

Decadal Agromet Bulletin of Pakistan



Highlights....

- ❖ Light rainfall reported from few parts of the Punjab, K.P, G.B and Kashmir. Dry weather reported from rest parts of the country during the last decade.
- ❖ Highest amount of rainfall recorded as 8.6 mm at Chitral during the last decade.
- ❖ Lowest minimum temperature recorded as -9.0°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, 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.

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

Patron-in-Chief: *Dr. Ghulam Rasul, Director General*

Editor-in-Chief: *Mrs. Asma Jawad Hashmi, Acting Director*

Editor: *Dr. Dildar H. Kazmi, Meteorologist*

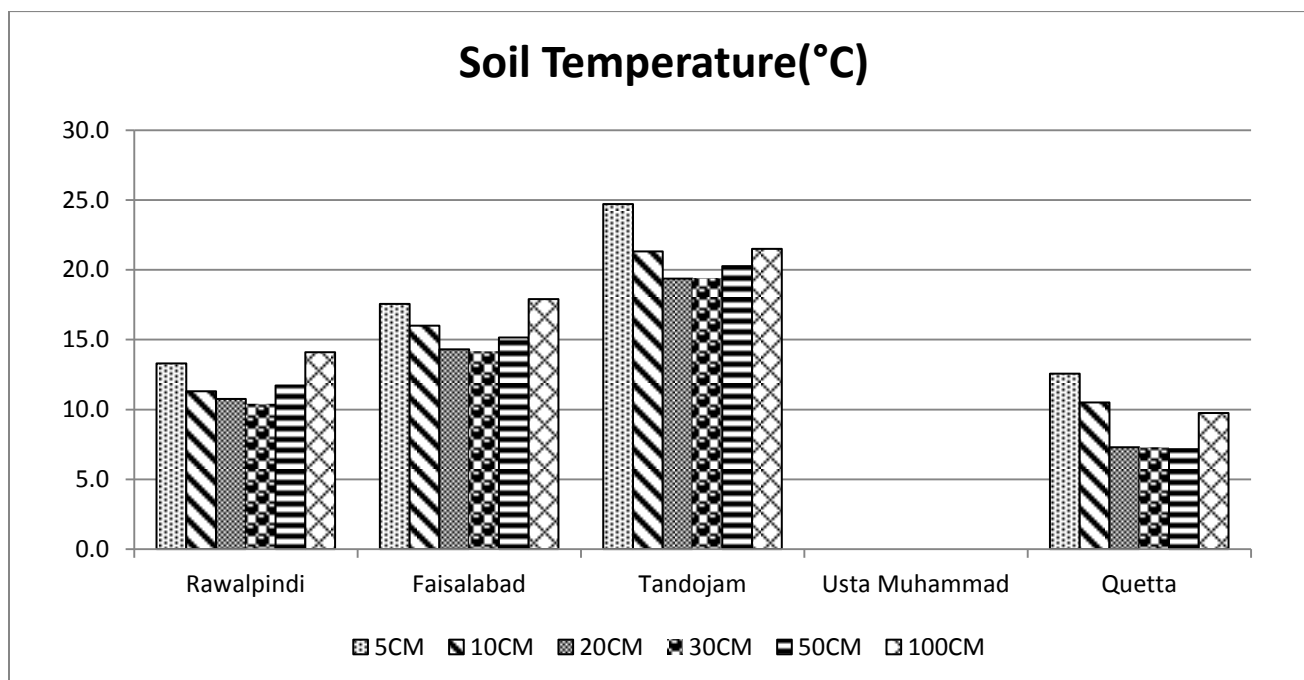
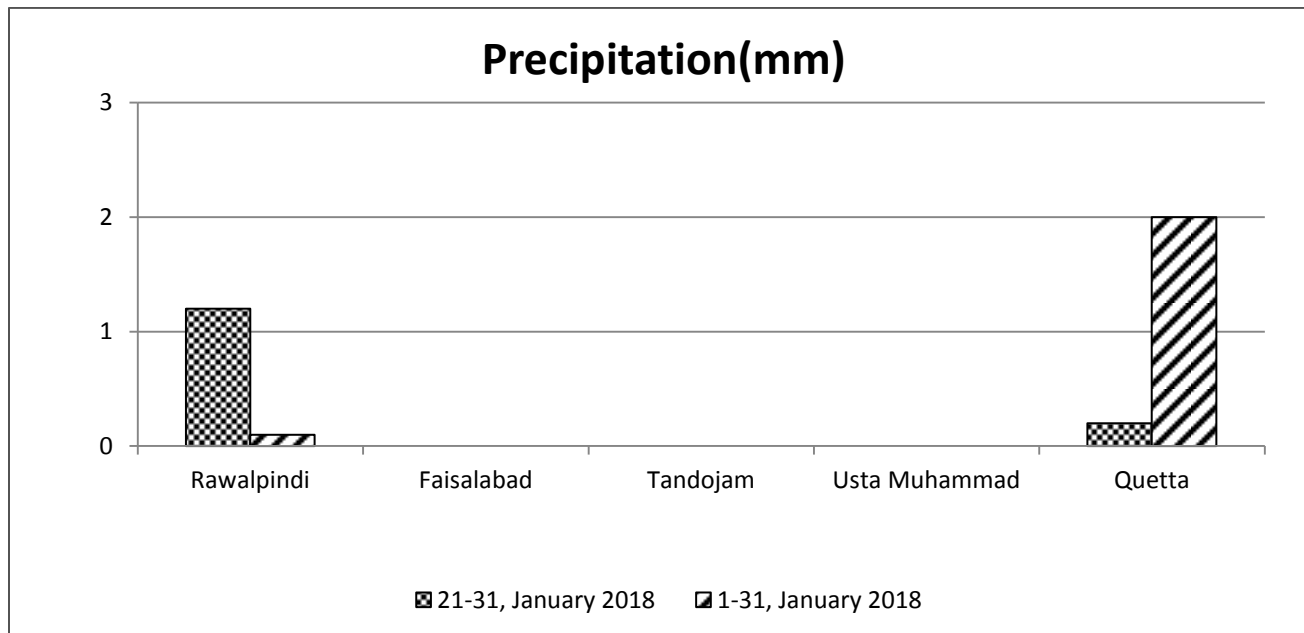
Phone: [+92-51-9250592](tel:+92-51-9250592) Email: info@namc.pmd.gov.pk

Meteorological Conditions during 3rd 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	2.4	1.2	-1.2	-0.1	-0.8	10.7	13.3	11.3	10.8	10.4	11.7	14.1	68	65.9	2.7	1.2
2	Faisalabad	0.3	0.0	-0.3	0.0	-0.4	12.1	17.6	16.0	14.3	14.2	15.2	17.9	66	38.3	1.5	1.1
3	Jhelum	1.7	0.2	-1.5	0.6	-0.7	13.0	15.2	14.0	13.3	13.5	14.7	***	62	56.6	1.5	1.2
4	Lahore	0.7	3.2	2.5	0.4	0.3	14.2	15.3	14.9	14.1	14.2	***	17.2	73	25.2	0.4	0.9
5	Sargodha	1.0	0.1	-0.9	0.1	0.4	13.1	16.7	16.2	15.2	15.7	***	18.3	72	60.0	0.9	1.1
6	Multan	0.2	0.0	-0.2	-2.4	0.9	12.6	***	***	***	***	***	***	70	53.7	2.5	1.4
7	Khanpur	0.0	0.0	0.0	0.2	-1.0	14.1	***	15.1	15.7	16.4	17.3	19.3	65	60.9	1.6	1.5
8	Tandojam	0.0	0.0	0.0	2.9	0.9	18.6	24.7	21.3	19.4	19.4	20.3	21.5	52	79.2	3.3	2.6
9	Sakrand☆	0.0	0.0	0.0	6.1	2.6	17.6	22.5	***	***	***	***	23.5	53	105.2	3.1	2.5
11	Rohri	0.0	0.0	0.0	1.1	-2.0	16.2	***	***	***	***	***	***	57	93.4	1.2	4.6
12	D.I Khan	0.6	0.0	-0.6	-0.2	-0.4	12.3	16.4	14.6	14.5	15.1	5.3	18.9	70	51.8	5.9	1.7
13	Peshawar	1.7	0.0	-1.7	1.2	-1.7	11.9	13.4	12.3	10.9	11.9	13.0	15.1	64	38.5	0.6	0.9
14	Usta .M	0.3	0.0	-0.3	3.1	-0.7	15.8	***	***	***	***	***	***	61	***	1.1	1.6
15	Quetta	0.5	0.2	-0.3	3.5	2.4	8.0	12.6	10.5	7.3	7.3	7.2	9.8	36	86.8	6.3	2.2
16	Skardu	0.8	0.1	-0.7	3.2	0.8	0.3	***	***	***	***	***	***	63	50.8	0.3	0.6
17	Gilgit	0.2	0.0	-0.2	2.7	-1.0	5.2	***	***	***	***	***	***	46	49.7	2.8	1.2

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 January, 2018



Past Weather (21st to 31st January, 2018)

Light rainfall reported from few parts of the Punjab, K.P, G.B and Kashmir. Dry weather reported from rest parts of the country during the last decade.

1.1 Punjab

Light rainfall reported from few parts agricultural plains of Punjab. Chief amount of rainfall is received at Mangla Murree & Chakwal. Decadal maximum and decadal minimum both dropped below normal by 0.2°C & 0.2°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 68%, 51.5hrs, 1.6km/hr and 1.2mm/day respectively.

1.1 Sindh

Dry weather reported from agricultural plains of Sindh. Decadal maximum & minimum departure both raised above normal by 3.4°C & 0.5°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 54%, 92.6hrs, 2.5 km/hr and 3.2mm/day respectively.

1.2 Khyber Pakhtunkhwa (KP)

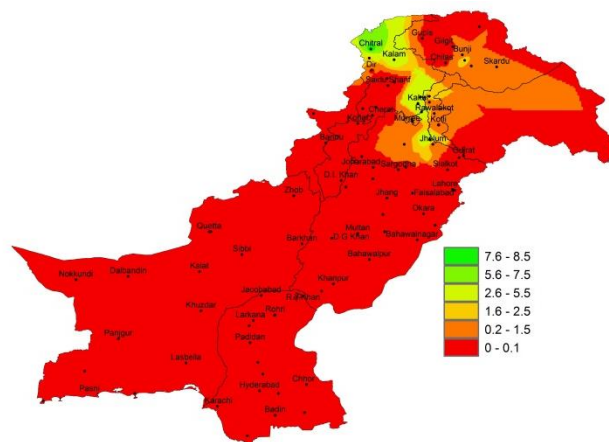
Light rainfall reported from agricultural plains of KP. Chief amount of rainfall is received at Chitral, Balakot & Kalam. Decadal maximum raised above normal by 0.5°C & minimum departure dropped below normal by 1.1°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 67%, 45.2hrs, 3.3km/hr and 1.3mm/day respectively.

1.3 Balochistan

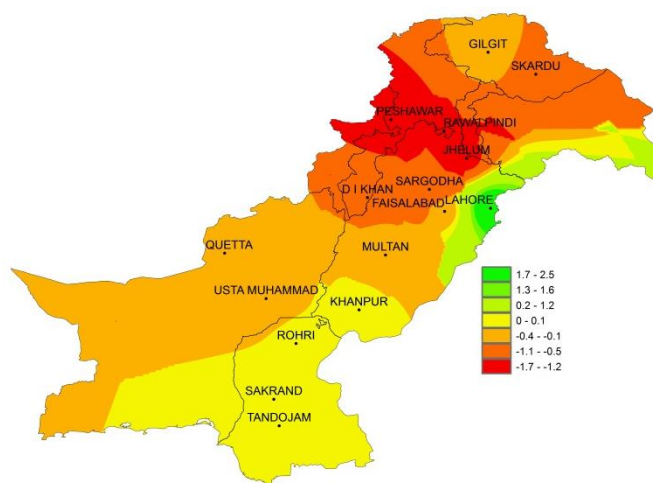
Dry weather reported from agricultural plains of Balochistan. Decadal maximum & minimum departure both raised above normal by 3.3°C & 0.9°C respectively, in the province, in province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 49%, 86.8hrs, 3.7km/hr and 1.9mm/day respectively.

1.4 Gilgit-Baltistan and Azad Jammu & Kashmir

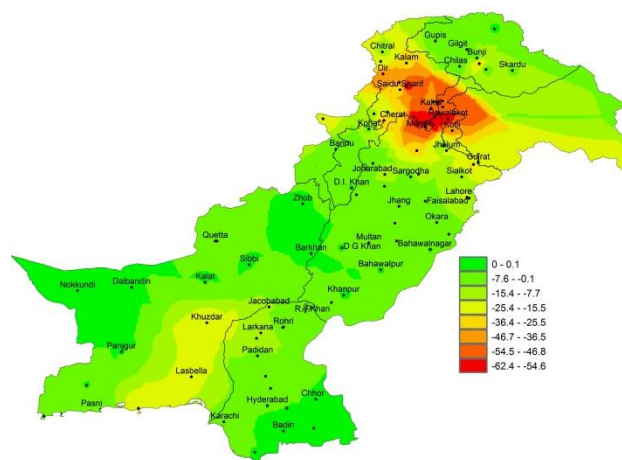
Light rainfall reported from agricultural plains of G.B & Kashmir. Chief amount of rainfall is received at Muzaffarabad & Garhidopattat. Decadal maximum raised above normal by 3.0°C & minimum departure dropped below normal by 0.1°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 55%, 50.3hrs, 1.6km/hr and 0.9mm/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)

2.1 RAMC, Rawalpindi (Potohar region)

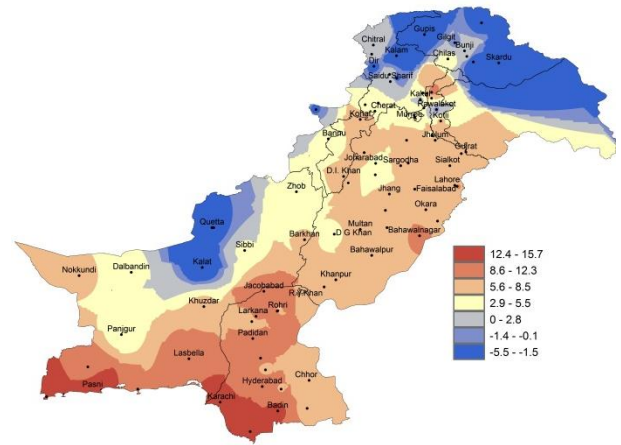
2.2 RAMC, Faisalabad (Central Punjab)

Wheat: Very good condition, Tillering stage.

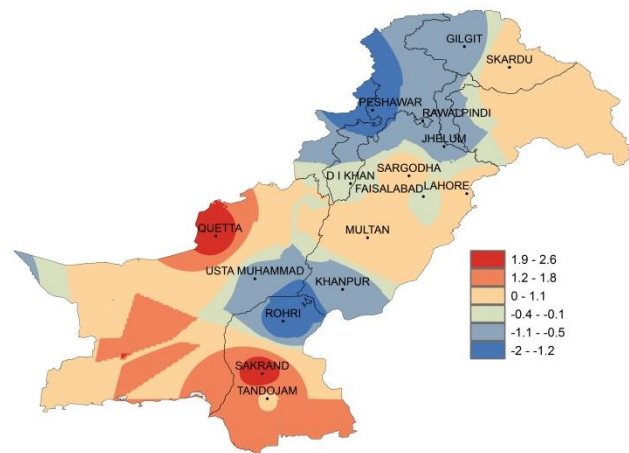
Wheat (Sindhu): Good condition, flowering stage.

Wheat: Good condition, Tillering stage.

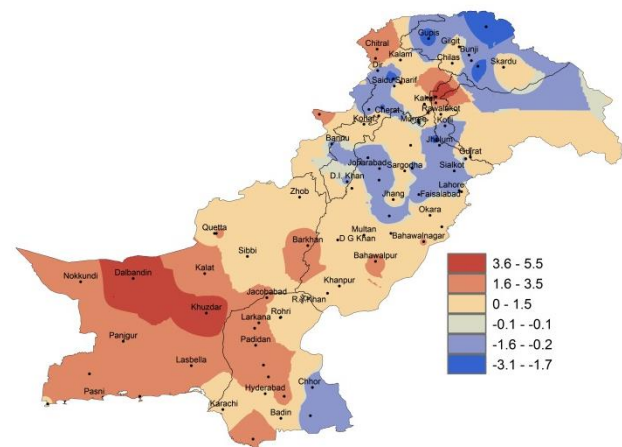
Rainfall reported as 0.2mm during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 36%. Mean day temperature was 14.6°C while night temperature recorded as 1.3°C with 86.8 hours bright sunshine duration. Wind speed recorded as 6.3 km/hr with mean wind direction *south 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 (21st to 31st January, 2018)

2.6 Jhelum

Rainfall reported as 0.2 mm during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 62%. Mean day temperature was 24.8°C while night temperature recorded as 5.1°C with 56.6 hours bright sunshine duration. Wind speed recorded as 1.5 km/hr with mean wind direction *south westerly*.

2.7 Lahore

Rainfall reported as 3.2mm during the decade; however weather remained cloudy for 05days during the decade. Average relative humidity recorded as 73%. Mean day temperature was 19.7°C while night temperature recorded as 8.6°C with 52.2 hours bright sunshine duration. Wind speed recorded as 0.54km/hr with mean wind direction *north westerly*.

2.8 Sargodha

Rainfall reported as Trace(not measurable) during the decade; however weather remained cloudy for 06 days during the decade. Average relative humidity recorded as 72%. Mean day temperature was 20.1°C while night temperature recorded as 6.0°C with 60.0hours bright sunshine duration. Wind speed recorded 0.9km/hr with mean wind direction *south westerly*.

2.9 Multan

Dry weather reported during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 70%. Mean day temperature was 18.5°C while night temperature recorded as 6.7°C with 53.7 hours bright sunshine duration. Wind speed recorded 2.5km/hr with mean wind direction *variable*.

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 *north easterly*.

2.11 Sakrand

Dry weather reported during the decade; Sky remained clear throughout the decade. Average relative humidity recorded as 53%. Mean day temperature was 25.7°C while night temperature recorded as 9.5°C with 105.2hours bright sunshine duration. Wind speed recorded 3.1km/hr with wind direction *northerly*.

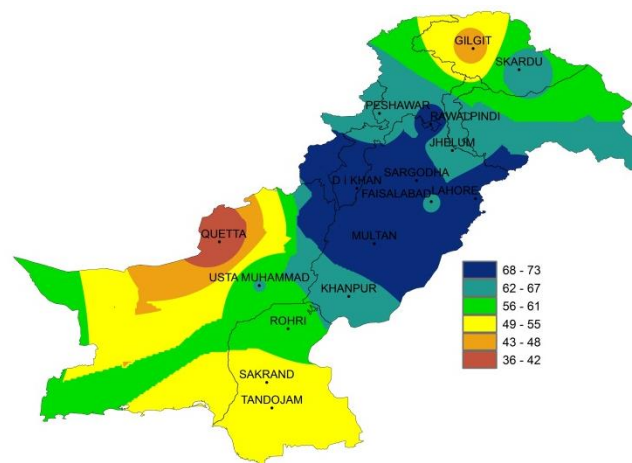


Figure.3: Relative Humidity in Percentage (%)

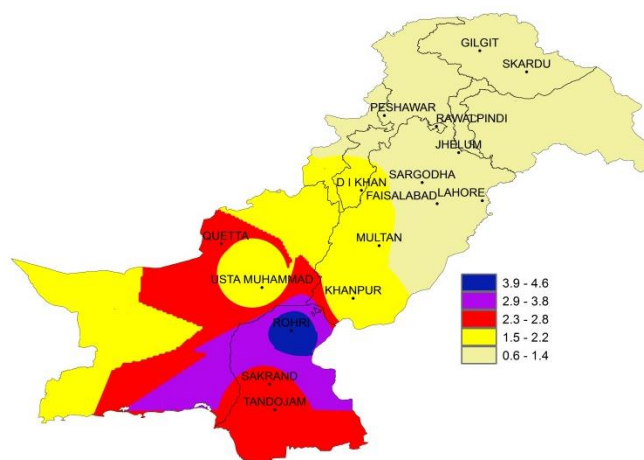


Figure.4: Reference Crop Evapotranspiration ETo (mm/day)

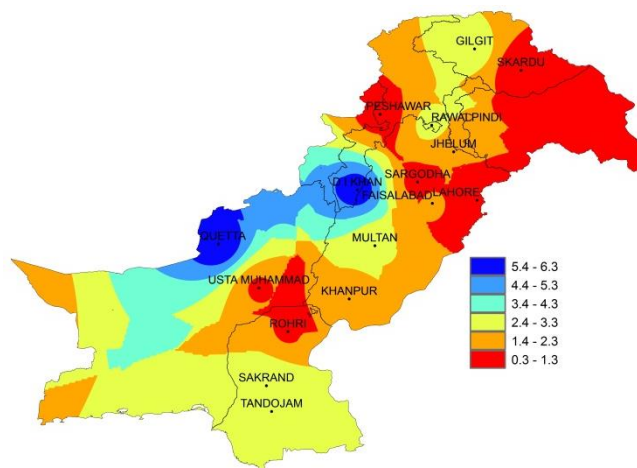


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Dry weather reported during the decade; however weather remained cloudy for 01day during the decade. Average relative humidity recorded as 57%. Mean day temperature was 24.5°C while night temperature recorded as 7.9°C with 93.4hours bright sunshine duration. Wind speed recorded 1.2km/hr with wind direction *north easterly*.

2.13 D.I. Khan

Dry weather reported during the decade; however weather remained cloudy for 08day during the decade. Average relative humidity recorded as 70%. Mean day temperature was 19.9°C while night temperature recorded as 2.5°C with 51.8hours bright sunshine duration. Wind speed recorded as 5.9km/hr with mean wind direction *easterly*.

2.14 Peshawar

Dry weather reported during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 64%. Mean day temperature was 20.0°C while night temperature recorded as 3.7°C with 38.5hours bright sunshine duration. Wind speed recorded as 0.6 km/hr with mean wind direction *north westerly*.

2.15 Skardu

Rainfall reported as Trace (not measurable) during the decade; however weather remained cloudy for 05 days during the decade. Average relative humidity recorded as 63%. Mean day temperature was 7.8°C while night temperature recorded as -7.3°C with 50.8 hours bright sunshine duration. Wind speed recorded as 0.3km/hr with mean wind direction *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
(1st to 10th February, 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.

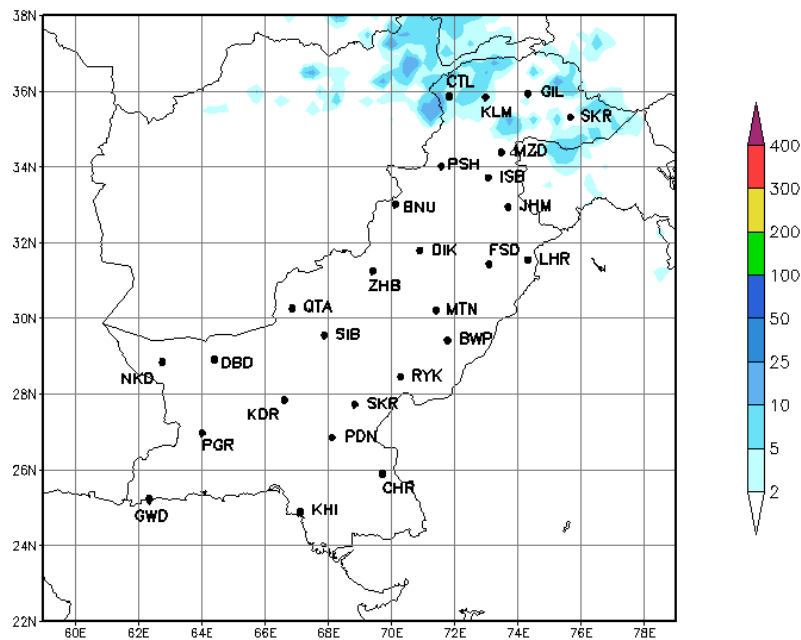
- Fog may occur during the morning times, over some plains of Punjab and upper Sindh.

3.3 Rain Forecast

- ❖ **Punjab:** Mainly cold & dry weather is expected in most of the agricultural plains of province. Foggy conditions are likely to prevail over few plain areas of Punjab.
- ❖ **Khyber Pakhtunkhwa:** Rain (with light snowfall over the hills) is expected in the upper parts of the province during the current decade.
- ❖ **Sindh:** Dry weather is expected in the parts province. Foggy conditions are likely to prevail over few plain areas of upper during morning hours. during the current decade.
- ❖ **Balochistan:** Mainly cold & dry weather is expected in most of the agricultural plains of province.
- ❖ **Gilgit Baltistan:** Mainly cold and dry weather is expected in most parts of the Province. However, light rain/thunderstorm is expected at few places in Kashmir.
- ❖ **Kashmir:** Mainly cold and dry weather is expected in most parts of the country. However, light rain/thunderstorm is expected at few places in Kashmir.
- ❖ **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.

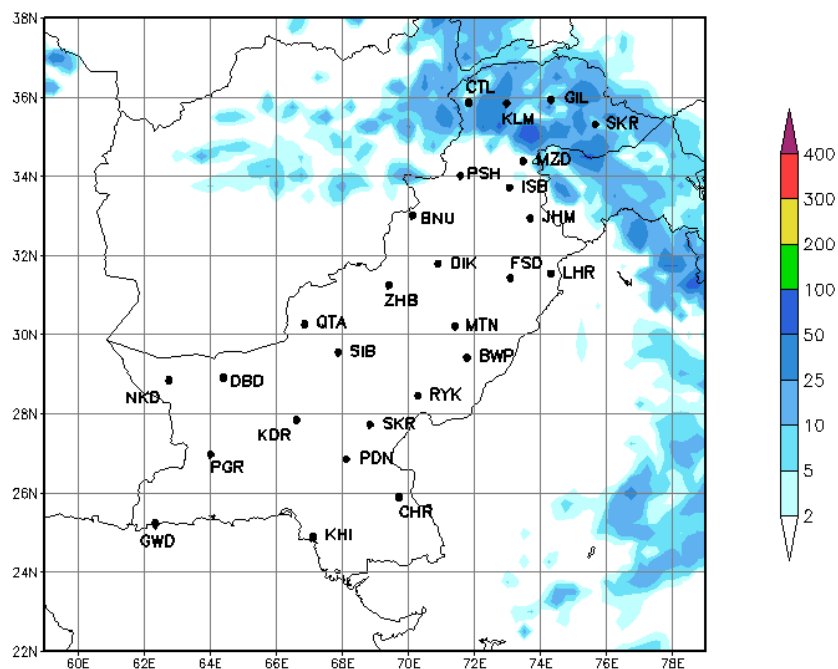
4.1 Precipitation Outlook (1st to 3rd February, 2018)

The forecast for the first three days (1st to 3rd) of the first decade of February 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 upper KP & Kashmir.



4.2 Precipitation Outlook (24th to 10th February, 2018)

The outlook for the last seven days (24th to 10th) of the first decade of February 2018 shows that mainly cold and cloudy weather is expected in most of the upper and northern 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)