

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 places of Balochistan and Sindh during the last decade.
- ❖ Highest amount of rainfall recorded as 29.0 mm at Gilgit during the last decade.
- ❖ Highest maximum temperature recorded as 54.0°C at Turbat during the last decade.
- ❖ Light to moderate rain is expected in most parts of the country during the second half of the current decade, while dry weather is expected in southern parts of the country.
- ❖ Cotton growers are advised to irrigate their crops keeping in view the harsh weather conditions.
- ❖ Rice growers are advised to sow the crop in accordance with the recommendation by the agriculture experts.
- ❖ Farmers of Peanut cultivation areas are advised to complete sowing of 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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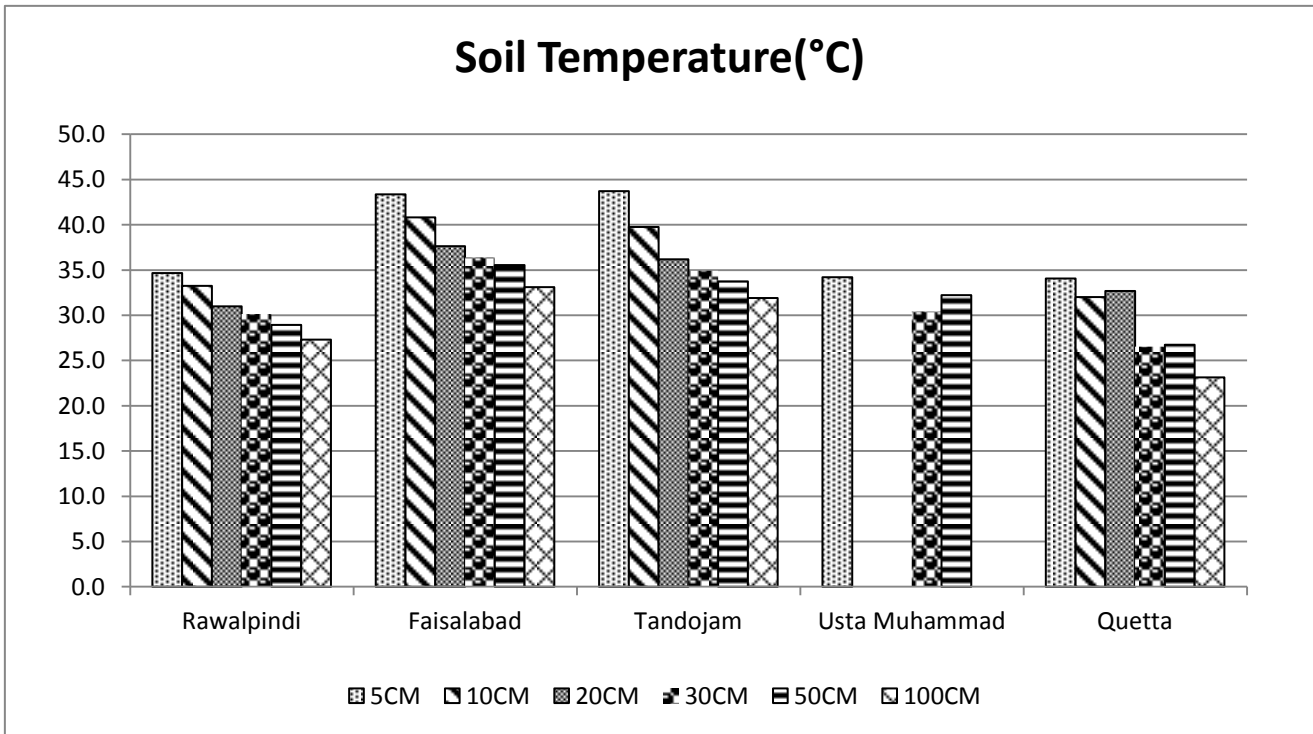
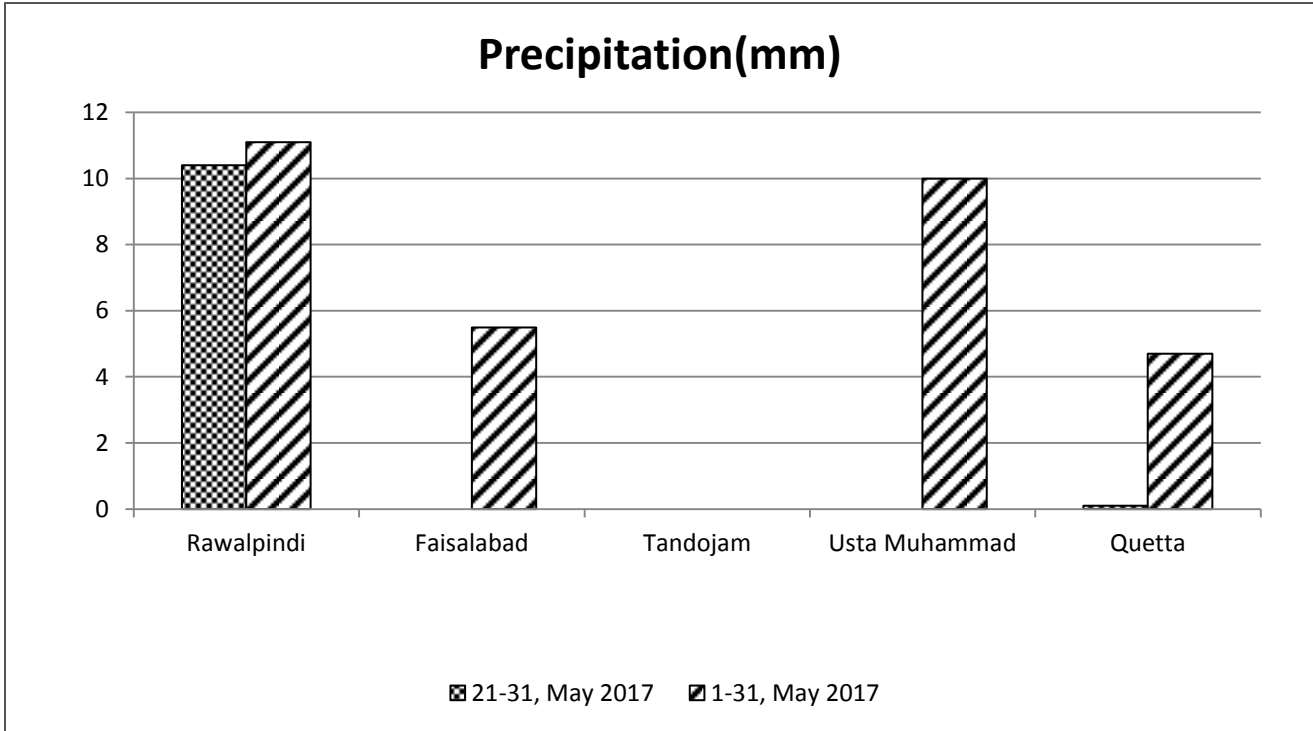
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Meteorological Conditions during 3rd decade of May, 2017

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	0.6	10.4	9.8	0.0	2.2	30.8	34.7	33.3	31.0	30.2	29.0	27.3	47	99.3	5.4	6.5
2	Faisalabad	0.8	0.0	-0.8	0.1	1.5	33.0	43.4	40.8	37.7	36.4	35.6	33.1	38	105.8	4.7	6.8
3	Jhelum	0.8	22.5	21.7	-0.6	-0.4	31.8	37.3	35.3	33.1	31.8	31.5	***	40	95.1	3.6	6.0
4	Lahore	1.3	4.0	2.7	-0.8	-0.5	32.2	34.6	34.0	31.9	30.6	***	28.4	43	89.5	3.3	5.8
5	Sargodha	2.1	0.1	-2.0	3.8	3.8	36.7	38.9	36.6	33.4	32.4	***	28.9	47	92.4	6.3	7.4
6	Multan	0.5	0.1	-0.4	0.2	2.9	35.8	***	***	***	***	***	***	31	105.6	6.8	8.1
7	Khanpur	0.0	0.0	0.0	1.0	1.5	35.9	***	38.5	38.0	37.8	37.6	34.5	41	98.4	5.3	7.3
8	Tandojam	0.0	0.0	0.0	0.9	-0.5	33.6	43.7	39.8	36.2	34.9	33.8	31.9	54	108.8	12.9	9.0
9	Sakrand ☆	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
11	Rohri	0.0	0.0	0.0	0.2	0.4	37.2	***	***	***	***	***	***	28	118.3	1.9	6.2
12	D.I Khan	0.3	1.0	0.7	1.9	1.6	34.1	35.7	34.8	32.3	33.7	21.7	29.4	39	95.5	10.9	9.1
13	Peshawar	0.4	0.0	-0.4	2.9	0.5	32.6	40.6	36.3	34.6	31.2	20.2	26.5	35	97.0	6.3	7.3
14	Usta .M	0.0	0.0	0.0	-1.0	0.1	37.9	34.2	***	***	30.4	32.2	***	31	***	4.8	7.9
15	Quetta	0.3	0.1	-0.2	1.6	2.2	26.1	34.1	32.0	32.7	26.6	26.8	23.2	18	120.0	5.7	6.9
16	Skardu	0.4	0.1	-0.3	3.4	1.3	20.3	***	***	***	***	***	***	33	100.5	2.5	4.9
17	Gilgit	1.1	0.0	-1.1	2.9	2.6	24.7	***	***	***	***	***	***	33	110.2	4.1	5.9

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 (21st to 31st May, 2017)

Light to moderate rainfall reported from most parts of Punjab, K.P, G.B, Kashmir while light rainfall reported from few places 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 Sialkot, Jhelum & Mandi Bahu Din. Decadal maximum and minimum both raised above normal by 0.5°C & 1.6°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 41%, 98hrs, 5.1km/hr and 6.8mm/day respectively.

1.1 Sindh

Light rainfall reported at one place of Sindh i.e. Dadu. Decadal maximum raised above normal by 0.5°C and minimum dropped below normal by 0.1°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 41%, 113.6hrs, 7.4km/hr and 7.6mm/day respectively.

1.2 Khyber Pakhtunkhwa (KP)

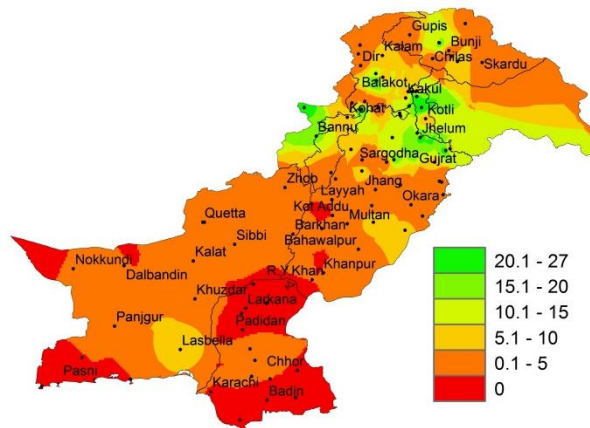
Light to moderate rainfall reported from agricultural plains of KP. Chief amount of rainfall received at Cherat, Parachinar & Saidu Sharif. Decadal maximum and minimum both raised above normal by 2.4°C & 1.1°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 37%, 96.3hrs, 8.6km/hr and 8.2mm/day respectively.

1.3 Balochistan

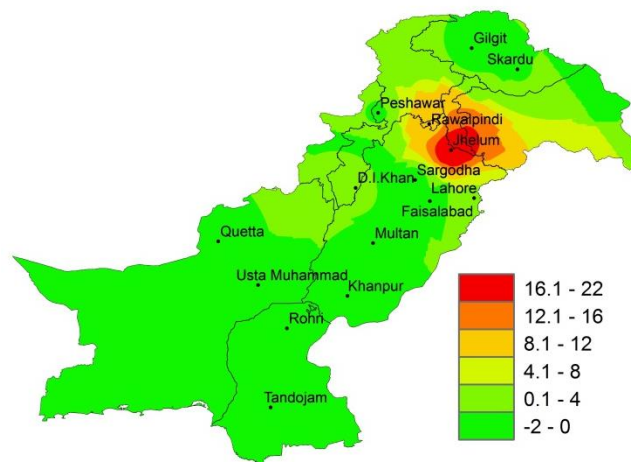
Light rainfall reported from few agricultural plains of Balochistan. Chief amount of rainfall received at Lasbella, Sibbi & Barkhan. Decadal maximum and minimum both raised above normal by 0.3°C & 1.2°C respectively in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 25%, 120.0hrs, 5.2km/hr and 7.4mm/day respectively.

1.4 Gilgit-Baltistan and Azad Jammu & Kashmir

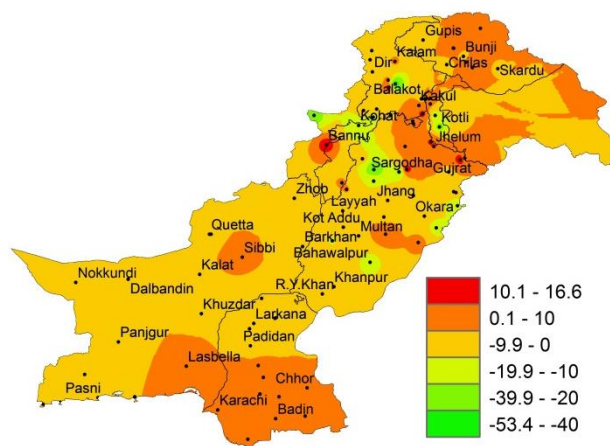
Light to moderate rainfall reported from agricultural plains of GB & Kashmir. Chief amount of rainfall received at Gilgit, Rawalakot & Garhi Dopatta. Decadal maximum and minimum both raised above normal by 3.2°C & 2.0°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 33%, 105.4hrs, 3.3km/hr and 5.4mm/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, 2017)

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

Rainfall reported as 10.4mm during the decade; however weather remained cloudy for 06days. Average relative humidity recorded as 47%. Mean day temperature was 37.8°C while night temperature recorded as 23.7°C with 99.3hours bright sunshine duration. Wind speed recorded as 5.4km/hr with mean wind direction *south easterly*.

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

Dry weather reported during the decade; however weather remained cloudy for 05days. Average relative humidity recorded as 38%. Mean day temperature was 39.9°C while night temperature recorded as 26.1°C with 105.8hours bright sunshine duration. Wind speed recorded as 4.7km/hr with mean wind direction *south easterly*.

Cotton: *Very Good condition, Emergence.*

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

Dry weather reported during the decade; however weather remained cloudy for 02days. Average relative humidity recorded as 54%. Mean day temperature was 41.5°C while night temperature recorded as 25.6°C with 108.8hours bright sunshine duration. Wind speed recorded as 12.9km/h with mean wind direction *south westerly*.

Cotton HH-906: *Good condition, third leaf stage.*

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

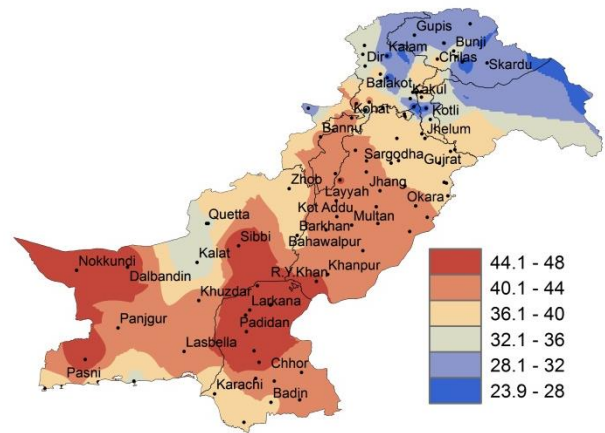
Dry weather reported during the decade; however weather remained cloudy for 08days. Average relative humidity recorded as 31%. Mean day temperature was 46.8°C while night temperature recorded as 29.0°C. Wind speed recorded as 4.78km/h with mean wind direction *south easterly*.

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

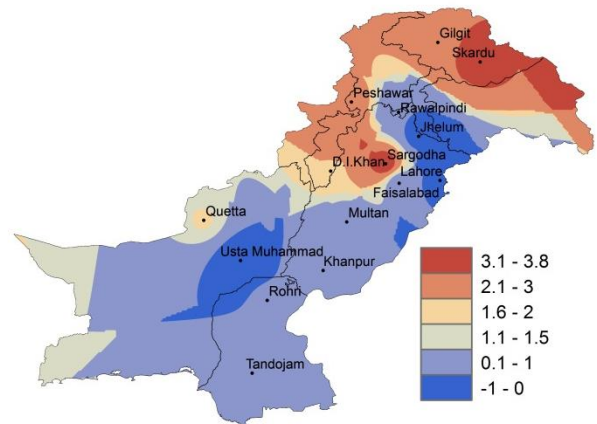
2.5 **RAMC, Quetta (Northern Balochistan)**

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 04days. Average relative humidity recorded as 18%. Mean day temperature was 34.0°C while night temperature recorded as 18.2°C with 120.0hours bright sunshine duration. Wind speed recorded as 5.7km/hr with mean wind direction *north westerly*.

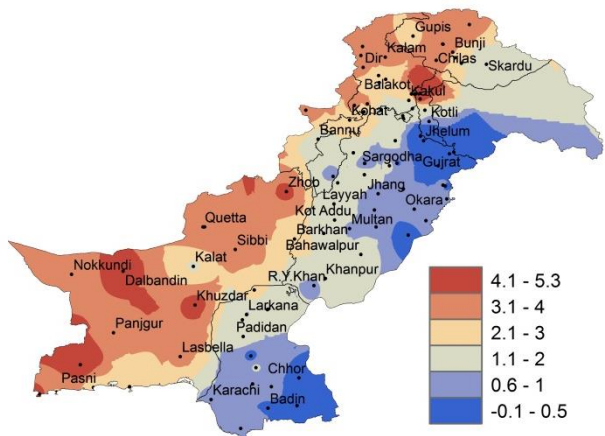
Wheat (Local White): *Good condition, full maturity stage*



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 (21st to 31st May, 2017)

2.6 Jhelum

Rainfall reported as 22.5mm during the decade; however weather remained cloudy for 09days. Average relative humidity recorded as 40%. Mean day temperature was 38.9°C while night temperature recorded as 24.7°C with 95.1hours bright sunshine duration. Wind speed recorded as 3.6km/hr with mean wind direction *south westerly*.

2.7 Lahore

Rainfall reported as 4.0mm during the decade; however weather remained cloudy for 07days. Average relative humidity recorded as 43%. Mean day temperature was 38.3°C while night temperature recorded as 26.0°C with 89.5hours bright sunshine duration. Wind speed recorded as 3.3km/hr with mean wind direction *south easterly*.

2.8 Sargodha

Rainfall reported as Trace (not measurable) during the decade; however weather remained cloudy for 05days. Average relative humidity recorded as 47%. Mean day temperature was 43.9°C while night temperature recorded as 29.5°C with 92.4hours bright sunshine duration. Wind speed recorded 6.3km/hr with mean wind direction *north easterly*.

2.9 Multan

Rainfall reported as Trace (not measurable) during the decade; however weather remained cloudy for 05days. Average relative humidity recorded as 31%. Mean day temperature was 41.9°C while night temperature recorded as 29.7°C with 105.6hours bright sunshine duration. Wind speed recorded 6.8km/hr with mean wind direction *southerly*.

2.10 Khanpur

Dry weather reported during the decade; however weather remained cloudy for 01days. Average relative humidity recorded as 41%. Mean day temperature was 43.4°C while night temperature recorded as 28.3°C with 98.4hours bright sunshine duration. Wind speed recorded 5.3km/hr with mean wind direction *south westerly*.

2.11 Rohri

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 28%. Mean day temperature was 44.8°C while night temperature recorded as 29.5°C with 118.3hours bright sunshine duration. Wind speed recorded 1.9km/hr with wind direction *south westerly*.

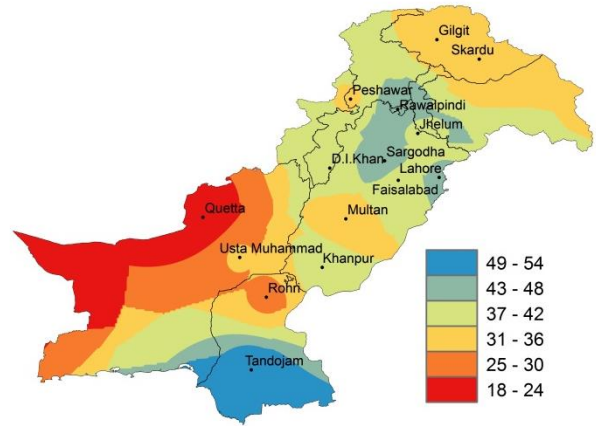


Figure.3: Relative Humidity in Percentage (%)

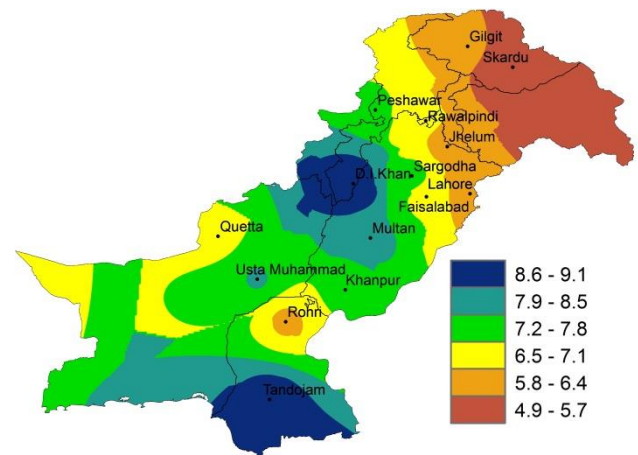


Figure.4: Reference Crop Evapotranspiration ET0 (mm/day)

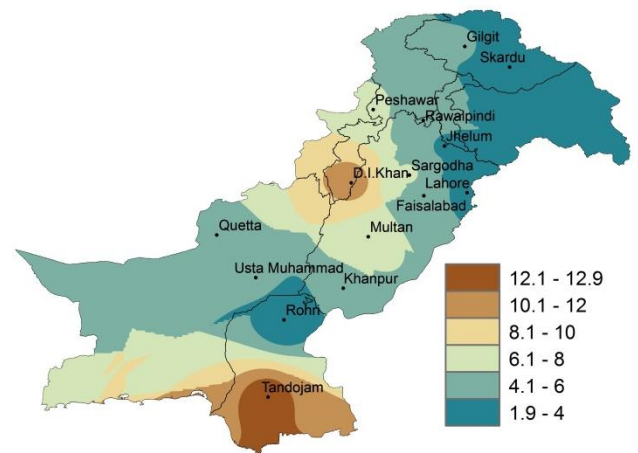


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 D.I. Khan

Rainfall reported as 1.0mm during the decade; however weather remained cloudy for 03days. Average relative humidity recorded as 39%. Mean day temperature was 42.2°C while night temperature recorded as 26.0°C with 95.5hours bright sunshine duration. Wind speed recorded 10.9km/hr with wind direction *southerly*.

2.13 Peshawar

Dry weather reported during the decade; however weather remained cloudy for 06days. Average relative humidity recorded as 35%. Mean day temperature was 40.7°C while night temperature recorded as 24.5°C with 97.0hours bright sunshine duration. Wind speed recorded as 6.3km/hr with mean wind direction *north westerly*.

2.14 Skardu

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 03days. Average relative humidity recorded as 33%. Mean day temperature was 29.1°C while night temperature recorded as 11.5°C with 100.5hours bright sunshine duration. Wind speed recorded as 2.5km/hr with mean wind direction *south easterly*.

2.15 Gilgit

Rainfall reported as 29.0mm during the decade; however weather remained cloudy for 04days. Average relative humidity recorded as 33%. Mean day temperature was 34.3°C while night temperature recorded as 15.1°C with 110.2 hours bright sunshine duration. Wind speed recorded as 4.1km/hr with mean wind direction *easterly*.

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

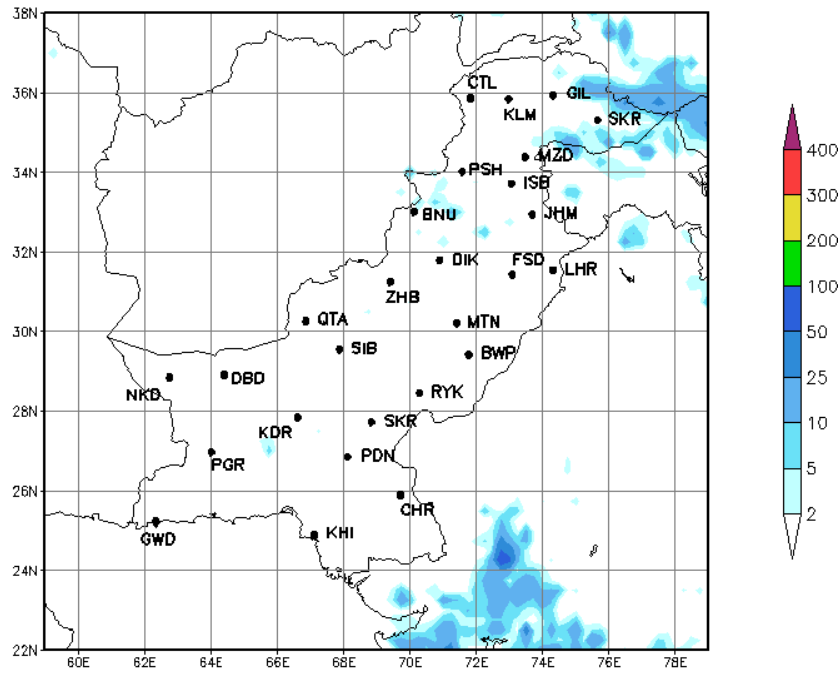
- ❖ **Punjab:** Light to moderate rainfall is expected in most parts of the province during the second half of the current decade.
- ❖ **Khyber Pakhtunkhwa:** Light to moderate rainfall is expected at isolated places of the province during the decade.
- ❖ **Sindh:** Light rainfall is expected at isolated places Hyderabad, Sukkur and MirpurKhas divisions during second half of the current decade.
- ❖ **Balochistan:** Light to moderate rainfall is expected in most parts Kalat, Naseerabad, Quetta and Sibbi divisions during the second half of the current 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

- ❖ Cotton growers are advised to irrigate their crops keeping in view the harsh weather conditions.
- ❖ Rice growers are advised to sow the crop in accordance with the recommendation by the agriculture experts.
- ❖ Farmers of Peanut cultivation areas are advised to complete sowing of 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.

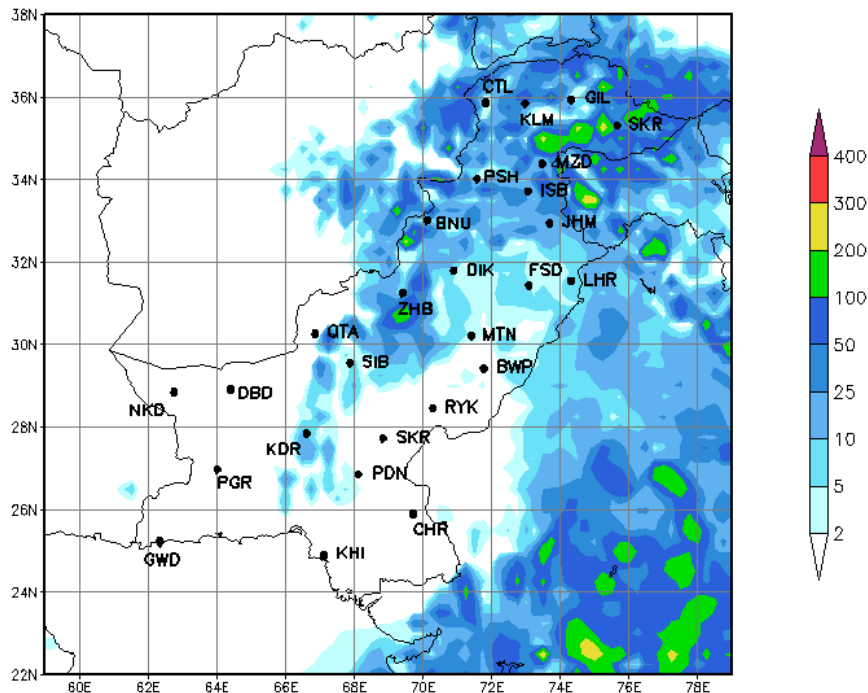
4.1 Precipitation Outlook (1st to 3rd June, 2017)

The forecast for the first three days (1st to 3rd) of the first decade of June 2017 shows that light rainfall is expected at a few places in GB, Kashmir, KPK and Baluchistan. However dry weather is expected in rest parts of the country.



4.2 Precipitation Outlook (4th to 10th June, 2017)

The outlook for the last seven days (4th to 10th) of the first decade of June 2017 shows that light to moderate rainfall is expected in most parts of the country. However, dry weather may prevail in Southern Punjab, Sindh and western Baluchistan.



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)