

Decadal Agromet Bulletin of Pakistan



Highlights....

- ❖ Light to moderate rainfall reported from most parts of Punjab, K.P, G.B, Kashmir while light rainfall reported from few parts of Balochistan and Sindh during the last decade.
- ❖ Highest amount of rainfall recorded as 61.0 mm at Malam Jabba during the last decade.
- ❖ Highest maximum temperature recorded as 49.0°C at Dadu during the last decade.
- ❖ Light to moderate rain is expected in upper parts of the country, while dry weather is expected in rest parts of the country during the current decade.
- ❖ Farmers of southern Punjab and upper Sindh are advised to complete sowing of cotton crops in time so that best grains conditions may better be utilized during the whole crop life.
- ❖ Farmers of Peanut cultivation areas are advised to sow their crops if appropriate moisture is available in the fields.
- ❖ 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 standing crops and vegetables from the damaging effects of varying weather pattern.

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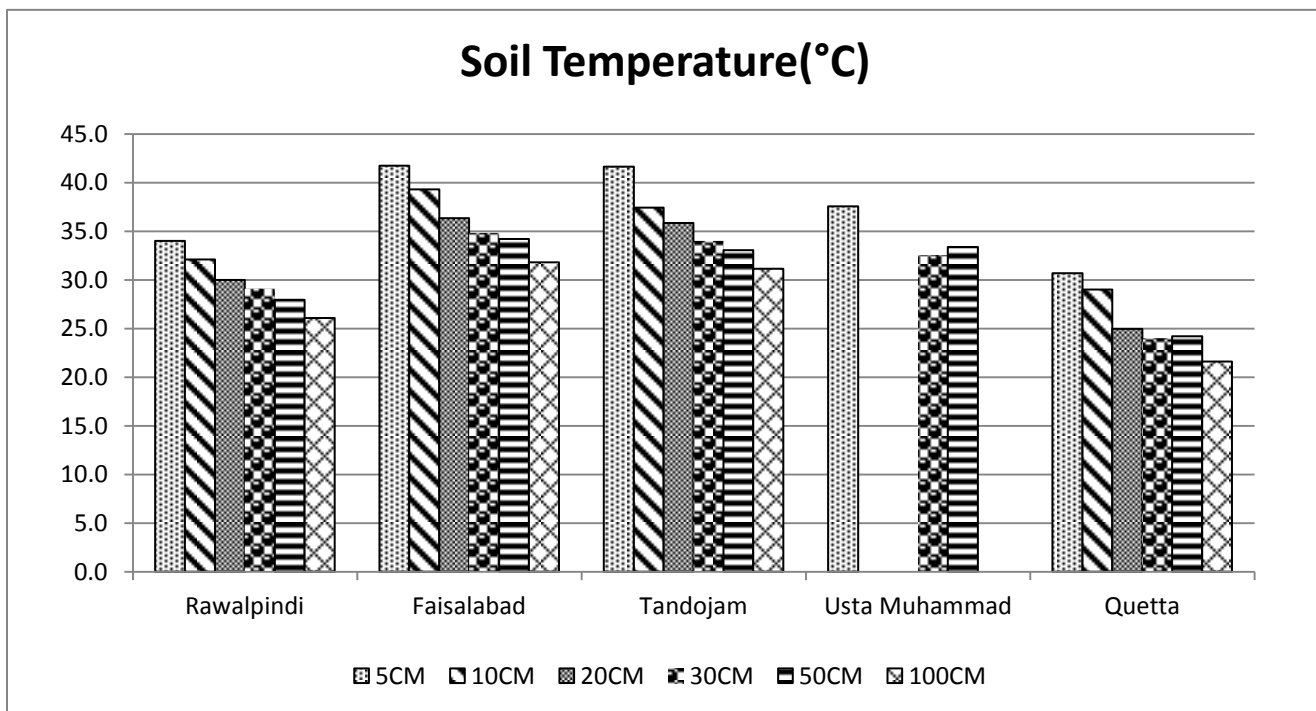
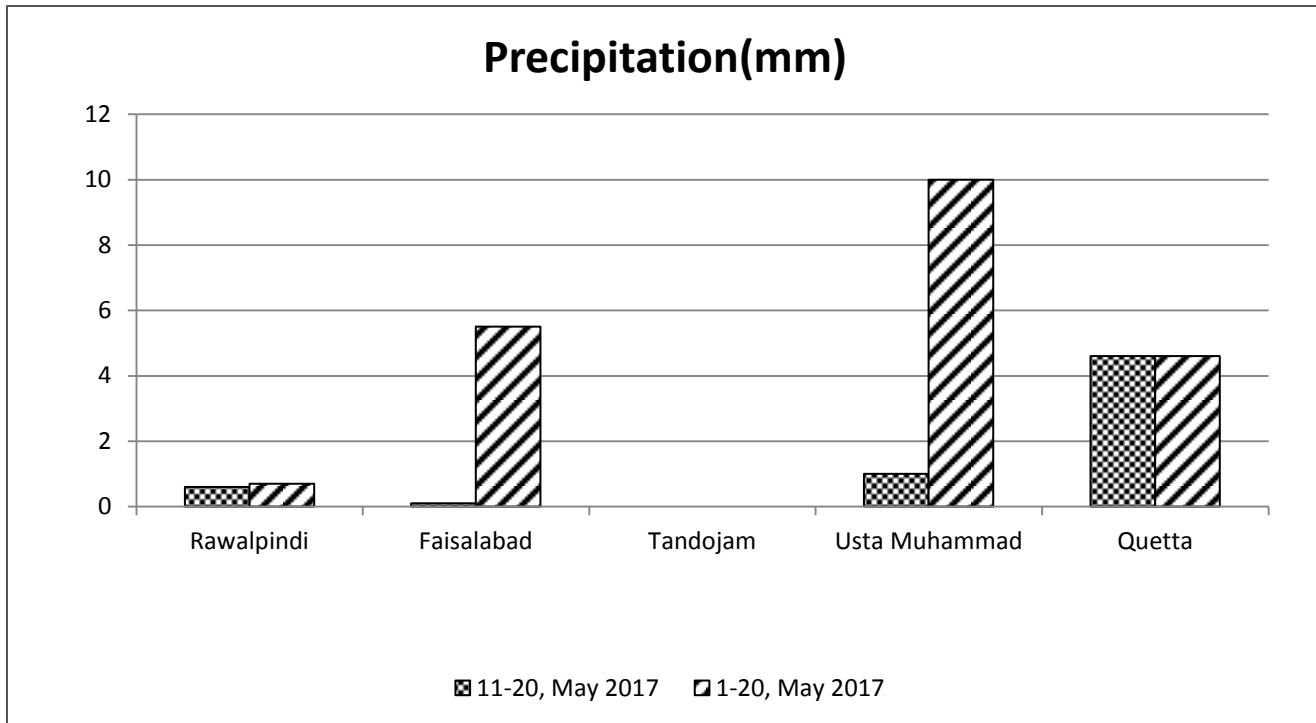
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Meteorological Conditions during 2nd decade of May, 2017

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	1.5	0.6	-0.9	0.1	2.6	30.8	34.0	32.1	30.0	29.1	28.0	26.1	42	82.8	4.3	5.8
2	Faisalabad	0.2	0.1	-0.1	-1.0	0.0	32.6	41.8	39.3	36.4	34.9	34.2	31.8	37	88.4	3.4	5.8
3	Jhelum	0.9	12.0	11.1	-0.5	0.2	32.3	36.1	34.7	32.3	31.2	30.7	***	39	80.5	4.7	6.2
4	Lahore	0.2	4.2	4.0	-1.3	-0.1	32.5	36.0	34.6	31.5	30.2	***	27.9	39	79.0	2.7	5.3
5	Sargodha	0.6	20.7	20.1	-2.5	-0.4	32.3	37.1	34.7	31.5	31.5	***	28.3	44	79.3	2.1	5.1
6	Multan	0.0	0.1	0.1	-1.8	1.0	34.6	***	***	***	***	***	***	29	87.5	7.9	8.1
7	Khanpur	0.0	6.8	6.8	0.0	0.5	34.5	***	37.2	36.9	36.9	36.7	33.9	34	87.1	5.4	7.0
8	Tandojam	0.0	0.0	0.0	-0.3	-1.4	32.7	41.7	37.5	35.9	34.0	33.1	31.2	49	96.6	13.1	8.9
9	Sakrand ☆	0.0	13.0	13.0	-0.8	1.2	35.4	52.8	***	***	***	***	33.7	36	96.6	5.4	7.3
11	Rohri	0.0	0.0	0.0	-1.5	1.3	36.8	***	***	***	***	***	***	33	99.4	3.6	6.6
12	D.I Khan	0.4	0.1	-0.3	0.4	-0.3	32.8	34.4	34.5	32.3	33.1	23.6	28.4	43	86.6	12.2	9.0
13	Peshawar	0.4	2.0	1.6	-0.2	-0.6	30.6	38.3	33.2	31.8	29.1	19.2	26.3	46	74.9	2.6	5.0
14	Usta .M	0.0	1.0	1.0	-2.9	-0.5	35.1	37.6	***	***	32.6	33.4	***	29	***	2.3	6.0
15	Quetta	0.1	4.6	4.5	-0.5	0.8	24.1	30.7	29.0	25.0	24.0	24.2	21.6	28	76.3	4.9	5.5
16	Skardu	0.3	2.2	1.9	0.8	1.6	19.6	***	***	***	***	***	***	38	73.2	6.6	5.2
17	Gilgit	0.2	10.0	9.8	-3.5	3.0	22.3	***	***	***	***	***	***	47	60.3	3.1	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, 2017



1. Past Weather (11th to 20th May, 2017)

Light to moderate rainfall reported from most parts of Punjab, K.P, G.B, Kashmir while light rainfall reported from few parts of Balochistan and Sindh during the last decade.

1.1 Punjab

Light to moderate rainfall reported from agricultural plains of Punjab. Chief amount of rainfall received at Jouharabad, Sargodha & Kasur. Decadal maximum dropped below normal by 0.1°C and minimum raised above normal by 0.5°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 38%, 83.5hrs, 4.4km/hr and 6.2mm/day respectively.

1.1 Sindh

Light rainfall reported from few agricultural plains of Sindh. Chief amount of rainfall received at Jacobabad, Larkana & Moen Jo Daro Decadal maximum dropped below normal by 0.9°C and minimum raised above normal by 0.4°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 39%, 97.5hrs, 7.4km/hr and 7.6mm/day respectively.

1.2 Khyber Pakhtunkhwa (KP)

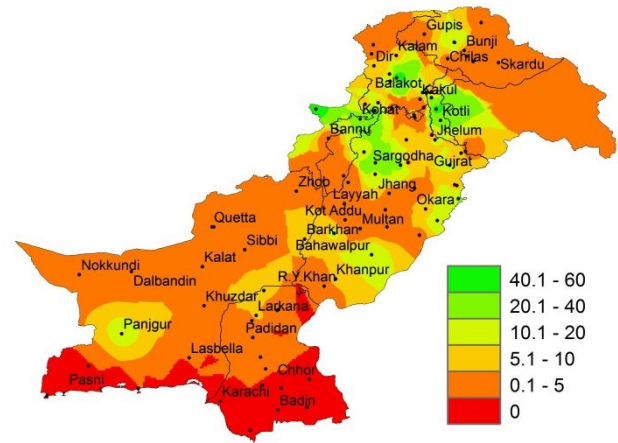
Light to moderate rainfall reported from agricultural plains of KP. Chief amount of rainfall received at Malam Jabba, Parachinar & Cherat. Decadal maximum raised above normal by 0.1°C and minimum dropped below normal by 0.5°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 45%, 80.8hrs, 7.4km/hr and 7.0mm/day respectively.

1.3 Balochistan

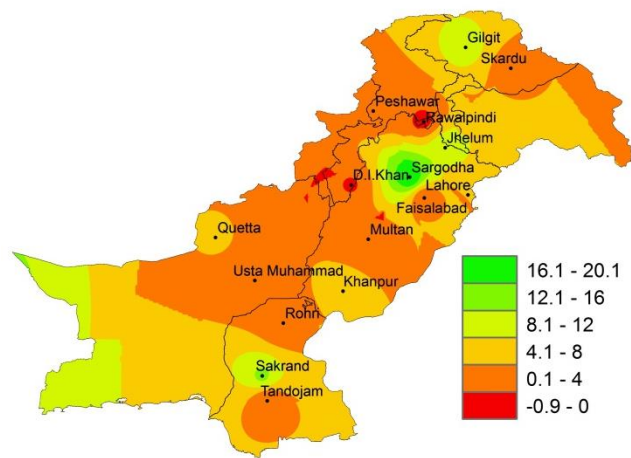
Light rainfall reported from few agricultural plains of Balochistan. Chief amount of rainfall received at Panjgur, Khuzdar & Barkhan. Decadal maximum dropped below normal by 1.7°C and minimum raised above normal by 0.1°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 29%, 76.3hrs, 3.6km/hr and 5.8mm/day respectively.

1.4 Gilgit-Baltistan and Azad Jammu & Kashmir

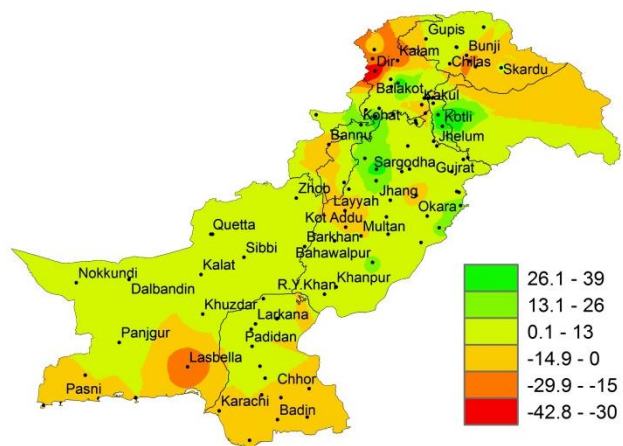
Light to moderate rainfall reported from agricultural plains of GB & Kashmir. Chief amount of rainfall received at Rawalakot, Kotli & Garhi Dopatta. Daro Decadal maximum dropped below normal by 1.4°C and minimum raised above normal by 2.3°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 43%, 66.8hrs, 4.9km/hr and 4.7mm/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 May, 2017)

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

Rainfall reported as 0.6mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 42%. Mean day temperature was 37.7°C while night temperature recorded as 23.8°C with 82.8hours bright sunshine duration. Wind speed recorded as 4.3km/hr with mean wind direction *variable*.

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

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 05days. Average relative humidity recorded as 37%. Mean day temperature was 40.2°C while night temperature recorded as 25.0°C with 88.42hours bright sunshine duration. Wind speed recorded as 3.4km/hr with mean wind direction *south westerly*.

Crop Condition: *Field is being prepared for new crop.*

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

Dry weather reported during the decade; however weather remained cloudy for 04days. Average relative humidity recorded as 49%. Mean day temperature was 41.0°C while night temperature recorded as 24.3°C with 96.9hours bright sunshine duration. Wind speed recorded as 13.1km/h with mean wind direction *south westerly*.

Cotton: *Good condition, third leaf stage.*

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

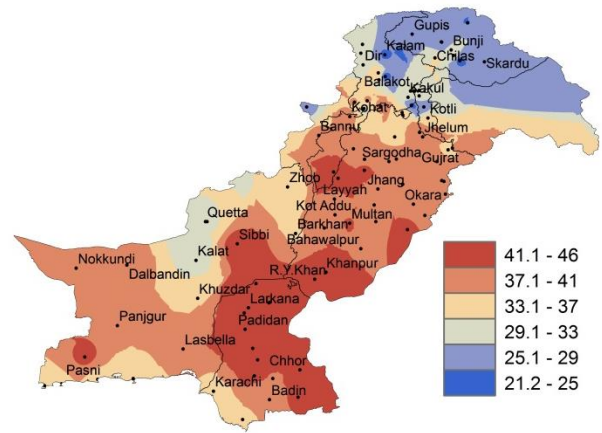
Rainfall reported as 1.0mm during the decade; however weather remained cloudy for 05days. Average relative humidity recorded as 29%. Mean day temperature was 43.4°C while night temperature recorded as 26.8°C. Wind speed recorded as 2.3km/h with mean wind direction *south easterly*.

Crop Condition: *Field is being prepared for new crop.*

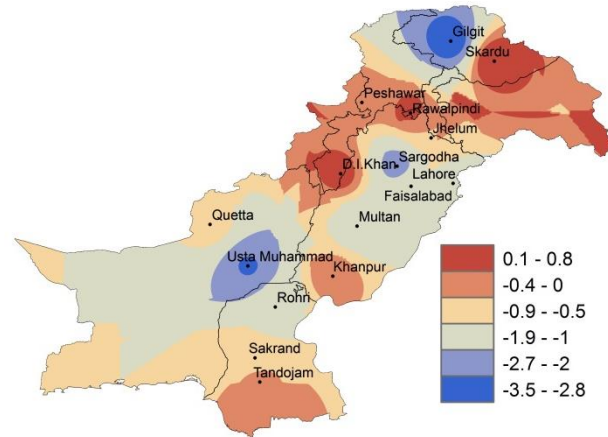
2.5 **RAMC, Quetta (Northern Balochistan)**

Rainfall reported as 4.6mm during the decade; however weather remained cloudy for 09days. Average relative humidity recorded as 28%. Mean day temperature was 32.0°C while night temperature recorded as 16.2°C with 76.3hours bright sunshine duration. Wind speed recorded as 4.9km/hr with mean wind direction *north westerly*.

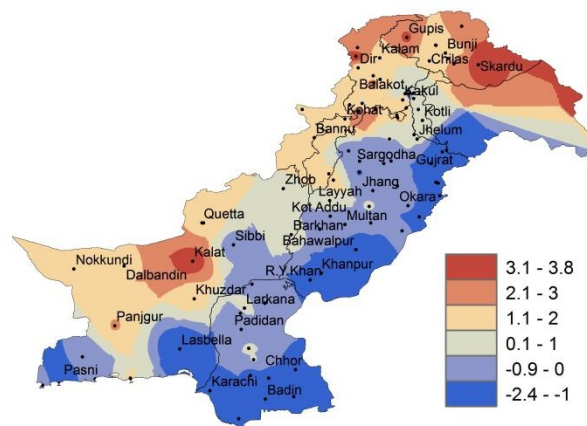
Wheat (Local White): *Good condition, full maturity stage*



I. **Actual max-temp**



II. **Departure of max-temp from Normal**



III. **Departure of max-temp from Previous Decade**

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

2(b) Past Weather for Sub-Regional Agricultural Plains (11th to 20th May, 2017)

2.6 Jhelum

Rainfall reported as 12.0mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 39%. Mean day temperature was 39.8°C while night temperature recorded as 24.7°C with 80.5hours bright sunshine duration. Wind speed recorded as 4.7km/hr with mean wind direction *south easterly*.

2.7 Lahore

Rainfall reported as 4.2mm during the decade; however weather remained cloudy for 07days. Average relative humidity recorded as 39%. Mean day temperature was 38.9°C while night temperature recorded as 26.1°C with 79.0hours bright sunshine duration. Wind speed recorded as 2.7km/hr with mean wind direction *south westerly*.

2.8 Sargodha

Rainfall reported as 20.7mm during the decade; however weather remained cloudy for 07days. Average relative humidity recorded as 44%. Mean day temperature was 39.3°C while night temperature recorded as 25.2°C with 79.3hours bright sunshine duration. Wind speed recorded 2.1km/hr with mean wind direction *variable*.

2.9 Multan

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 08days. Average relative humidity recorded as 29%. Mean day temperature was 41.1°C while night temperature recorded as 28.1°C with 87.5hours bright sunshine duration. Wind speed recorded 7.9km/hr with mean wind direction *variable*.

2.10 Khanpur

Rainfall reported as 6.8mm during the decade; however weather remained cloudy for 08days. Average relative humidity recorded as 34%. Mean day temperature was 42.1°C while night temperature recorded as 26.9°C with 87.1hours bright sunshine duration. Wind speed recorded 5.4km/hr with mean wind direction *south westerly*.

2.11 Sakrand

Rainfall reported as 13.0mm during the decade; however weather remained cloudy 5.4days. Average relative humidity recorded as 36%. Mean day temperature was 43.7°C while night temperature recorded as 27.1°C with 96.6hours bright sunshine duration. Wind speed recorded 5.4km/hr with wind direction *variable*.

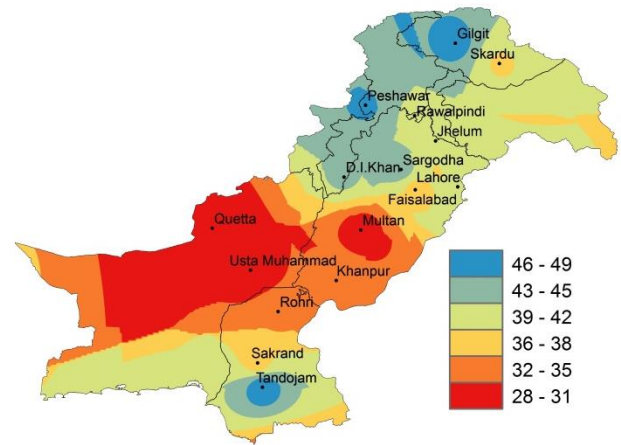


Figure.3: Relative Humidity in Percentage (%)

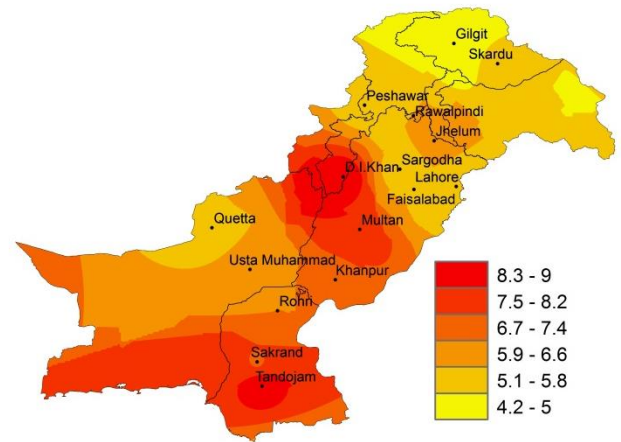


Figure.4: Reference Crop Evapotranspiration ET0 (mm/day)

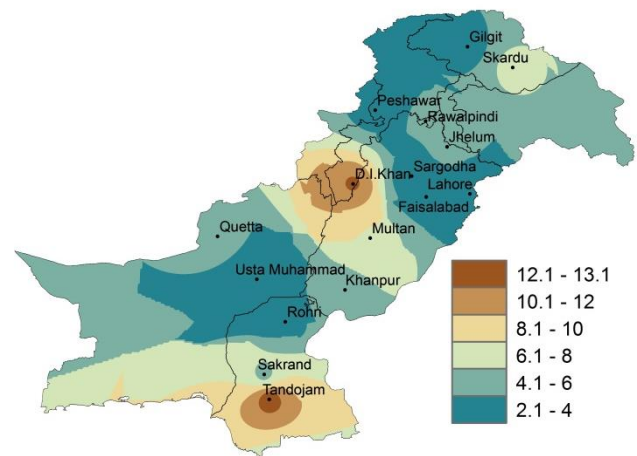


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Dry weather reported during the decade; however weather remained cloudy for 01day. Average relative humidity recorded as 33%. Mean day temperature was 43.4°C while night temperature recorded as 30.2°C with 99.4hours bright sunshine duration. Wind speed recorded 3.6km/hr with wind direction *variable*.

2.13 D.I. Khan

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 05days. Average relative humidity recorded as 43%. Mean day temperature was 46.6°C while night temperature recorded as 23.9°C with 86.6hours bright sunshine duration. Wind speed recorded 12.2km/hr with wind direction *south easterly*.

2.14 Peshawar

Rainfall reported as 2.0mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 46%. Mean day temperature was 38.1°C while night temperature recorded as 23.0°C with 74.9hours bright sunshine duration. Wind speed recorded as 2.6km/hr with mean wind direction *northerly*.

2.15 Skardu

Rainfall reported as 2.2mm during the decade; however weather remained cloudy for 08days. Average relative humidity recorded as 38%. Mean day temperature was 27.6°C while night temperature recorded as 11.6°C with 73.2hours bright sunshine duration. Wind speed recorded as 6.3km/hr with mean wind direction *south south-westerly*.

2.16 Gilgit

Rainfall reported as 10.0mm during the decade; however weather remained cloudy for 05days. Average relative humidity recorded as 47%. Mean day temperature was 29.6°C while night temperature recorded as 14.9°C with 60.3hours bright sunshine duration. Wind speed recorded as 3.1km/hr with mean wind direction *easterly*.

Ten Days Weather Advisory for Farmers
(22nd to 31st May, 2017)

3.1 Temperature Forecast

Day temperatures are expected slightly above normal in most parts of the country, however night temperature are expected normal in most of the agricultural parts of the 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

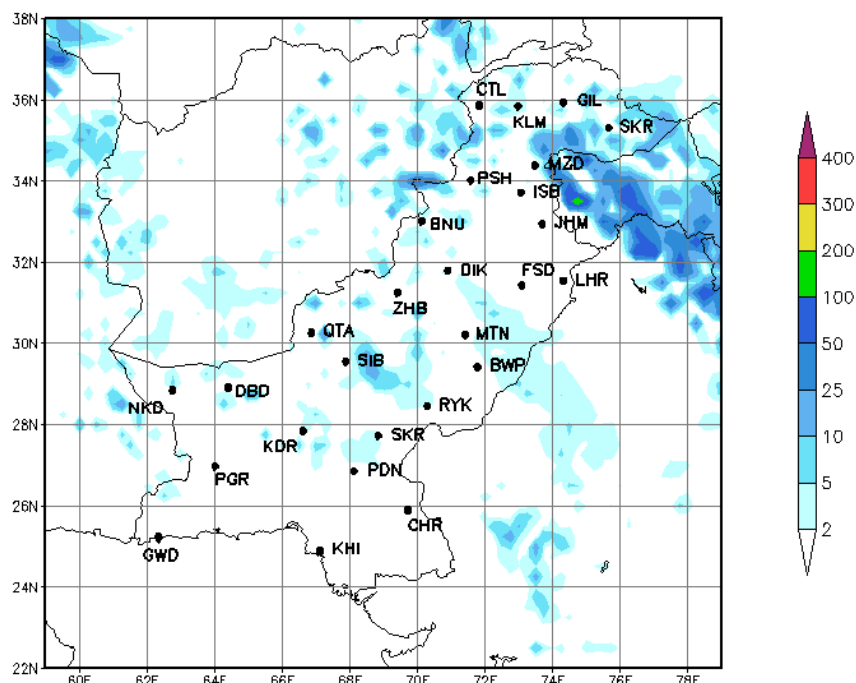
- ❖ **Punjab:** Light to moderate rainfall is expected in upper parts of the province.
- ❖ **Khyber Pakhtunkhwa:** Light to moderate rainfall is expected at isolated places of the province during the decade.
- ❖ **Sindh:** Light rainfall is expected at isolated places of province during first half of the current decade.
- ❖ **Balochistan:** Light to moderate rainfall is expected in most parts of the province during the decade.
- ❖ **Gilgit Baltistan:** Light to moderate rainfall is expected in most parts of G.B during the current decade.
- ❖ **Kashmir:** Light to moderate rainfall is expected in most parts of the Kashmir during the current decade.

3.4 Advisory for Farmers

- ❖ Farmers of southern Punjab and upper Sindh are advised to complete sowing of cotton crops in time so that best grains conditions may better be utilized during the whole crop life.
- ❖ Farmers of Peanut cultivation areas are advised to sow their crops if appropriate moisture is available in the fields.
- ❖ 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 standing crops and vegetables from the damaging effects of varying weather pattern.

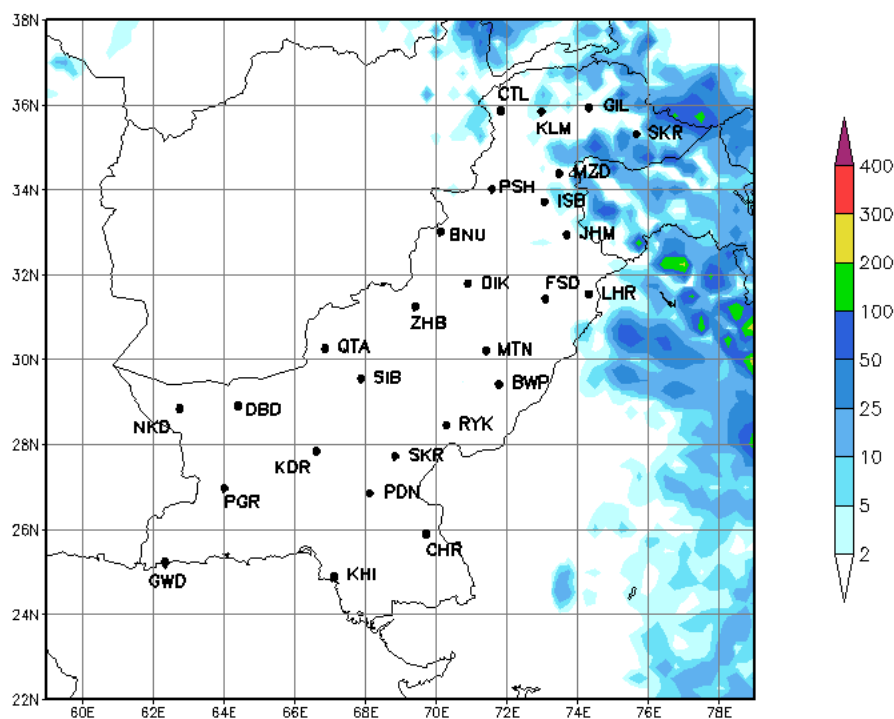
4.1 Precipitation Outlook (22nd to 24th May, 2017)

The forecast for the next three days (22nd to 24th) of the third decade of May 2017 shows that light to moderate is expected in GB, Kashmir, upper KPK however light rainfall is expected in isolated parts of southern Punjab, Baluchistan & Sindh. However dry weather is expected in rest parts of the country.



4.2 Precipitation Outlook (25th to 31st May, 2017)

The outlook for the last seven days (25th to 31st) of the third decade of May 2017 shows that light to moderate rainfall is expected in few parts of upper KP, northeastern Punjab, G. B & Kashmir. 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)