

Decadal Agromet Bulletin of Pakistan



Highlights....

- ❖ Light rainfall reported from few parts of parts of the K.P however trace (not measurable) rainfall reported from few parts of G.B and Kashmir. Dry weather reported from rest parts of the country during the last decade.
- ❖ Highest amount of rainfall recorded as 13.0 mm at Kalam during the last decade.
- ❖ Lowest minimum temperature recorded as -10.3°C at Skardu during the last decade.
- ❖ Foggy conditions persisted in the plain areas of upper Sindh and Punjab.
- ❖ Mainly cold and dry weather is expected in most parts of the country during the current decade, however light to moderate rainfall with snowfall over hills is expected in particular parts of upper KP, north western Balochistan, G.B & Kashmir.
- ❖ Fog may be increased in the central parts of the country due to dry weather.
- ❖ Farmers are advised to schedule the irrigation plans in accordance with the expected weather, mentioned during the decade.
- ❖ Measures may be taken to preserve the crops/nurseries/orchids from the damaging impacts of extreme weather conditions.

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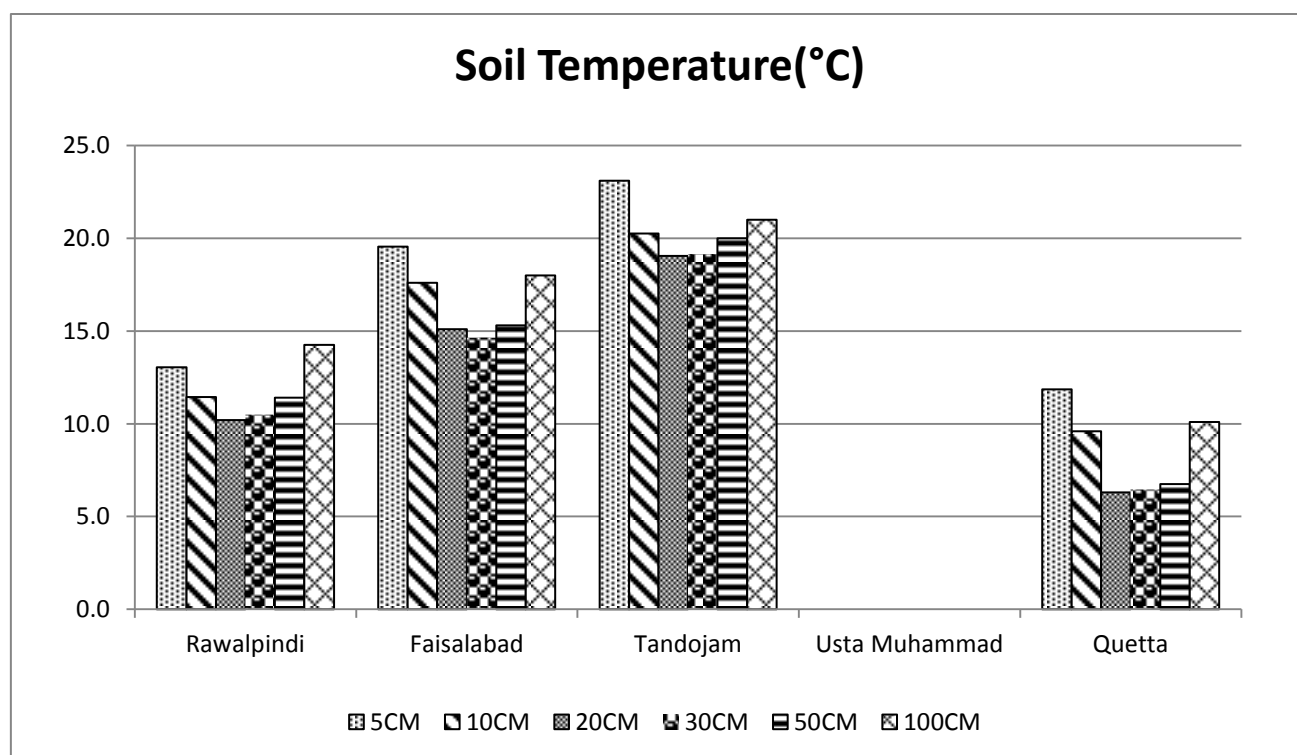
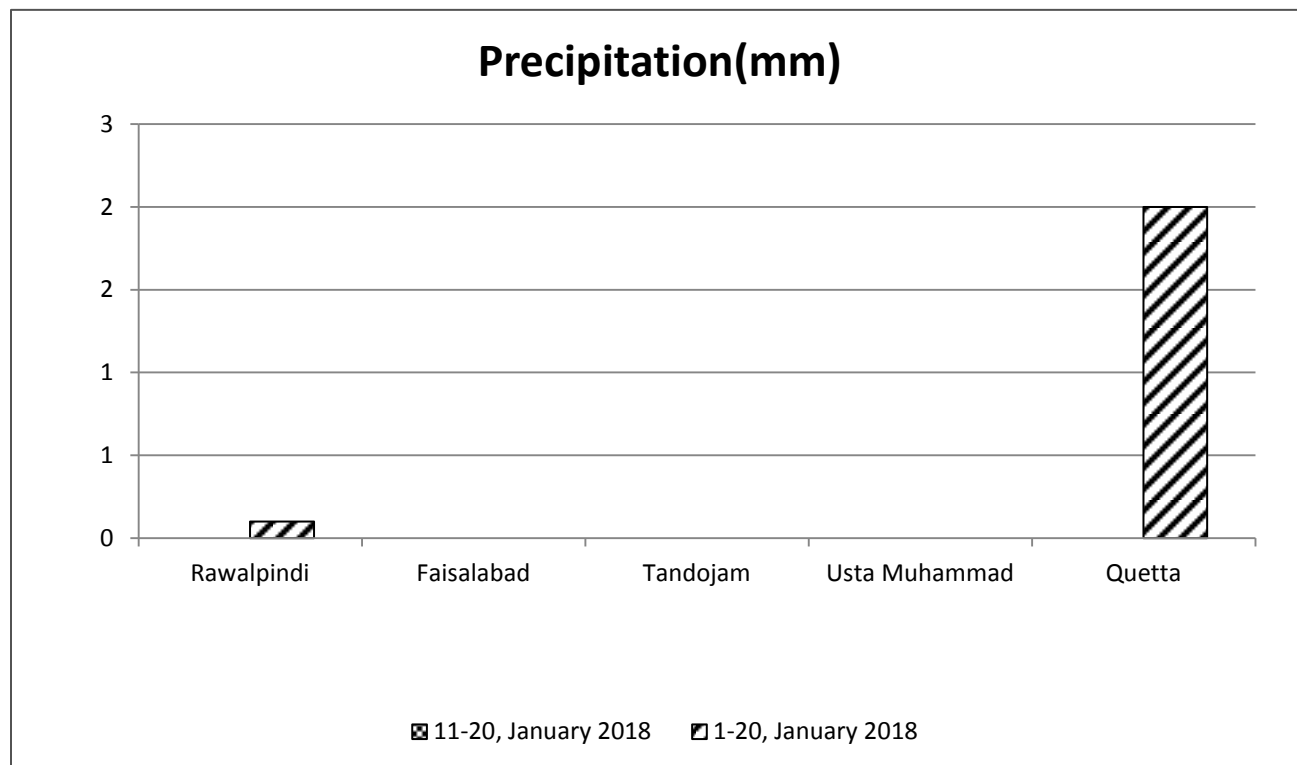
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Meteorological Conditions during 2nd Decade of January, 2018

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	1.1	0.0	-1.1	4.0	-0.9	12.5	13.1	11.5	10.2	10.5	11.4	14.3	57	70.2	2.4	1.6
2	Faisalabad	0.3	0.0	-0.3	5.7	-0.4	14.2	19.6	17.6	15.1	14.7	15.3	18.0	53	78.2	1.8	1.6
3	Jhelum	1.4	0.0	-1.4	5.4	-2.3	13.9	15.1	13.7	12.8	13.0	14.4	***	49	82.5	2.6	1.7
4	Lahore	0.3	0.0	-0.3	4.3	0.6	15.4	15.2	14.0	13.8	13.5	***	17.3	61	77.0	0.5	1.3
5	Sargodha	0.2	0.0	-0.2	5.7	1.4	15.6	18.9	17.1	15.5	15.9	***	18.5	59	73.5	0.9	1.4
6	Multan	0.2	0.0	-0.2	3.9	1.1	15.3	***	***	***	***	***	***	54	81.0	2.3	1.8
7	Khanpur	1.0	0.0	-1.0	5.8	-0.1	15.8	***	15.3	15.8	16.3	17.3	19.3	52	85.8	1.8	1.9
8	Tandojam	0.0	0.0	0.0	1.6	0.8	17.7	23.1	20.3	19.1	19.2	20.0	21.0	52	79.3	4.4	2.8
9	Sakrand☆	0.4	0.0	-0.4	6.6	3.6	17.8	22.4	***	***	***	***	23.6	51	90.4	2.7	2.3
11	Rohri	0.6	0.0	-0.6	3.8	-0.4	17.2	***	***	***	***	***	***	51	95.7	0.5	1.6
12	D.I Khan	0.1	0.0	-0.1	6.5	0.8	15.2	16.3	14.8	14.4	15.1	5.4	19.1	53	77.8	6.3	2.7
13	Peshawar	1.6	0.0	-1.6	4.0	-2.1	12.7	13.6	12.5	10.7	11.7	13.3	15.5	54	63.4	1.1	1.2
14	Usta .M	0.1	0.0	-0.1	3.9	-1.6	16.2	***	***	***	***	***	***	49	***	1.2	1.7
15	Quetta	0.9	0.0	-0.9	2.7	0.5	7.0	11.9	9.6	6.3	6.5	6.8	10.1	26	97.0	5.1	2.2
16	Skardu	1.5	0.0	-1.5	2.6	0.1	-0.3	***	***	***	***	***	***	68	32.5	0.7	0.7
17	Gilgit	0.3	0.0	-0.3	1.7	-2.7	3.7	***	***	***	***	***	***	51	37.9	1.2	0.8

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 January, 2018



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

Light rainfall reported from few parts of parts of the K.P however trace (not measurable) rainfall reported from few parts of G.B and Kashmir. Dry weather reported from rest parts of the country during the last decade.

1.1 Punjab

Dry weather reported from agricultural plains of Punjab. Decadal maximum raised above normal by 5.0°C & minimum departure dropped below normal by 0.1°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 55%, 78.3hrs, 1.8km/hr and 1.6mm/day respectively.

1.1 Sindh

Dry weather reported from agricultural plains of Sindh. Decadal maximum & minimum departure both raised above normal by 4.0°C & 1.3°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 51%, 88.5hrs, 2.5km/hr and 2.2mm/day respectively.

1.2 Khyber Pakhtunkhwa (KP)

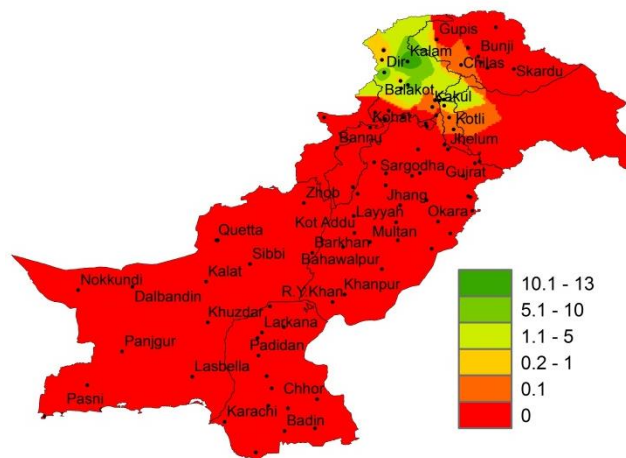
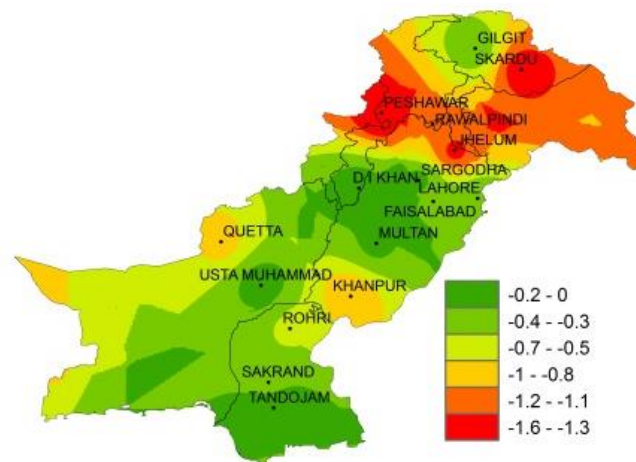
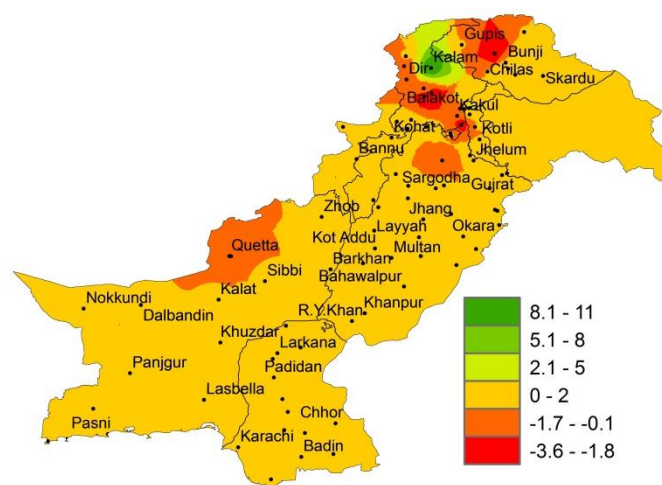
Light rainfall reported from agricultural plains of KP. Chief amount of rainfall is received at Kalam, Malam Jabba & Dir. Decadal maximum raised above normal by 5.3°C & minimum departure dropped below normal by 0.6°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 54%, 70.6hrs, 3.7km/hr and 2.0mm/day respectively.

1.3 Balochistan

Dry weather reported from agricultural plains of Balochistan. Decadal maximum raised above normal by 3.3°C & minimum departure dropped below normal by 0.6°C, in province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 38%, 97.0hrs, 3.2km/hr and 2.0mm/day respectively.

1.4 Gilgit-Baltistan and Azad Jammu & Kashmir

Rainfall reported as Trace (not measureable) from few places of G.B & Kashmir. Chief amount of rainfall is received at Chilas & Rawalakot. Decadal maximum raised above normal by 2.2°C & minimum departure dropped below normal by 1.3°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 60%, 35.2hrs, 1.0km/hr and 0.8mm/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 January, 2018)**

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

Dry weather reported during the decade; however weather remained cloudy for 02days during the decade. Average relative humidity recorded as 57%. Mean day temperature was 22.8°C while night temperature recorded as 2.1°C with 70.2hours bright sunshine duration. Wind speed recorded as 2.4km/hr with mean wind direction *westerly*.

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

Dry weather reported during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 53%. Mean day temperature was 24.1°C while night temperature recorded as 4.3°C with 78.2hours bright sunshine duration. Wind speed recorded as 1.8km/hr with mean wind direction *south westerly*.

Wheat: *Very good condition, tillering stage completed.*

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 52%. Mean day temperature was 26.1°C while night temperature recorded as 9.3°C with 79.3hours bright sunshine duration. Wind speed recorded as 4.4km/h with mean wind direction *northerly*.

Wheat (Sindh): *Good condition, heading stage.*

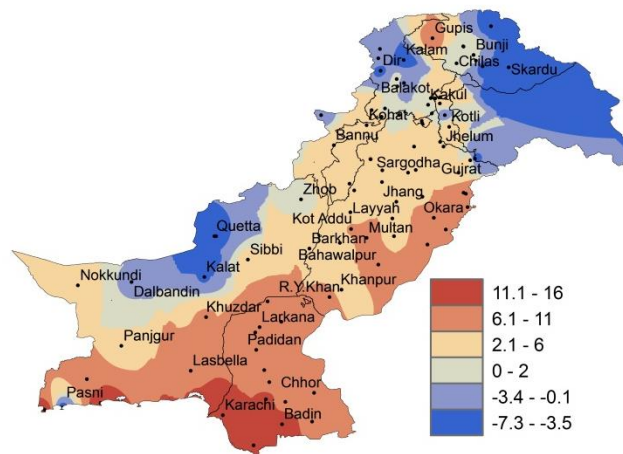
2.4 **RAMC, Usta Muhammad (Eastern Balochistan)**

Dry weather reported during the decade; however weather remained cloudy for 02days during the decade. Average relative humidity recorded as 49%. Mean day temperature was 25.3°C while night temperature recorded as 7.1°C. Wind speed recorded as 1.2km/h with mean wind direction *north westerly*.

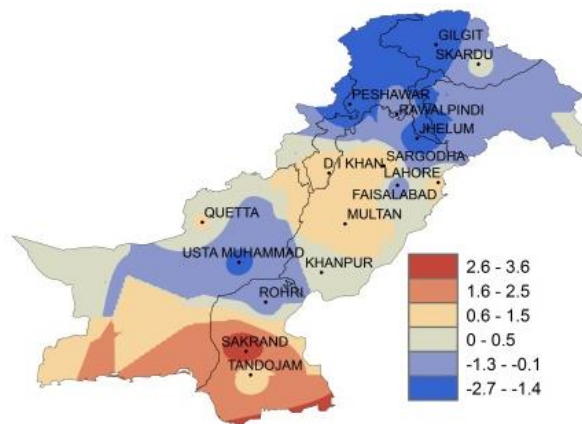
Wheat: *Good condition, tillering stage.*

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

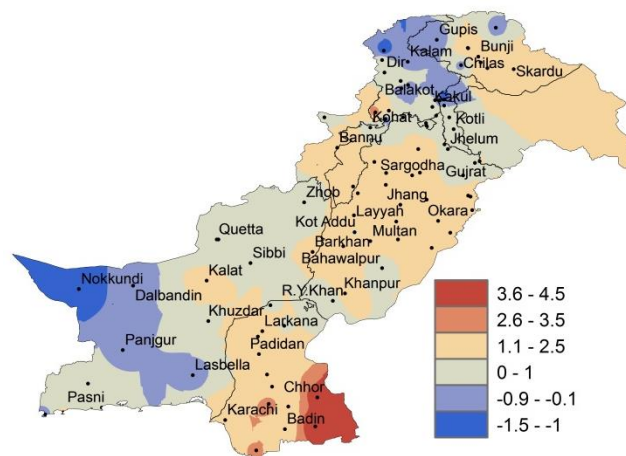
Dry weather reported during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 26%. Mean day temperature was 14.6°C while night temperature recorded as -0.7°C with 97.0hours bright sunshine duration. Wind speed recorded as 5.1km/hr with mean 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: Minimum Temperature distribution during previous decade (°C)

2(b) Past Weather for Sub-Regional Agricultural Plains (11th to 20th January, 2018)

2.6 Jhelum

Dry weather reported during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 49%. Mean day temperature was 24.2°C while night temperature recorded as 3.6°C with 82.5hours bright sunshine duration. Wind speed recorded as 2.6km/hr with mean wind direction *westerly*.

2.7 Lahore

Dry weather reported during the decade; however weather remained cloudy for 03days during the decade. Average relative humidity recorded as 61%. Mean day temperature was 22.5°C while night temperature recorded as 8.3°C with 77.0hours bright sunshine duration. Wind speed recorded as 0.5km/hr with mean wind direction *westerly*.

2.8 Sargodha

Dry weather reported during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 59%. Mean day temperature was 24.3°C while night temperature recorded as 6.9°C with 73.5hours bright sunshine duration. Wind speed recorded 0.9km/hr with mean wind direction *westerly*.

2.9 Multan

Dry weather reported during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 54%. Mean day temperature was 23.8°C while night temperature recorded as 6.8°C with 81.0hours bright sunshine duration. Wind speed recorded 2.3km/hr with mean wind direction *north easterly*.

2.10 Khanpur

Dry weather reported during the decade; however weather remained cloudy for 03days during the decade. Average relative humidity recorded as 52%. Mean day temperature was 26.1°C while night temperature recorded as 5.4°C with 85.8hours bright sunshine duration. Wind speed recorded 1.8km/hr with mean wind direction *south westerly*.

2.11 Sakrand

Dry weather reported during the decade; however weather remained cloudy for 01day during the decade. Average relative humidity recorded as 51%. Mean day temperature was 25.0°C while night temperature recorded as 10.5°C with 90.4hours bright sunshine duration. Wind speed recorded 2.7km/hr with wind direction *northerly*.

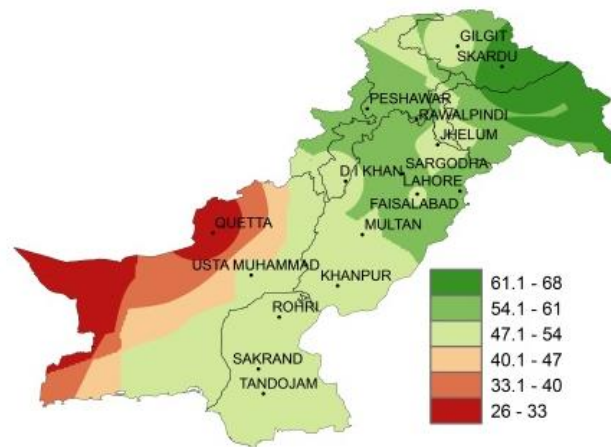


Figure.3: Relative Humidity in Percentage (%)

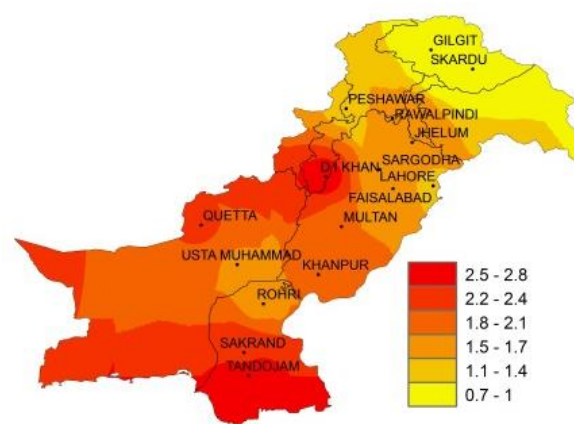


Figure.4: Reference Crop Evapotranspiration ETo (mm/day)

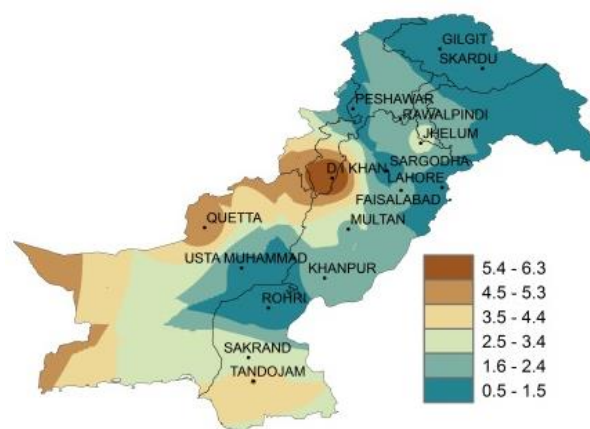


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 51%. Mean day temperature was 25.5°C while night temperature recorded as 8.9°C with 95.7hours bright sunshine duration. Wind speed recorded 0.5km/hr with wind direction *north easterly*.

2.13 D.I. Khan

Dry weather reported during the decade; however weather remained cloudy for 01day during the decade. Average relative humidity recorded as 53%. Mean day temperature was 25.0°C while night temperature recorded as 5.4°C with 77.8hours bright sunshine duration. Wind speed recorded as 6.3km/hr with mean wind direction *north easterly*.

2.14 Peshawar

Dry weather reported during the decade; however weather remained cloudy for 05days during the decade. Average relative humidity recorded as 54%. Mean day temperature was 22.7°C while night temperature recorded as 2.7°C with 63.4hours bright sunshine duration. Wind speed recorded as 1.1km/hr with mean wind direction *south westerly*.

2.15 Skardu

Dry weather reported during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 68%. Mean day temperature was 6.7°C while night temperature recorded as -7.3°C with 32.5hours bright sunshine duration. Wind speed recorded as 0.7km/hr with mean wind direction *east north easterly*.

2.16 Gilgit

Dry weather reported during the decade; however weather remained cloudy for 06days during the decade. Average relative humidity recorded as 51%. Mean day temperature was 12.3°C while night temperature recorded as -4.9°C with 37.9hours bright sunshine duration. Wind speed recorded as 1.2km/hr with mean wind direction *north westerly*.

Ten Days Weather Advisory for Farmers
(21st to 31st January, 2018)

3.1 Temperature Forecast

Night temperatures are expected to drop slightly (1-2°C) 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.

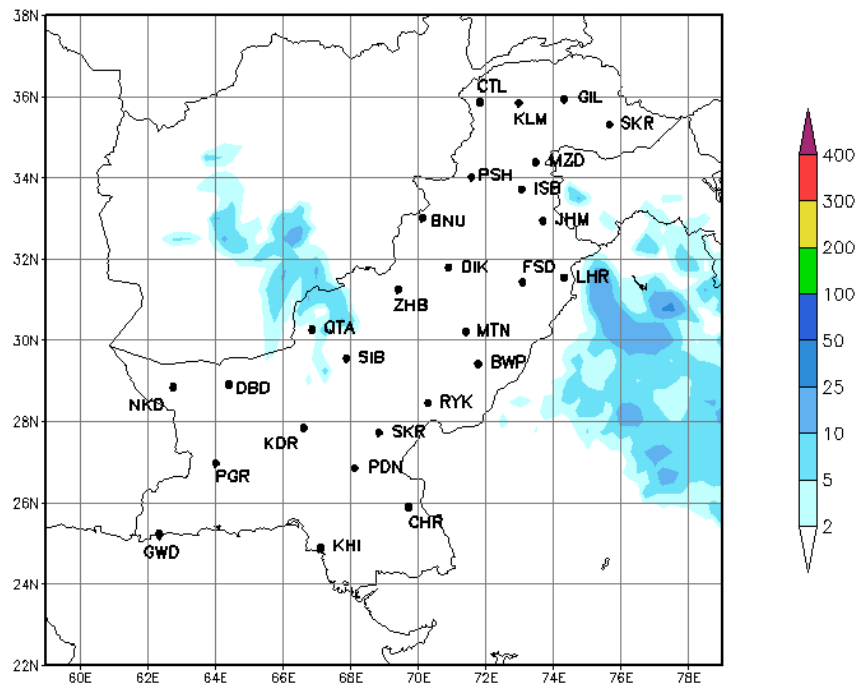
- Fog may occur during the morning times, over some plains of Punjab and upper Sindh.

3.3 Rain Forecast

- ❖ **Punjab:** Mainly cold & dry weather is expected in most of the agricultural plains of province. However light rainfall is expected in upper parts of the province.
- ❖ **Khyber Pakhtunkhwa:** Light to moderate rainfall (snowfall over hills) is expected in the upper parts of the province during the current decade.
- ❖ **Sindh:** Dry weather is expected in the parts province during the current decade.
- ❖ **Balochistan:** Mainly cold & dry weather is expected in most of the agricultural plains of province. However light rainfall is expected in upper parts of the province.
- ❖ **Gilgit Baltistan:** Light to moderate rainfall (snowfall over hills) is expected in the few parts of GB during the current decade.
- ❖ **Kashmir:** Cold and cloudy weather with light to moderate rainfall is expected in the most of the parts of Kashmir during the current decade
- ❖ **3.4 Advisory for Farmers**
 - ❖ 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.
 - ❖ Measures may be taken to preserve the crops/nurseries/orchids from the damaging impacts of extreme weather conditions e.g. frost etc.

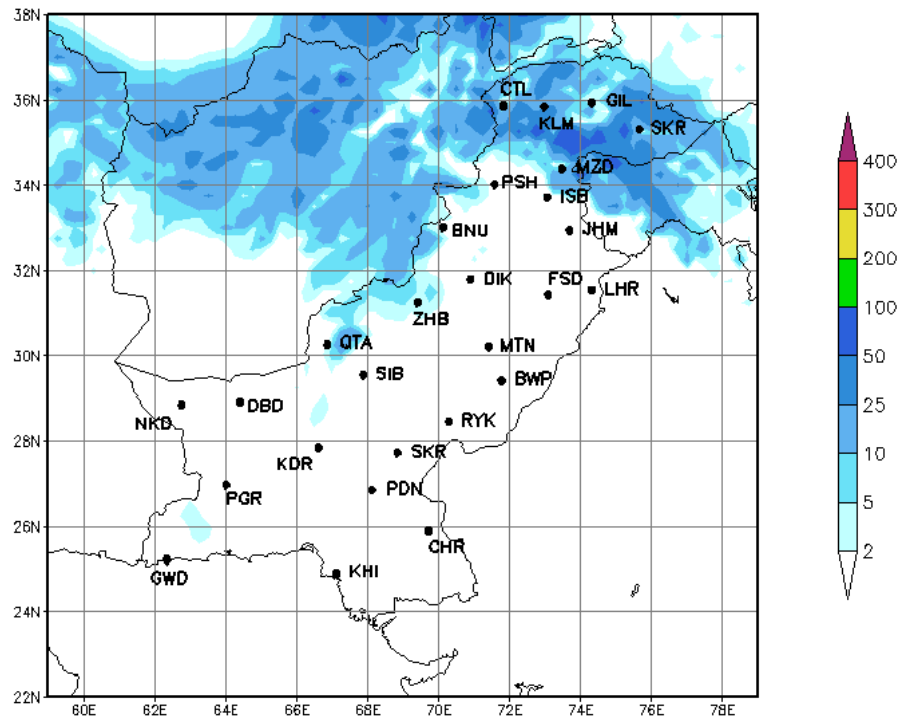
4.1 **Precipitation Outlook (22nd to 24th January, 2018)**

The forecast for the next three days (22nd to 24th) of the third decade of January 2018 shows that mainly cold and dry weather is expected in most parts of the country. However light rainfall with snowfall over hills is expected in few parts of Balochistan, upper and central Punjab.



4.2 **Precipitation Outlook (25th to 31st January, 2018)**

The outlook for the last seven days (25th to 31st) of the third decade of January 2018 shows that mainly cold and cloudy weather is expected in most of the upper and north western parts of the country, however dry weather may occur 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)