *** | *** | 37 | 50.4 | 5.1 | 4.0 |
| 17 | Gilgit | 0.8 | 11.6 | 10.8 | -3.4 | 0.6 | 19.0 | *** | *** | *** | *** | *** | *** | 45 | 63.3 | 4.4 | 4.2 |

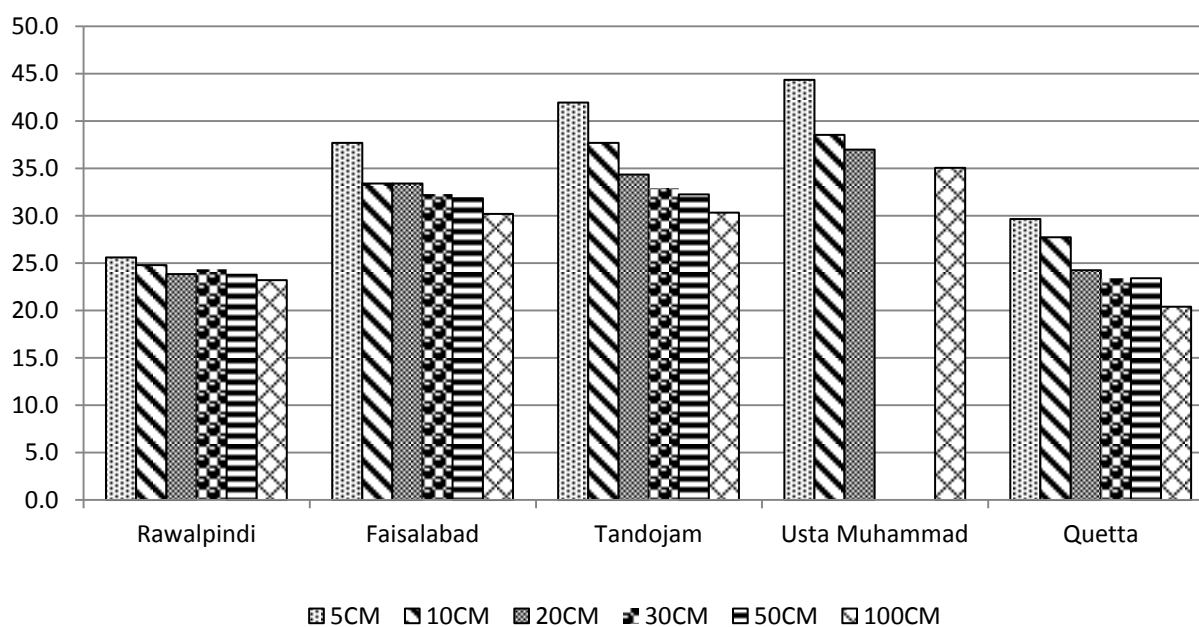
Table-1: Meteorological parameters for selected station of Pakistan. “Dep” in the table stands for difference from climatic normal, i.e. actual value minus normal. And “% Dep” is calculated by the formula; **Dep divided by Normal multiplied by 100**. Tmin & Tmax stands for minimum and maximum temperatures 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 May, 2018

Precipitation(mm)



Soil Temperature(°C)



Past Weather (1st to 10th May, 2018)

Light to moderate rainfall reported from most of the agricultural plains of the country while light rainfall was reported from Balochistan during the last decade.

1.1 Punjab

Light to moderate rainfall reported most of the agricultural plains of the Punjab. Chief amount of rainfall is received at Chakwal, Islamabad & Murree. Decadal maximum & minimum both dropped below normal by 2.3°C & 0.3°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 43%, 72.2hrs, 4.6km/hr and 5.5mm/day respectively.

1.2 Sindh

Light to moderate rainfall reported from few agricultural plains of Sindh. Chief amount of rainfall is received at Sukkur, Larkana & Dadu. Decadal maximum and minimum both raised above normal by 0.5°C & 0.9°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 37%, 91.1hrs, 7.7km/hr and 7.6mm/day respectively.

1.3 Khyber Pakhtunkhwa (KP)

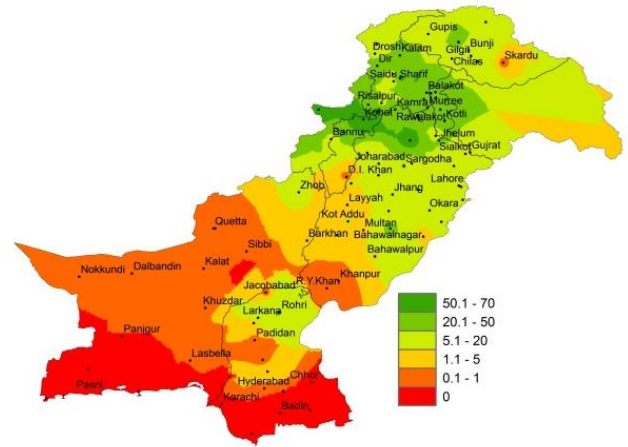
Light to moderate rainfall reported from most of the agricultural plains of KP. Chief amount of rainfall is received at Parachinar, Kohat & Cherat. Decadal maximum dropped below normal by 1.1°C & minimum raised above normal by 0.2°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 51%, 73.5hrs, 8.3km/hr and 6.3mm/day respectively.

1.4 Balochistan

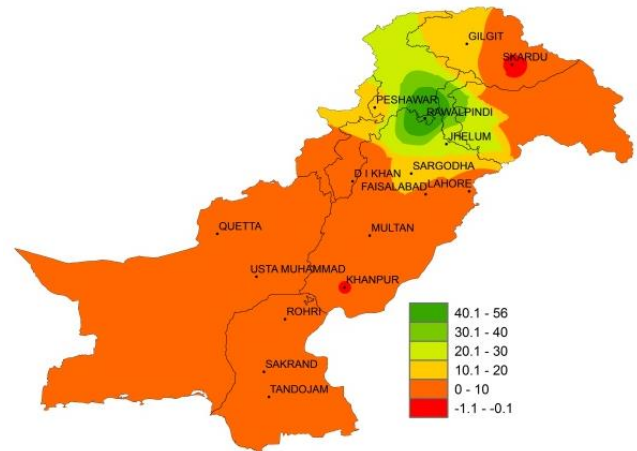
Light rainfall reported few of the plains of Balochistan. Chief amount of rainfall is received at Zhob, Barkhan & Khuzdar. Decadal maximum and minimum both raised above normal by 0.3°C & 2.5°C respectively, in province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 31%, 83.5hrs, 5.5km/hr and 6.7mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

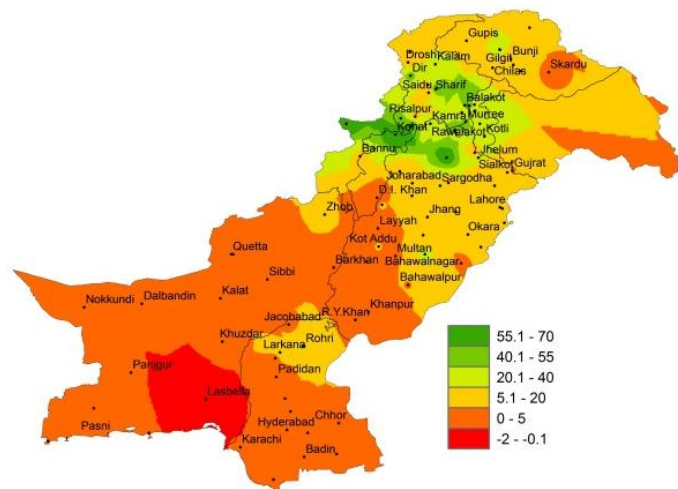
Light to moderate rainfall reported from most of the agricultural plains of G.B and Kashmir. Chief amount of rainfall is received at Muzaffarabad, Bagrote & Rawalakot. Decadal maximum dropped below normal by 2.1°C & minimum raised above normal by 0.2°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 41%, 56.9hrs, 4.8km/hr and 4.1mm/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** **(1st to 10th May, 2018)**

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

Rainfall reported as 56.2mm during the decade; however weather remained cloudy for 08 days during the decade. Average relative humidity recorded as 58%. Mean day temperature was 31.0°C while night temperature recorded as 18.1°C with 60.2hours bright sunshine duration. Wind speed recorded as 3.4km/hr with mean wind direction *easterly*.

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

Rainfall reported as 7.0mm during the decade; however weather remained cloudy for 07days during the decade. Average relative humidity recorded as 43%. Mean day temperature was 35.6°C while night temperature recorded as 23.1°C with 81.8hours bright sunshine duration. Wind speed recorded as 3.7km/hr with mean wind direction *easterly*.

Wheat: *Very good condition, Harvested on 30.04.2018.*

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

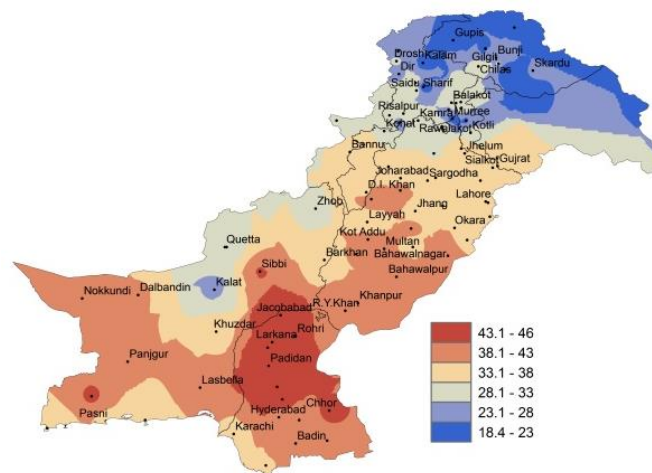
Dry weather reported during the decade; however weather remained cloudy for 02days during the decade. Average relative humidity recorded as 48%. Mean day temperature was 41.0°C while night temperature recorded as 23.5°C with 92.2hours bright sunshine duration. Wind speed recorded as 11.7km/h with mean wind direction *south westerly*.

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

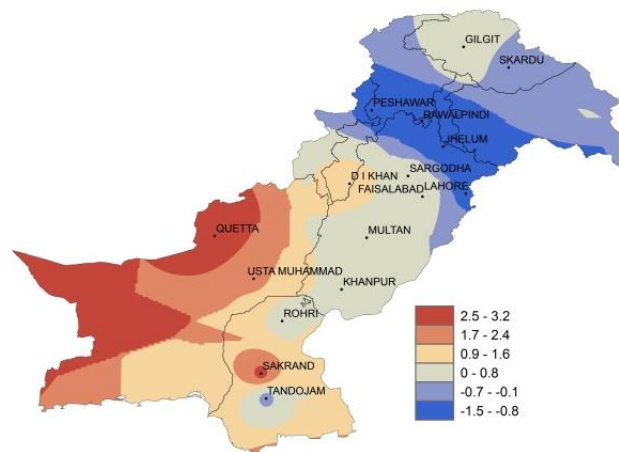
Rainfall reported as 2.0mm during the decade; however weather remained cloudy for 03days during the decade. Average relative humidity recorded as 33%. Mean day temperature was 45.8°C while night temperature recorded as 27.3°C. Wind speed recorded as 4.7km/h with mean wind direction *south easterly*.

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

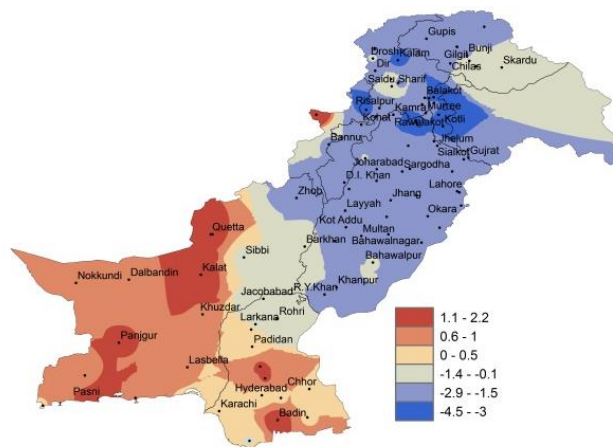
Rainfall reported as 0.6mm during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 29%. Mean day temperature was 28.8°C while night temperature recorded as 16.8°C with 83.5hours bright sunshine duration. Wind speed recorded as 6.4km/hr with 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: Minimum Temperature distribution during previous decade (°C)

2(b) Past Weather for Sub-Regional Agricultural Plains (1st to 10th May, 2018)

2.6 Jhelum

Rainfall reported as 22.1 during the decade; however weather remained cloudy for 10days during the decade. Average relative humidity recorded as 41%. Mean day temperature was 35.6°C while night temperature recorded as 21.3°C with 81.5hours bright sunshine duration. Wind speed recorded as 4.8km/hr with mean wind direction *south easterly*.

2.7 Lahore

Rainfall reported as 7.2mm during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 44%. Mean day temperature was 36.4°C while night temperature recorded as 24.2°C with 67.5hours bright sunshine duration. Wind speed recorded as 1.3km/hr with mean wind direction *south easterly*.

2.8 Sargodha

Rainfall reported as 13.8mm during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 51%. Mean day temperature was 36.0°C while night temperature recorded as 24.1°C with 80.3hours bright sunshine duration. Wind speed recorded 7.4km/hr with mean wind direction *variable*.

2.9 Multan

Rainfall reported as 3.0mm during the decade; however weather remained cloudy for 07days during the decade. Average relative humidity recorded as 33%. Mean day temperature was 38.4°C while night temperature recorded as 25.2°C with 72.8hours bright sunshine duration. Wind speed recorded 6.2km/hr with mean wind direction *northerly*.

2.10 Khanpur

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 05days during the decade. Average relative humidity recorded as 34%. Mean day temperature was 41.2°C while night temperature recorded as 25.3°C with 61.5hours bright sunshine duration. Wind speed recorded 5.4km/hr with mean wind direction *north easterly*.

2.11 Sakrand

Dry weather reported during the decade; however weather remained cloudy for 03days during the decade. Average relative humidity recorded as 29%. Mean day temperature was 44.3°C while night temperature recorded as 27.0°C with 101.3hours bright sunshine duration. Wind speed recorded 5.3km/hr with wind direction *south westerly*.

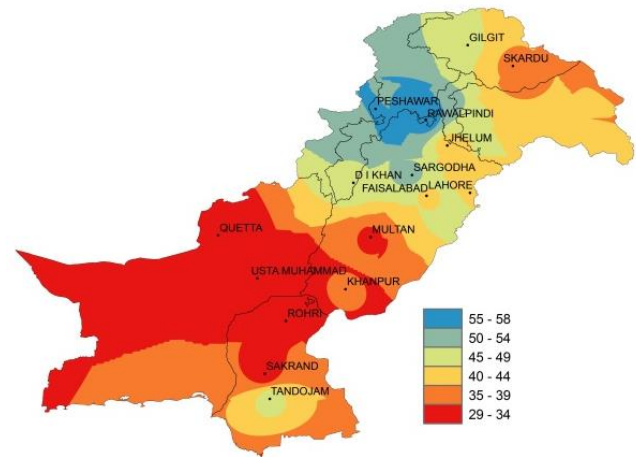


Figure.3: Relative Humidity in Percentage (%)

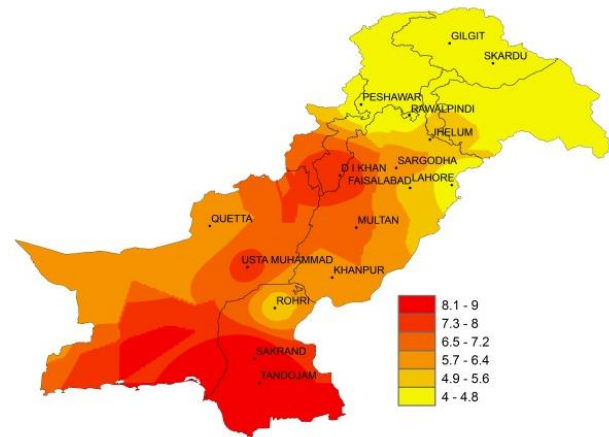


Figure.4: Reference Crop Evapotranspiration ETo (mm/day)

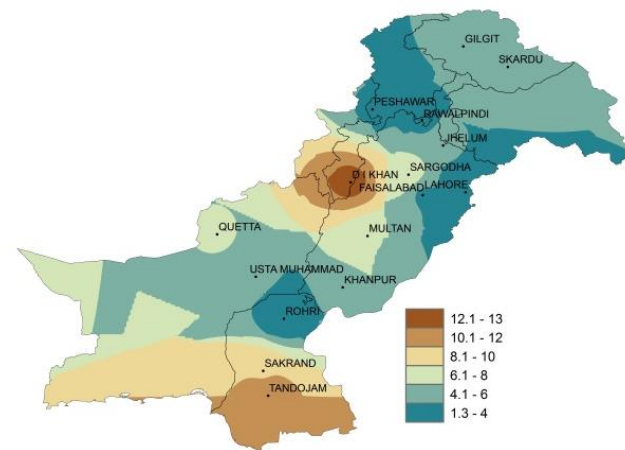


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Rainfall reported as 6.0mm during the decade; however weather remained cloudy for 02days during the decade. Average relative humidity recorded as 33%. Mean day temperature was 42.9°C while night temperature recorded as 28.2°C with 79.8hours bright sunshine duration. Wind speed recorded 1.7km/hr with wind direction *north easterly*.

2.13 D.I. Khan

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 06day during the decade. Average relative humidity recorded as 48%. Mean day temperature was 37.8°C while night temperature recorded as 23.7°C with 84.3hours bright sunshine duration. Wind speed recorded as 13.0km/hr with mean wind direction *variable*.

2.14 Peshawar

Rainfall reported as 16.0mm during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 54%. Mean day temperature was 33.2°C while night temperature recorded as 20.5°C with 62.6hours bright sunshine duration. Wind speed recorded as 3.5km/hr with mean wind direction *south easterly*.

2.15 Skardu

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 07days during the decade. Average relative humidity recorded as 37%. Mean day temperature was 23.3°C while night temperature recorded as 8.4°C with 50.4hours bright sunshine duration. Wind speed recorded as 5.1km/hr with mean wind direction *south south-westerly*.

2.16 Gilgit

Rainfall reported as 11.6 during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 45%. Mean day temperature was 26.4°C while night temperature recorded as 11.6°C with 63.3hours bright sunshine duration. Wind speed recorded as 4.4km/hr with mean wind direction *south easterly*.

Ten Days Weather Advisory for Farmers
(11th to 20th May, 2018)

3.1 Temperature Forecast

Night temperatures and day temperatures are likely to be slightly normal in most 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

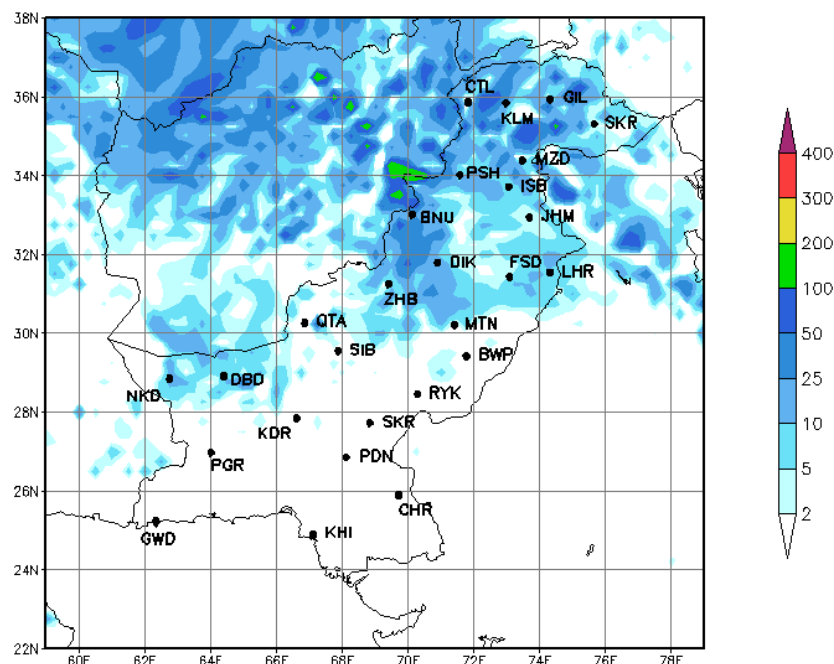
- ❖ **Punjab:** Partly hot and dry weather is expected in most parts while light to moderate rain-thunderstorm is expected at scattered places during the decade.
- ❖ **Khyber Pakhtunkhwa:** Light to moderate rain-thunderstorm is expected at most of the places of the province during the decade.
- ❖ **Sindh:** Hot and dry weather is expected during the decade.
- ❖ **Balochistan:** Hot and dry weather is expected in most parts while light rain-thunderstorm with gusty winds is expected at scattered places in Zhob, Quetta division during the decade.
- ❖ **Gilgit-Baltistan:** Light to moderate rain-thunderstorm with gusty winds is expected at isolated places during the decade.
- ❖ **Kashmir:** Light to moderate rain-thunderstorm is expected at most of the places in Kashmir and its adjoining areas during the decade.

3.4 Advisory for Farmers

- ❖ Measures may be taken to preserve the standing crops/orchids from the damaging impacts of extreme weather conditions like thunder/dust storm, gusty winds, hails etc in particular areas.
- ❖ Wheat crop is at final stages in northern parts of the country. Farmers are advised to complete their harvesting by keeping in view the weather forecast.
- ❖ The fields got fallow after the harvesting of wheat may be deeply ploughed and leave empty for a few weeks.
- ❖ The farmers of lower half may regularly irrigate their Kharif crops by keeping in view the ongoing hot weather conditions.

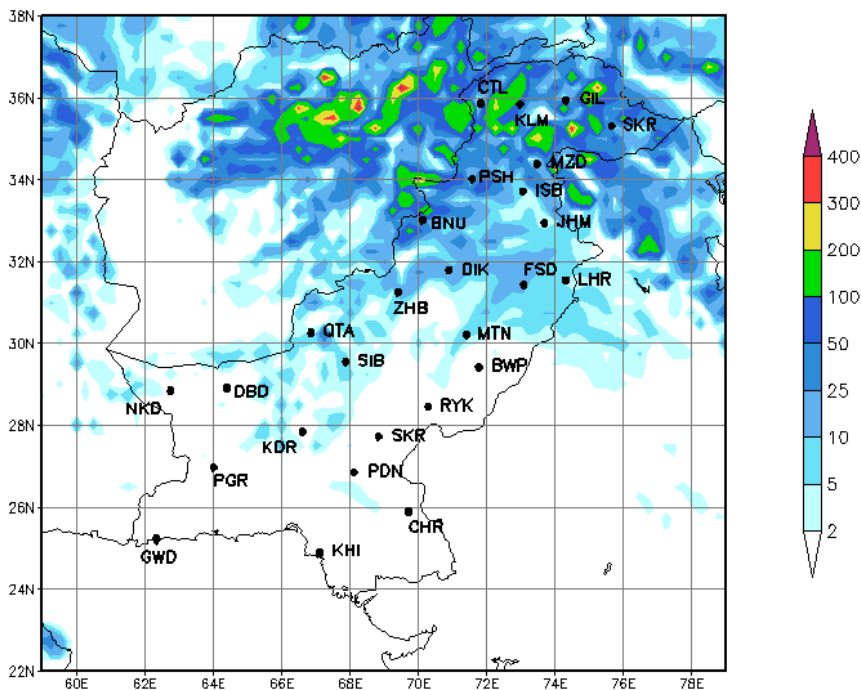
4.1 Precipitation Outlook (11th to 13th May, 2018)

The forecast for the first three days (11th to 20th) of the second decade of May, 2018 shows that mostly dry weather is expected in most parts of the country. However light to moderate rainfall is expected at scattered places in Upper Punjab, KP, western Baluchistan, G.B and Kashmir.



4.2 Precipitation Outlook (14th to 20th May, 2018)

The outlook for the last seven days (14th to 20th) of the second decade of May, 2018 shows that light to moderate rainfall is expected at most of the places in KP, Upper Punjab, northern Baluchistan, Kashmir and GB. While dry weather may prevail in rest parts 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)