

Decadal Agromet Bulletin of Pakistan



Highlights...

- ❖ Light rainfall reported from few of the agricultural plains of Punjab, K.P and G.B while dry weather reported from rest parts of the country during the last decade.
- ❖ Highest amount of rainfall recorded as 10.2 mm at Mirkhani during the last decade.
- ❖ Highest maximum temperature recorded as 51.0°C at Jacobabad 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 few parts of Upper Punjab, KP, GB and Kashmir.
- ❖ Measures may be taken to preserve the standing crops/orchids from the damaging impacts of extreme hot and dry weather conditions in the plain areas.
- ❖ Due to higher temperature Pinkboll worm attack is observed on April sowing Cotton crop, so farmer are advised to take adoptive measures especially use of PB ropes in consultancy with plant protection department.
- ❖ Rice growers are advised to sow the crop's *PANERI* in accordance with the recommendation by the agricultural experts.

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: *Ms. Khalida Noureen, Meteorologist*

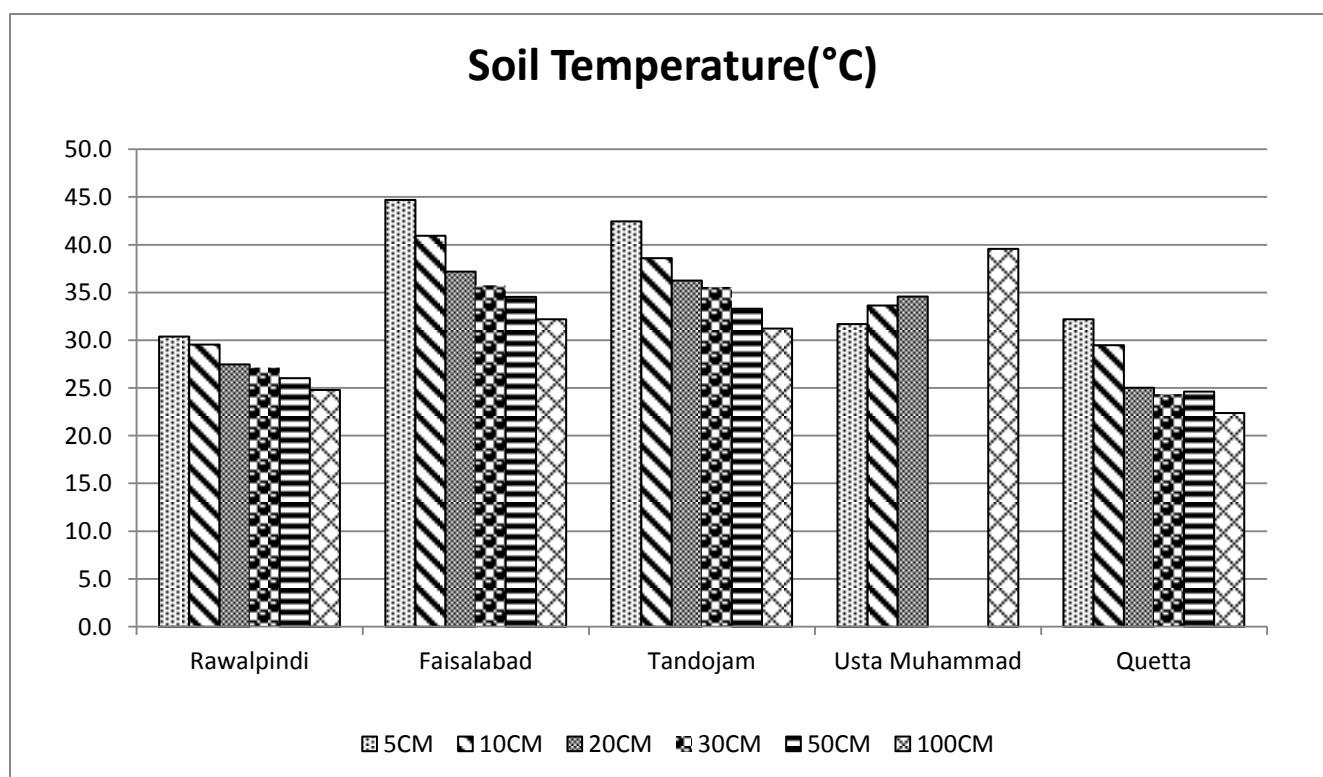
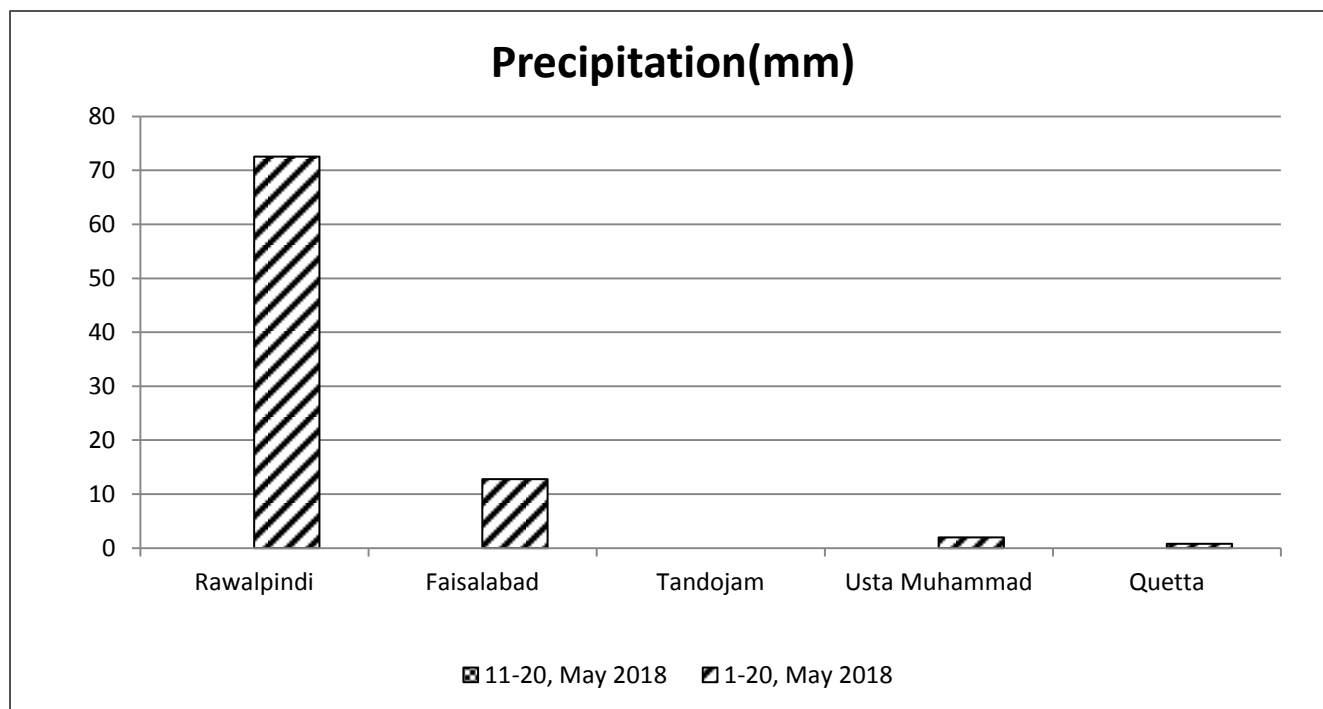
Phone: [+92-51-9250592](tel:+92-51-9250592) Email: info@namc.pmd.gov.pk

Meteorological Conditions during 3rd 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	0.6	0.0	-0.6	1.6	-1.5	29.7	30.4	29.6	27.5	27.2	26.1	24.8	33	123.4	2.9	6.2
2	Faisalabad	0.8	0.0	-0.8	3.7	0.7	34.4	44.7	41.0	37.2	35.8	34.6	32.2	25	114.8	3.1	6.6
3	Jhelum	0.8	0.0	-0.8	4.5	-1.3	33.9	41.7	38.4	34.9	33.3	32.7	***	20	119.1	4.4	7.3
4	Lahore	1.3	0.0	-1.3	3.6	0.9	35.1	38.3	36.2	32.5	31.2	***	28.7	28	107.7	0.5	5.0
5	Sargodha	2.1	0.0	-2.1	3.2	1.1	35.1	41.2	38.0	34.0	32.9	***	28.9	25	106.3	4.6	7.2
6	Multan	0.5	0.0	-0.5	1.1	0.1	34.9	***	***	***	***	***	***	21	115.5	5.1	7.6
7	Khanpur	0.0	0.0	0.0	2.2	-2.6	34.4	***	36.9	36.5	36.5	36.5	34.0	23	115.0	4.2	7.3
8	Tandojam	0.0	0.0	0.0	2.3	-3.1	33.0	42.5	38.6	36.3	35.6	33.3	31.3	36	103.2	7.4	7.2
9	Sakrand☆	0.0	0.0	0.0	-0.7	0.9	35.7	45.7	***	***	***	***	34.5	25	125.8	7.6	9.1
11	Rohri	0.0	0.0	0.0	1.3	-2.7	36.2	***	***	***	***	***	***	16	124.5	1.8	5.9
12	D.I Khan	0.3	0.0	-0.3	3.4	0.7	34.4	37.9	34.8	32.4	31.9	20.5	***	26	124.8	9.0	9.7
13	Peshawar	0.4	0.0	-0.4	1.4	-1.8	30.7	35.7	34.8	29.6	27.9	26.7	25.8	34	106.9	2.1	5.6
14	Usta .M	0.1	0.0	-0.1	-0.6	0.1	38.1	31.7	33.7	34.6	***	***	39.6	30	***	3.2	7.2
15	Quetta	0.3	0.0	-0.3	-2.6	-0.3	22.8	32.2	29.5	25.1	24.4	24.7	22.4	12	122.0	5.9	6.5
16	Skardu	0.4	0.0	-0.4	1.3	-0.3	18.5	***	***	***	***	***	***	24	101.2	4.9	5.5
17	Gilgit	1.1	0.3	-0.8	-0.6	0.6	22.0	***	***	***	***	***	***	28	105.7	5.6	6.1

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



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

Light rainfall reported from few of the agricultural plains of Punjab, K.P and G.B while dry weather reported from rest parts of the country during the last decade.

1.1 Punjab

Light rainfall reported few of the agricultural plains of the Punjab. Chief amount of rainfall is received at Murree, Mangla & Lahore. Decadal maximum raised above normal by 2.8°C & minimum dropped below normal by 0.4°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 25%, 114.5hrs, 3.5km/hr and 6.7mm/day respectively.

1.2 Sindh

Dry weather reported from the agricultural plains of Sindh. Decadal maximum raised above normal by 1.0°C & minimum dropped below normal by 1.6°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 26%, 117.8hrs, 5.6km/hr and 7.4mm/day respectively.

1.3 Khyber Pakhtunkhwa (KP)

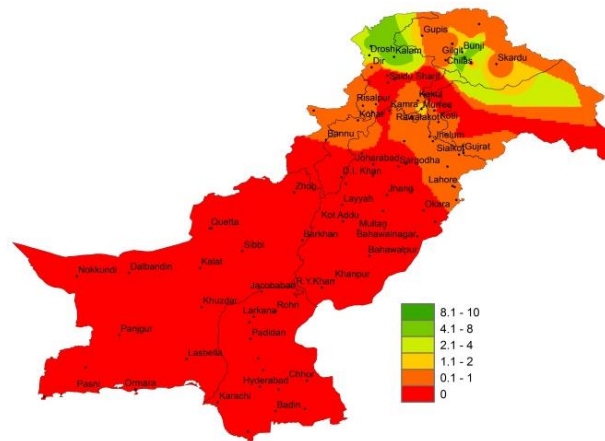
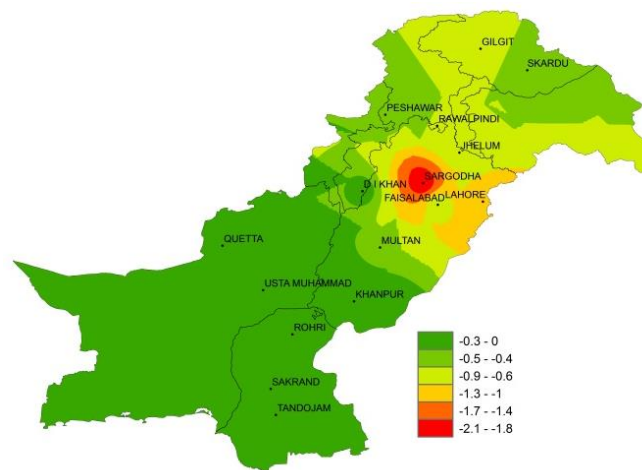
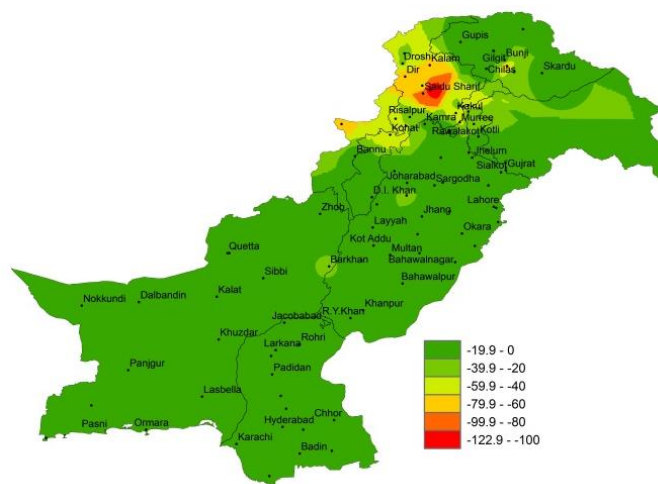
Light rainfall reported from few of the agricultural plains of KP. Chief amount of rainfall is received at Mirkhani, Kalam & Chitral. Decadal maximum raised above normal by 2.4°C & minimum dropped below normal by 0.5°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 30%, 115.9hrs, 5.6km/hr and 7.7mm/day respectively.

1.4 Balochistan

Dry weather reported from the agricultural plains of Balochistan. Decadal maximum & minimum both dropped below normal by 1.6°C & 0.1°C respectively, in province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 21%, 122.0hrs, 4.6km/hr and 6.9 mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

Light rainfall reported from few of the agricultural plains of G.B and Kashmir. Chief amount of rainfall is received at Bunji, Bagrote & Gupis. Decadal maximum & minimum both raised above normal by 0.4°C & 0.2°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 26%, 103.5hrs, 5.3km/hr and 5.8mm/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** **(21st to 31st May, 2018)**

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

Dry weather reported during the decade; however weather remained cloudy for 03days during the decade. Average relative humidity recorded as 33%. Mean day temperature was 39.4°C while night temperature recorded as 20.0°C with 123.4hours bright sunshine duration. Wind speed recorded as 2.9km/hr with mean wind direction *westerly*.

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

Dry weather reported during the decade; however weather remained cloudy for 02days during the decade. Average relative humidity recorded as 25%. Mean day temperature was 43.5°C while night temperature recorded as 25.3°C with 114.8hours bright sunshine duration. Wind speed recorded as 3.1km/hr with mean wind direction *westerly*.

Cotton: Good condition, emergence stage

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

Dry weather reported during the decade; Average relative humidity recorded as 36%. Mean day temperature was 42.9°C while night temperature recorded as 23.0°C with 103.2hours bright sunshine duration. Wind speed recorded as 7.4km/h with mean wind direction *north westerly*.

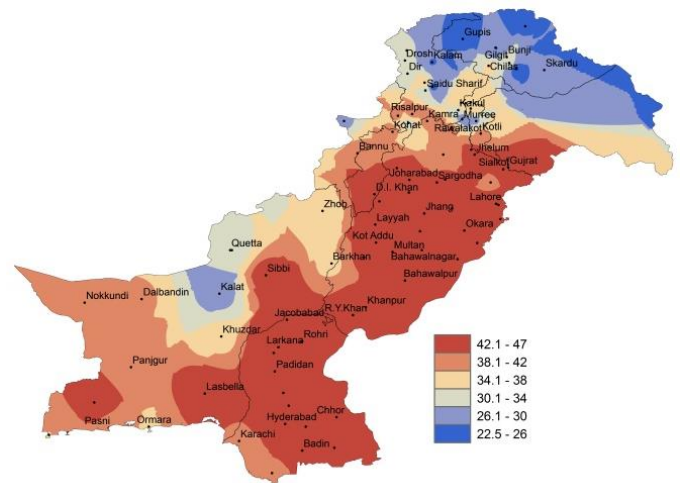
Cotton SIM602: Good condition, third true leaf

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

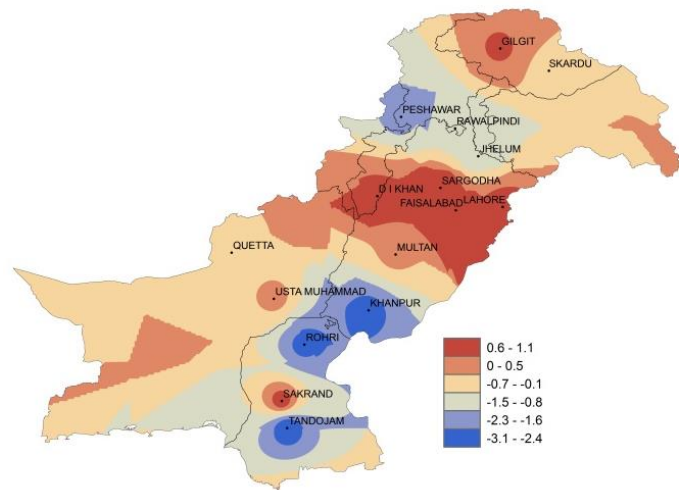
Dry weather reported during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 30%. Mean day temperature was 47.2°C while night temperature recorded as 29.0°C. Wind speed recorded as 3.2km/h with mean wind direction *south westerly*.

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

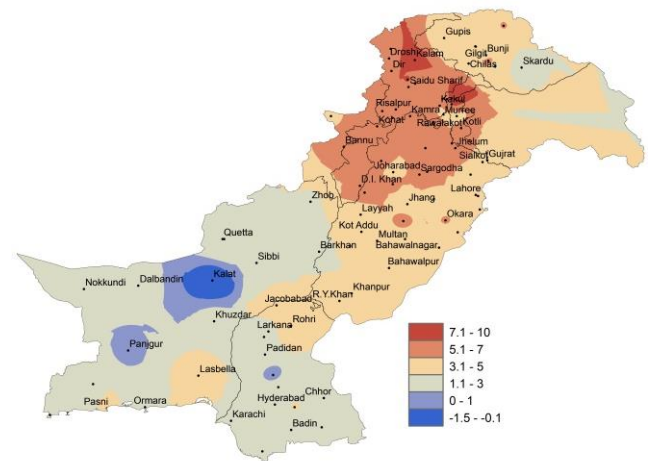
Dry weather reported during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 12%. Mean day temperature was 29.8°C while night temperature recorded as 15.7°C with 122.0hours bright sunshine duration. Wind speed recorded as 5.9km/hr with mean 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 (21st to 31st May, 2018)

2.6 Jhelum

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 20%. Mean day temperature was 44.0°C while night temperature recorded as 23.8°C with 119.1hours bright sunshine duration. Wind speed recorded as 4.4km/hr with mean wind direction *north westerly*.

2.7 Lahore

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 28%. Mean day temperature was 42.7°C while night temperature recorded as 27.4°C with 107.7hours bright sunshine duration. Wind speed recorded as 0.5km/hr with mean wind direction *north westerly*.

2.8 Sargodha

Dry weather reported during the decade; however weather remained cloudy for 02days during the decade. Average relative humidity recorded as 25%. Mean day temperature was 43.3°C while night temperature recorded as 26.8°C with 106.3hours bright sunshine duration. Wind speed recorded 4.6km/hr with mean wind direction *variable*.

2.9 Multan

Dry weather reported during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 21%. Mean day temperature was 42.8°C while night temperature recorded as 26.9°C with 115.5hours bright sunshine duration. Wind speed recorded 5.1km/hr with mean wind direction *south westerly*.

2.10 Khanpur

Dry weather reported during the decade; however weather remained cloudy for 01day during the decade. Average relative humidity recorded as 23%. Mean day temperature was 44.6°C while night temperature recorded as 24.2°C with 115.0hours bright sunshine duration. Wind speed recorded 4.2km/hr with mean wind direction *variable*.

2.11 Sakrand

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 25%. Mean day temperature was 43.9°C while night temperature recorded as 27.5°C with 125.8hours bright sunshine duration. Wind speed recorded 7.6km/hr with wind direction *north westerly*.

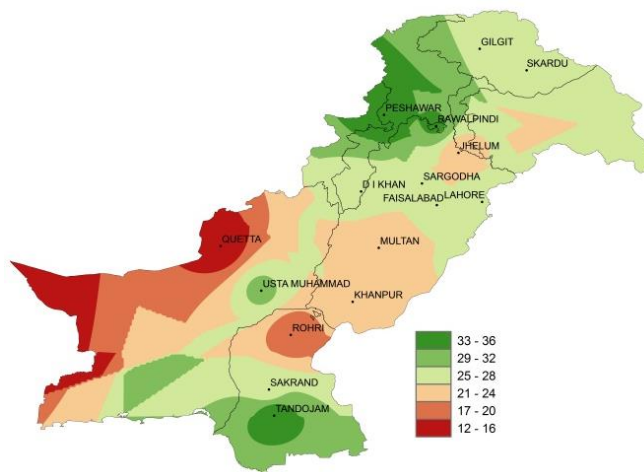


Figure.3: Relative Humidity in Percentage (%)

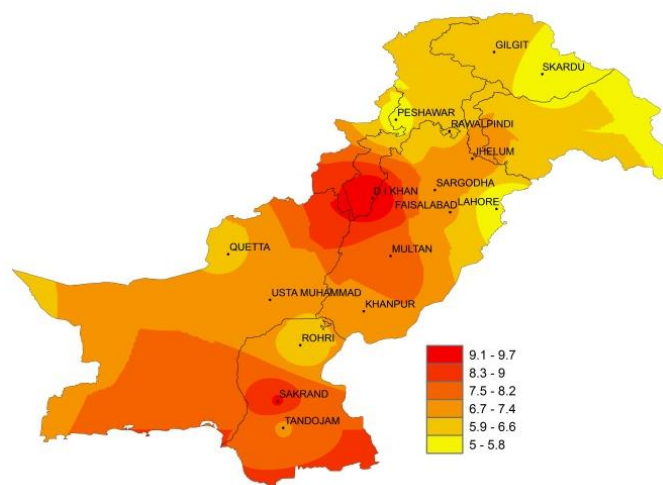


Figure.4: Reference Crop Evapotranspiration ETo (mm/day)

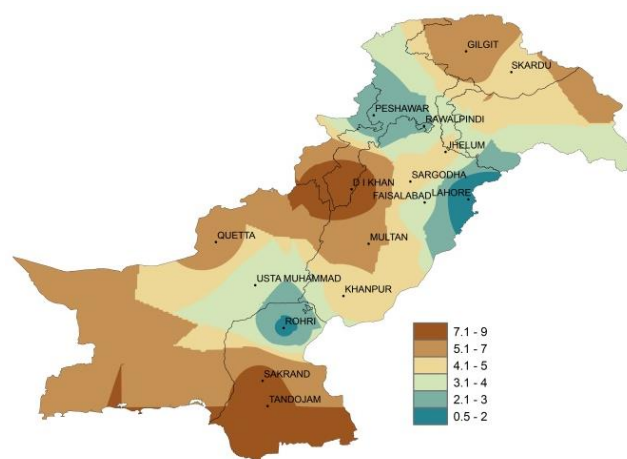


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Dry weather reported during the decade; however weather remained cloudy for 01day during the decade. Average relative humidity recorded as 16%. Mean day temperature was 45.9°C while night temperature recorded as 26.4°C with 124.5hours bright sunshine duration. Wind speed recorded 1.8km/hr with wind direction *north easterly*.

2.13 D.I. Khan

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 26%. Mean day temperature was 43.7°C while night temperature recorded as 25.1°C with 124.8hours bright sunshine duration. Wind speed recorded as 9.0km/hr with mean wind direction *north easterly*.

2.14 Peshawar

Dry weather reported during the decade; however weather remained cloudy for 06days during the decade. Average relative humidity recorded as 34%. Mean day temperature was 39.2°C while night temperature recorded as 22.2°C with 106.9hours bright sunshine duration. Wind speed recorded as 2.1km/hr with mean wind direction *north westerly*.

2.15 Skardu

Dry weather reported during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 24%. Mean day temperature was 27.0°C while night temperature recorded as 9.9°C with 101.2hours bright sunshine duration. Wind speed recorded as 4.9km/hr with mean wind direction *south westerly*.

2.16 Gilgit

Rainfall reported as 0.3mm during the decade; however weather remained cloudy for 03days during the decade. Average relative humidity recorded as 28%. Mean day temperature was 30.8°C while night temperature recorded as 13.1°C with 105.7hours bright sunshine duration. Wind speed recorded as 5.6km/hr with mean wind direction *north easterly*.

Ten Days Weather Advisory for Farmers **(1st to 10th June, 2018)**

3.1 Temperature Forecast

Both day and night temperatures are likely to be slightly above 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

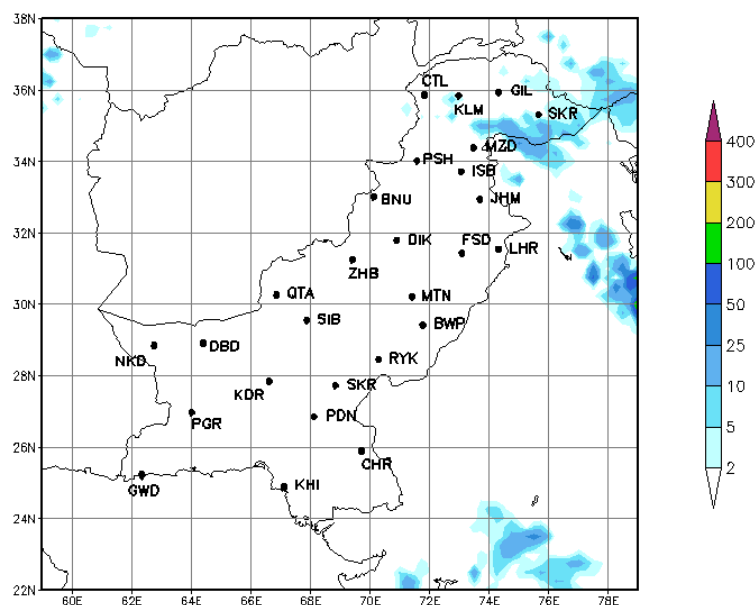
- ❖ **Punjab:** Hot and dry weather is expected in most parts of the province however light to moderate rainfall is expected in 2nd half of the decade.
- ❖ **Khyber Pakhtunkhwa:** Light to moderate rain-thunderstorm is expected at few places of the province during the decade.
- ❖ **Sindh:** Hot and dry weather is expected in most parts of the province during the decade.
- ❖ **Balochistan:** Hot and dry weather is expected in most parts of the province 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 few 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 hot and dry weather conditions in the plain areas.
- ❖ The farmers of lower half may regularly irrigate their Kharif crops by keeping in view the ongoing the extreme hot weather conditions.
- ❖ Rice growers are advised to sow the crop's PANERI in accordance with the recommendation by the agricultural experts.
- ❖ Due to higher temperature Pinkboll worm attack is observed on April sowing Cotton crop, so farmer are advised to take adoptive measures especially use of PB ropes in consultancy with plant protection department.

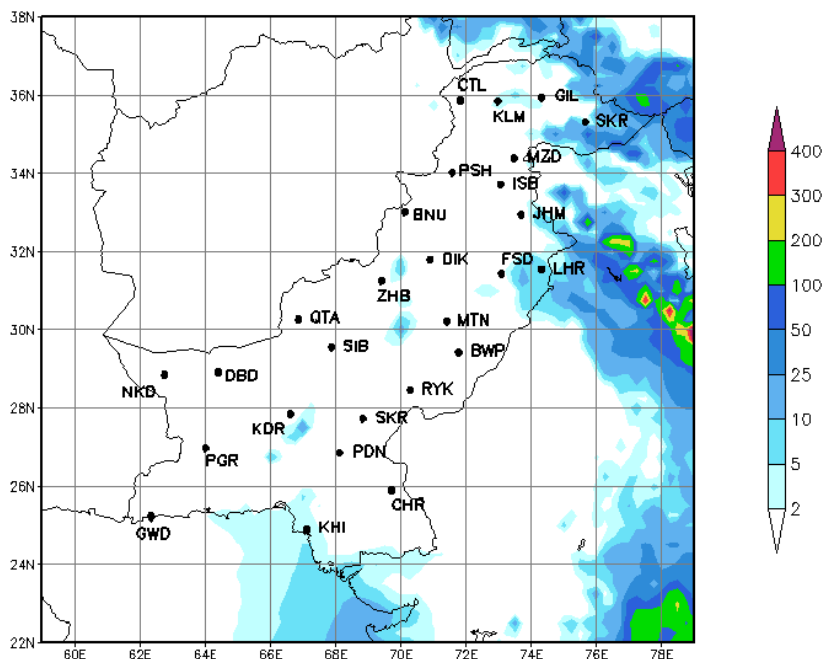
4.1 Precipitation Outlook (1st to 3rd June, 2018)

The forecast for the first three days (1st to 3rd) of the first decade of June, 2018 shows that mostly hot and dry weather is expected in most parts of the country. However, light rainfall is expected at scattered places in upper KP, G.B and Kashmir.



4.2 Precipitation Outlook (4th to 10th June, 2018)

The outlook for the last seven days (4th to 10th) of the first decade of May, 2018 shows that mostly hot and dry weather is expected in most parts of the country. However, light to moderate rainfall is expected at scattered places in upper Punjab, upper KP, western Baluchistan, coastal Sindh, G.B and Kashmir.



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)