

Decadal Agromet Bulletin of Pakistan



Highlights...

- ❖ Dry weather reported from the agriculture plains of the country during the decade.
- ❖ Highest amount of rainfall recorded as 3.0 mm at Kakul during the last decade.
- ❖ Lowest minimum temperature recorded as -6.0°C at Skardu during the last decade.
- ❖ Rain / snow over hills is expected in upper parts of the country while mostly dry and cold weather may prevail over rest of country.
- ❖ Farmers are advised to schedule the picking of cotton after 10am in the morning to get the maximum yield.

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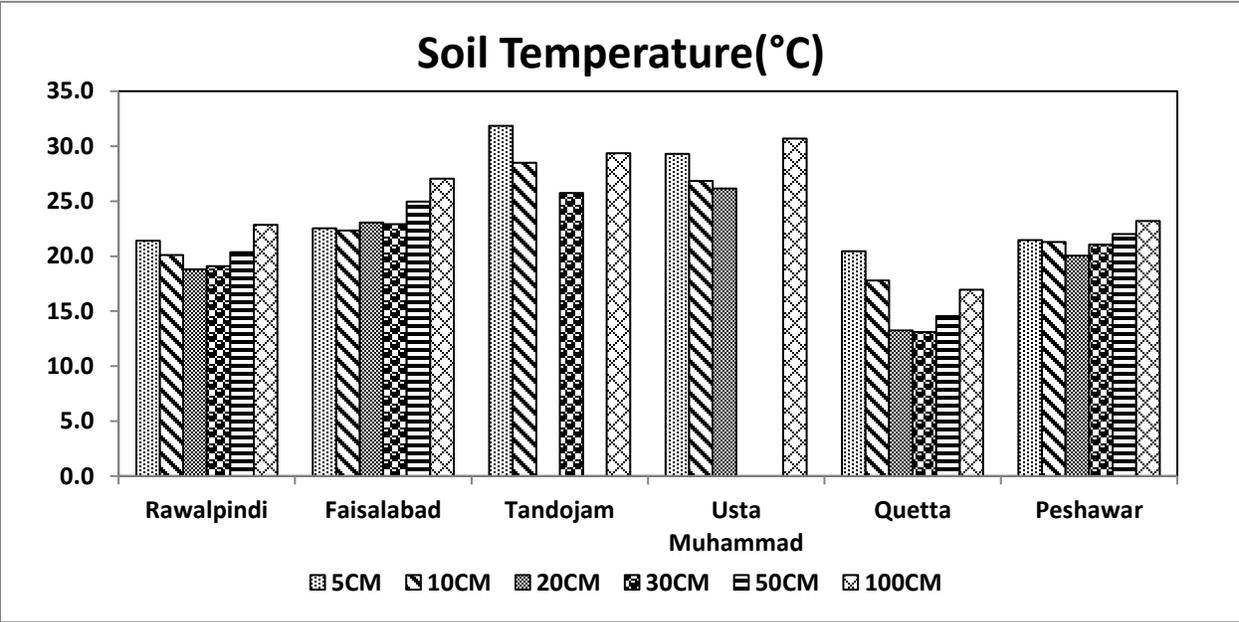
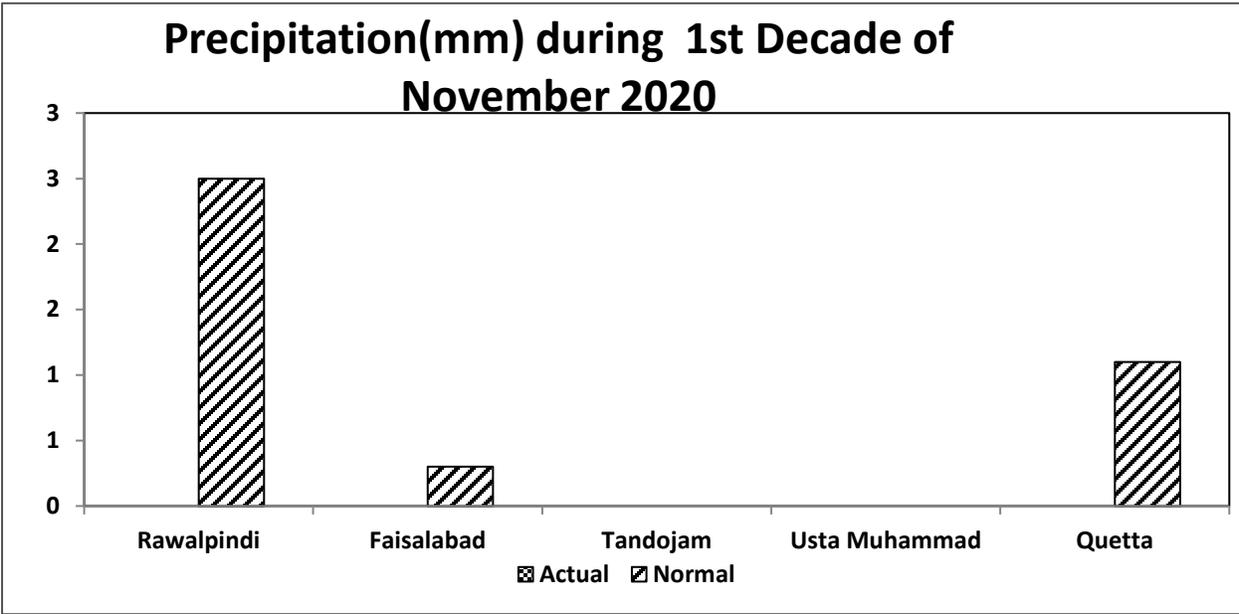
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Meteorological Conditions during 1st Decade of November, 2020

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	Tmx Dep	Tmin Dep	Mean	5cm	10cm	20cm	30cm	50cm	100cm				
1	Rawalpindi	2.5	0.0	-2.5	1.5	-1.6	19.1	21.4	20.1	18.8	19.1	20.4	22.9	51	84.0	1.2	1.8
2	Faisalabad	0.3	0.0	-0.3	0.9	-2.0	21.1	22.5	22.3	23.1	22.9	25.0	27.1	53	72.9	1.1	2.0
3	Jhelum	1.1	0.0	-1.1	0.8	-2.9	20.6	22.4	21.5	20.9	21.2	22.6	***	56	87.0	0.6	1.9
4	Lahore	0.0	0.0	0.0	0.5	-3.1	21.8	22.0	22.0	21.9	21.9	***	23.9	54	61.8	0.9	1.8
5	Sargodha	0.5	0.0	-0.5	0.9	-0.9	22.2	25.8	24.7	23.5	23.9	***	26.2	56	67.7	0.2	1.8
6	Multan	0.0	0.0	0.0	-0.5	-0.6	22.3	***	***	***	***	***	***	47	74.4	2.8	2.7
7	Khanpur	0.0	0.0	0.0	0.5	-2.7	22.6	***	24.2	24.7	25.6	26.6	28.6	49	94.4	2.0	2.9
8	Tandojam	0.0	0.0	0.0	-0.8	-2.5	23.6	31.9	28.5	***	25.8	***	29.4	48	80.9	2.0	3.0
9	Sakrand ☆	0.0	0.0	0.0	0.2	-2.7	23.4	38.1	***	***	***	***	31.1	45	94.1	1.5	2.8
11	Rohri ☆	0.0	0.0	0.0	-3.1	-2.5	23.0	***	***	***	***	***	***	13	97.2	2.0	2.9
12	D.I Khan	0.5	0.0	-0.5	1.0	-2.6	21.0	***	22.0	***	***	13.8	***	53	70.9	1.4	2.1
13	Peshawar	4.3	0.0	-4.3	2.1	-4.3	19.0	21.5	21.3	20.1	21.1	22.0	23.2	58	69.3	1.0	1.7
14	Usta M.	0.0	0.0	0.0	0.6	-4.6	22.9	29.3	26.9	26.2	***	***	30.7	44	***	0.3	2.1
15	Quetta	1.1	0.0	-1.1	-0.9	-0.2	12.9	20.5	17.8	13.3	13.1	14.6	17.0	19	98.4	4.0	2.8
16	Skardu	1.5	0.0	-1.5	-2.3	-3.2	5.6	***	***	***	***	***	***	56	53.8	0.0	1.0
17	Gilgit	1.5	0.0	-1.5	0.4	-2.2	11.4	***	***	***	***	***	***	46	77.4	1.0	1.4

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; $\text{Dep} \div \text{Normal} \times 100$. 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, 2020



Past Weather (1st to 10th November, 2020)

Mostly dry weather reported from the agriculture plains of the country during the decade.

1.1 Punjab

Dry weather reported from the agricultural plains of the province. Decadal maximum rose above normal by 0.7°C & minimum dropped below normal by 2.0°C in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 52%, 77.5 hrs, 1.3 km/hr and 2.1 mm/day respectively.

1.2 Sindh

Dry weather reported from most of the agriculture plains of the province. Decadal maximum & minimum dropped below normal by 1.2°C & 2.0°C respectively in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 35%, 90.7 hrs, 1.8 km/hr and 2.9 mm/day respectively.

1.3 Khyber Pakhtunkhwa

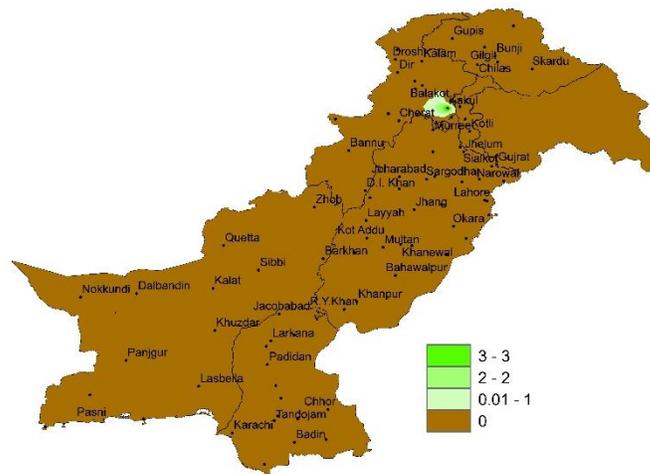
Light amount of rainfall reported from a single station in the agricultural plains of the upper half of province. Highest rainfall reported from Kakul. Decadal maximum rose above normal by 1.6°C & minimum dropped below normal by 3.5°C in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 56%, 70.1 hrs, 1.2 km/hr and 1.9 mm/day respectively.

1.4 Baluchistan

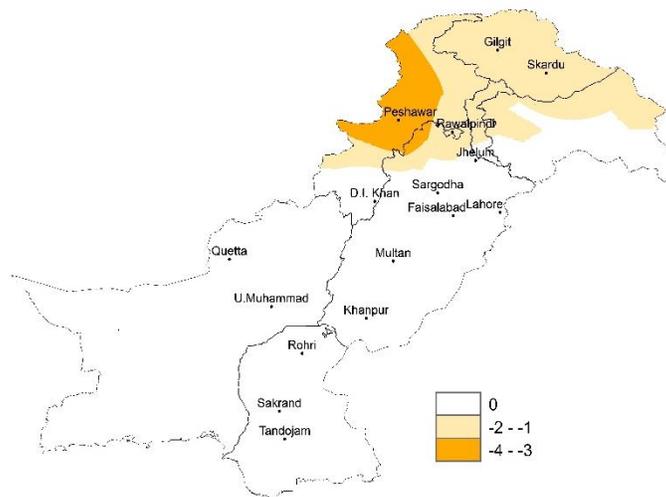
Dry weather reported from most of the agriculture plains of the province. Decadal maximum & minimum dropped below normal by 0.2°C & 2.4°C respectively in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 31%, 98.4 hrs, 2.2 km/hr and 2.5 mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

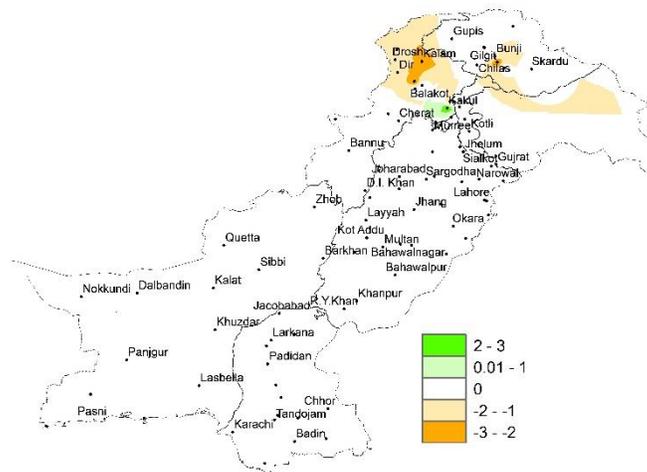
Trace amount of rainfall reported from a few stations in Gilgit-Baltistan & Azad Kashmir. Decadal maximum & minimum dropped below normal by 1.0°C & 2.7°C respectively in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 51%, 65.6 hrs, 0.5 km/hr and 1.2 mm/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)

(a) **Past Weather for Major Agricultural Plains**
(1st to 10th November, 2020)

2.1 RAMC, Rawalpindi (Potohar region)

Dry weather reported during the decade; however, weather remained clear during the decade. Average relative humidity recorded as 51%. Mean day temperature was 29.3°C while night temperature recorded as 8.9°C with 84.9 hours bright sunshine duration. Wind speed recorded as 1.2 km/hr with mean wind direction South westerly.

2.2 RAMC, Faisalabad (Central Punjab)

Dry weather reported during the decade; however clear skies observed during the decade. Average relative humidity recorded as 53%. Mean day temperature was 30.7°C while night temperature recorded as 11.5°C with 73 hours bright sunshine duration. Wind speed recorded as 1.1 km/hr with mean wind direction south westerly.
Cotton: V.Good, Maturity stage completed.

2.3 RAMC, Tandojam (Lower Sindh)

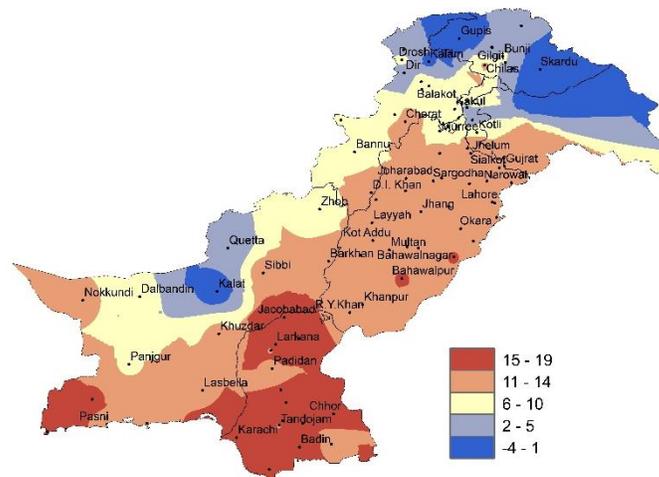
Dry weather reported during the decade; however clear skies observed during the decade. Average relative humidity recorded as 48%. Mean day temperature was 33.3°C while night temperature recorded as 13.9°C with 80.9 hours bright sunshine duration. Mean wind direction north easterly.
Wheat (TD-01): cultivated.

2.4 RAMC, Usta Muhammad (Eastern Baluchistan)

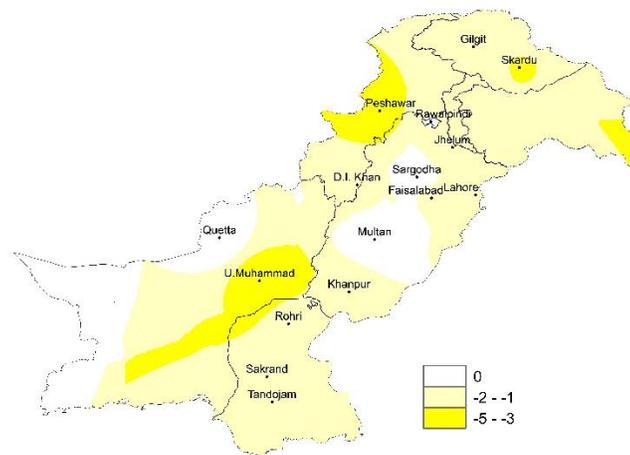
Dry weather reported during the decade; however clear skies observed during the decade. Average relative humidity recorded as 44%. Mean day temperature was 32.5°C while night temperature recorded as 13.3°C & Wind speed recorded as 0.3 km/h with mean wind direction *south easterly*.
Rice: Good, wax maturity stage and crop irrigated.

2.5 RAMC, Quetta (Northern Baluchistan)

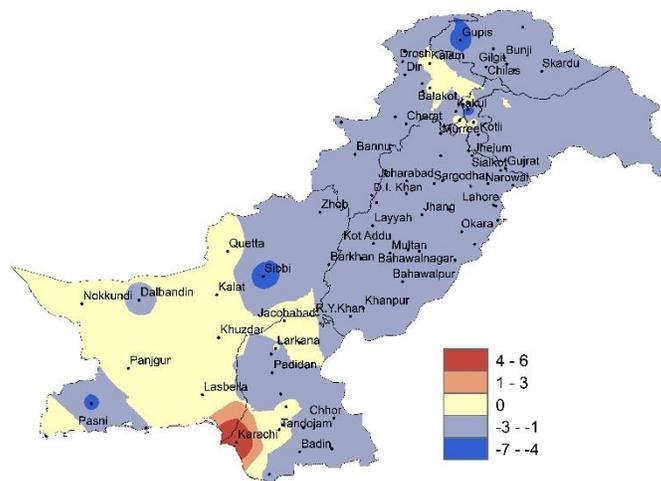
Dry weather reported during the decade; however clear skies observed during the decade. Average relative humidity recorded as 18.6%. Mean day temperature was 21.5°C while night temperature recorded as 4.3°C with 98.4 hours bright sunshine duration. Wind speed recorded as 4.0 km/hr with mean wind direction *north easterly*.



I. Actual min-temp



II. Departure of min-temp from Normal



III. Departure of min-temp from Previous Decade

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

2(b) Past Weather for Sub-Regional Agricultural Plains (1st to 10th November, 2020)

2.6 Jhelum

Dry weather reported during the decade; however, weather remained clear during the decade. Average relative humidity recorded as 56%. Mean day temperature was 30.4°C while night temperature recorded as 10.8C with 87.0 hours bright sunshine duration. Wind speed recorded as 0.6 km/hr with mean wind direction westerly.

2.7 Lahore

Dry weather reported during the decade; however, weather remained cloudy for 1 day during the decade. Average relative humidity recorded as 54%. Mean day temperature was 29.8°C while night temperature recorded as 13.8°C with 61.8 hours bright sunshine duration. Wind speed recorded as 0.9 km/hr with no mean wind direction westerly.

2.8 Multan

Dry weather reported during the decade; however, weather remained clear during the decade. Average relative humidity recorded as 47%. Mean day temperature was 30.9°C while night temperature recorded as 14.1 °C with 74.4 hours bright sunshine duration. Wind speed recorded 2.8 km/hr with mean wind direction *northerly*.

2.8 Khanpur

Dry weather reported during the decade; however, weather remained clear during the decade. Average relative humidity recorded as 52%. Mean day temperature was 32.7°C while night temperature recorded as 12.5°C with 94.4 hours bright sunshine duration. Wind mean direction remained *South westerly*.

2.9 Sakrand

Dry weather observed during the decade; however, weather remained clear during the decade. Average humidity recorded as 45%. Mean day temperature was 33.3°C while night temperature recorded as 13.5°C with 94.1 hours bright sunshine duration. Wind speed recorded 1.5 km/hr with wind direction *Northerly*.

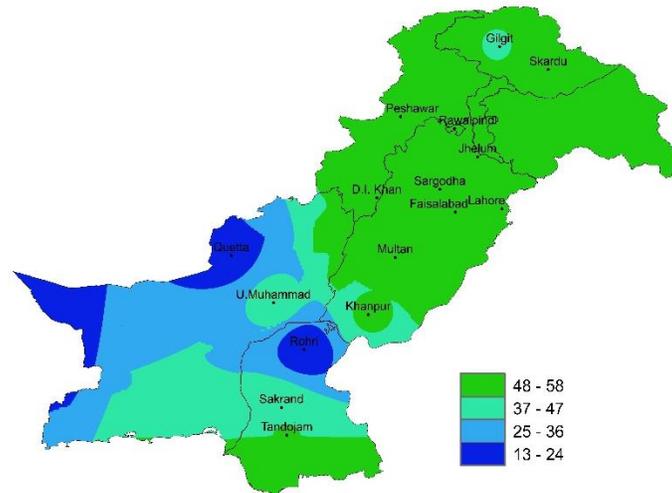


Figure.3: Relative Humidity in Percentage (%)

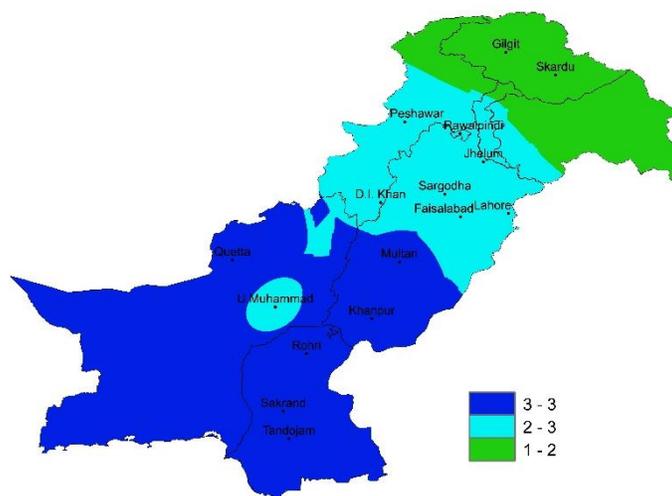


Figure.4: Reference Crop Evapotranspiration ET0 (mm/day)

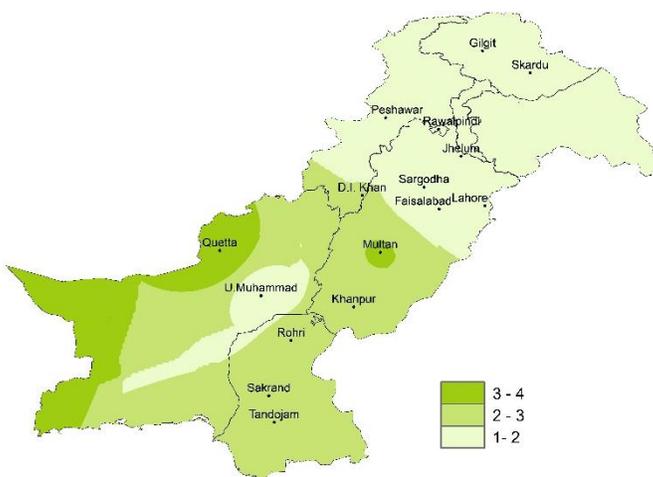


Figure 5: Wind Speed in kilometer per hour (km/h)

2.10 Rohri

Dry weather reported during the decade; however, weather remained cloudy for 01 day during the decade. Average relative humidity recorded as 40%. Mean day temperature was 30.0°C while night temperature recorded as 15.9°C with 97.2 hours bright sunshine duration. Wind speed recorded as 2.0 km/hr with mean wind direction *North easterly*.

2.11 D.I. Khan

Dry weather observed during the decade; however, weather remained clear during the decade. Average relative humidity recorded as 53%. Mean day temperature was 31.0°C while night temperature recorded as 11.3°C with 70.3 hours bright sunshine duration. Wind speed recorded as 1.4km/hr with mean wind direction *easterly*.

2.12 Peshawar

Dry weather reported during the decade; however, weather remained cloudy for 03 days during the decade. Average relative humidity recorded as 58%. Mean day temperature was 29.0°C while night temperature recorded as 8.9°C with 69.3 hours bright sunshine duration. Wind speed recorded as 1.0 km/hr with mean wind direction *North easterly*.

2.13 Gilgit

Dry weather observed during the decade; however, weather remained cloudy for 04 days during the decade. Average relative humidity recorded as 46%. Mean day temperature was 23.0 °C while night temperature recorded as -0.2 °C with 77.4 hours bright sunshine duration. Wind speed recorded as 1.0 km/hr with mean wind direction *South easterly*.

2.14 Skardu

Dry weather observed during the decade; however, weather remained cloudy for 02 days during the decade. Average relative humidity recorded as 56%. Mean day temperature was 15.0°C while night temperature recorded as 3.9°C with 16.0 hours bright sunshine duration. Wind speed recorded as 1.3 km/hr with mean wind direction *south easterly*.

Ten Days Weather Advisory for Farmers
(11th to 20th November, 2020)

3.1 Temperature Forecast

Day time temperatures are likely to be below normal whereas night time temperatures are likely to be normal in most of the agricultural plains of the country during the decade.

3.2 Wind Forecast

Generally, normal wind pattern may prevail in most of the agricultural plains of the country.

3.3 Rain Forecast

- ❖ **Punjab:** Isolated rain-thunderstorm is expected in the first half of the decade. Mostly cold and dry weather is expected during the second half of decade.
- ❖ **Khyber Pakhtunkhwa:** Isolated rain-thunderstorm is expected in the first half of the decade. Mostly cold and dry weather is expected during the second half of decade.
- ❖ **Sindh:** Mostly cold and dry weather is expected during the decade.
- ❖ **Baluchistan:** Mainly cold and dry weather is expected in most parts of the province.
- ❖ **Gilgit-Baltistan:** Rain / snow fall is expected in first half while mostly cloudy and humid weather is expected during the last half of decade.
- ❖ **Kashmir:** Rain / snow fall is expected in first half while mostly cloudy and humid weather is expected during the last half of decade.

3.4 Advisory for Farmers

- ❖ Farmers are advised to schedule the picking of cotton after 10am in the morning to get the maximum yield.
- ❖ Use proper precautions during picking of cotton because the cost of good and clean quality cotton is high than that of the filthy one.
- ❖ 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.

Findings of AgMIP Pakn, 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)