

Decadal Agromet Bulletin of Pakistan



Highlights...

- ❖ Light to moderate rainfall reported from most of the agricultural plains of the country during the last decade.
- ❖ Highest amount of rainfall recorded as 167.5mm at T.T. Singh during the last decade.
- ❖ Highest maximum temperature recorded as 50.0°C at Turbat during the last decade.
- ❖ Generally dry and hot weather is expected in most parts of the country during the current decade; however light to moderate rainfall is expected in most parts of Punjab, KP, GB and Kashmir. Besides, light to moderate rainfall is expected at scattered places of Baluchistan and coastal belt of Sindh during the decade.
- ❖ Measures may be taken to preserve the standing crops/orchids/fodder from the damaging impacts of extreme hot and dry weather conditions in the plains areas as well as strong winds/hails storms in the particular areas of upper half of the country.
- ❖ Due to higher temperature Pinkboll worm attack is observed on April sowing Cotton crop, so farmers are advised to take adoptive measures especially the use of PB ropes in consultancy with plant protection department.
- ❖ Growers of Millet/Sorghum are advised to complete sowing of the crop in accordance with the recommendation by the agricultural experts.

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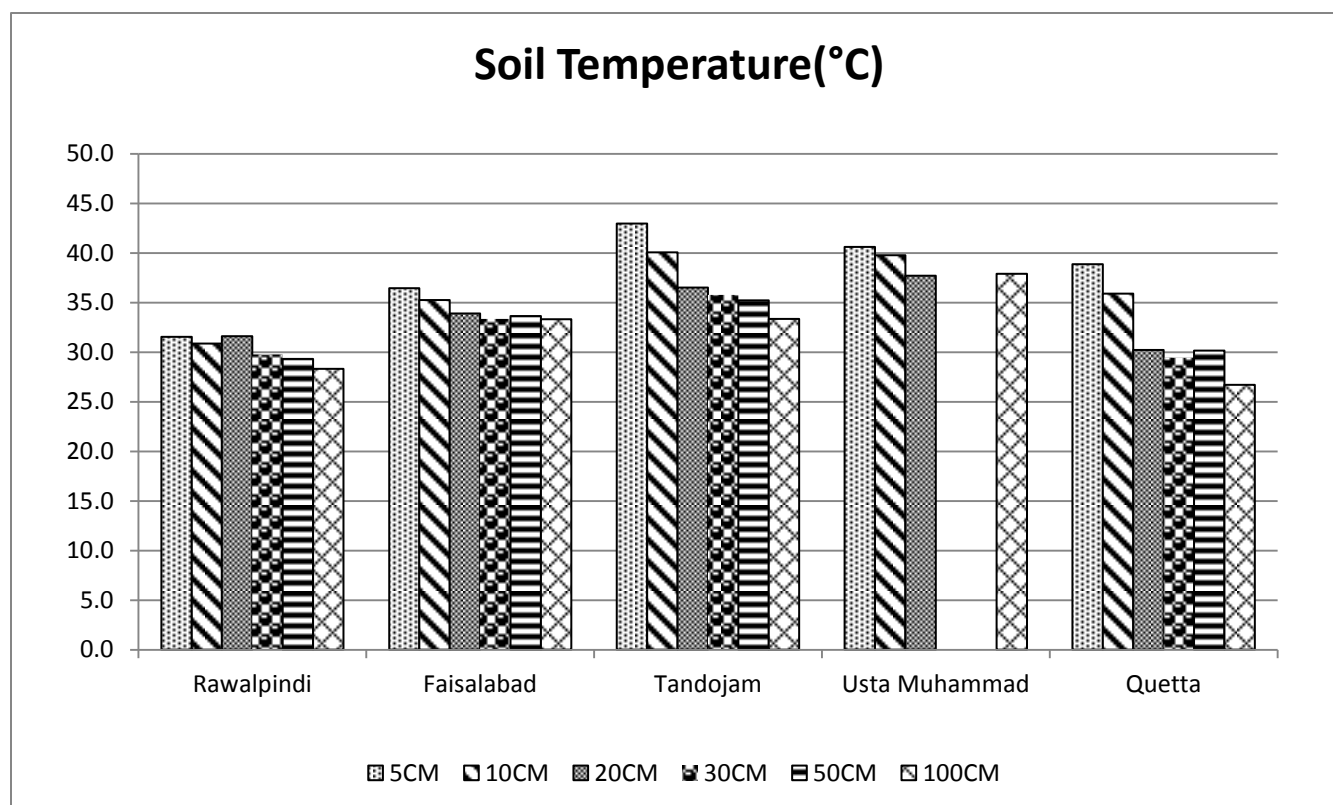
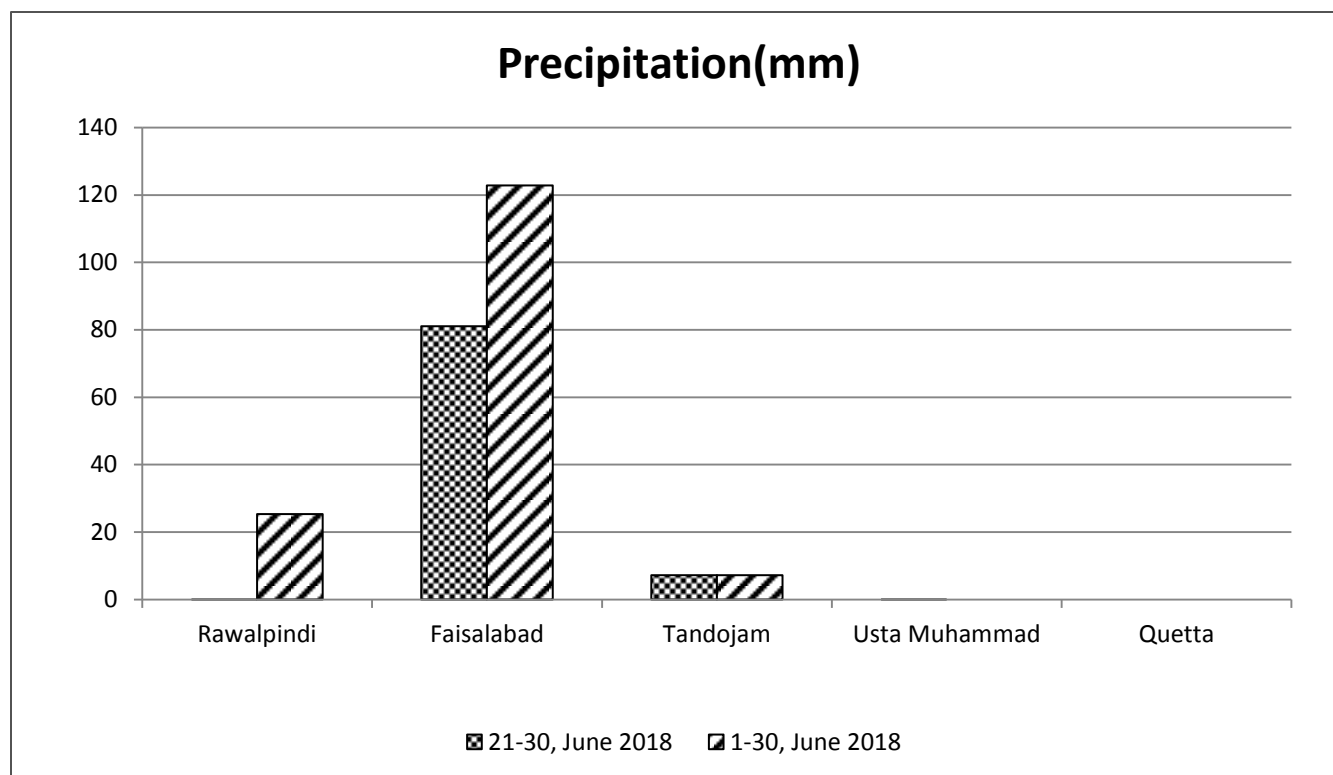
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Meteorological Conditions during 3rd Decade of June, 2018

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	5.4	0.1	-5.3	0.0	-1.3	30.2	31.6	30.9	31.6	29.8	29.3	28.3	47	57.9	2.8	4.8
2	Faisalabad	1.9	81.0	79.1	-2.2	-1.9	31.0	36.5	35.3	33.9	33.4	33.7	33.3	55	67.3	3.6	5.2
3	Jhelum	4.2	33.7	29.5	0.2	0.1	32.9	40.0	38.0	36.1	35.5	35.3	***	47	59.3	5.2	5.7
4	Lahore	2.2	85.3	83.1	-0.7	-1.7	31.7	33.3	32.8	31.7	31.4	***	30.2	58	56.5	1.4	4.4
5	Sargodha	3.3	7.2	3.9	-3.7	-1.2	31.7	35.4	33.8	31.8	31.5	***	30.1	58	49.5	2.2	4.4
6	Multan	1.0	0.2	-0.8	-2.7	-1.3	33.5	***	***	***	***	***	***	49	54.9	6.3	5.9
7	Khanpur	0.5	11.4	10.9	-1.7	-0.8	34.0	***	38.4	38.3	38.5	38.7	36.4	53	65.8	5.8	6.1
8	Tandojam	0.7	7.2	6.5	-0.5	-1.9	31.4	43.0	40.1	36.5	35.8	35.2	33.4	63	68.5	10.4	6.5
9	Sakrand☆	1.7	0.0	-1.7	-0.4	1.0	34.1	44.6	***	***	***	***	35.6	49	91.1	7.3	7.2
11	Rohri	0.0	20.0	20.0	-0.3	-0.8	35.3	***	***	***	***	***	***	46	96.3	2.6	6.1
12	D.I Khan	0.8	6.0	5.2	-0.6	0.4	33.2	37.9	35.7	34.2	34.0	22.8	***	47	84.1	10.3	8.0
13	Peshawar	1.3	0.0	-1.3	-0.2	-2.4	32.0	39.4	36.1	32.0	30.6	29.2	28.6	51	73.9	4.0	5.7
14	Usta .M	1.8	0.0	-1.8	1.8	0.0	36.9	40.6	39.8	37.7	***	***	37.9	44	***	4.7	7.5
15	Quetta	0.0	0.0	0.0	-1.8	0.1	27.3	38.9	35.9	30.2	29.5	30.2	26.7	28	97.4	6.2	6.6
16	Skardu	0.4	31.8	31.4	-6.6	-1.6	18.3	***	***	***	***	***	***	56	36.1	4.1	3.6
17	Gilgit	0.7	2.0	1.3	-3.7	0.9	23.7	***	***	***	***	***	***	42	38.6	3.5	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 June, 2018



Past Weather (21st to 30th June, 2018)

Light to moderate rainfall reported from most of the agricultural plains of the country during the last decade.

1.1 Punjab

Light to moderate rainfall reported most of the agricultural plains of the Punjab. Chief amount of rainfall is received at T.T Singh, Shorkot & Faisalabad. Decadal maximum & minimum both dropped below normal by 1.5°C & 1.2°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 52%, 58.7hrs, 3.9km/hr and 5.2mm/day respectively.

1.2 Sindh

Light to moderate rainfall reported from most of the agricultural plains of Sindh. Chief amount of rainfall is received at Chorr, Mirpur Khas & Mithi. Decadal maximum & minimum both dropped below normal by 0.4°C & 0.6°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 53%, 85.3hrs, 6.8km/hr and 6.6mm/day respectively.

1.3 Khyber Pakhtunkhwa (KP)

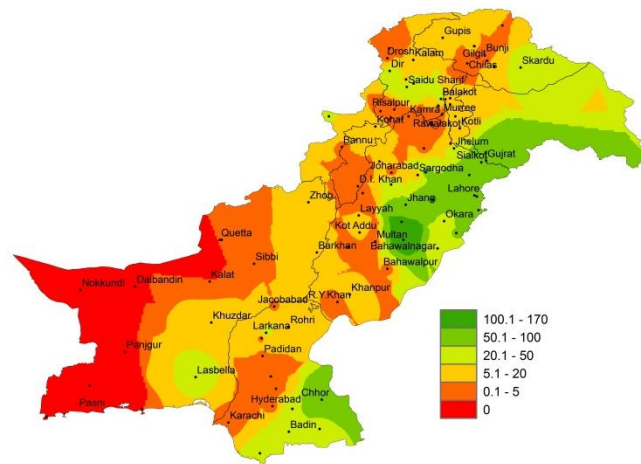
Light to moderate rainfall reported from most of the agricultural plains of KP. Chief amount of rainfall is received at Saidu Sharif, Balakot & Dir. Decadal maximum & minimum both dropped below normal by 0.4°C & 1.0°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 49%, 79.0hrs, 7.2km/hr and 6.9mm/day respectively.

1.4 Balochistan

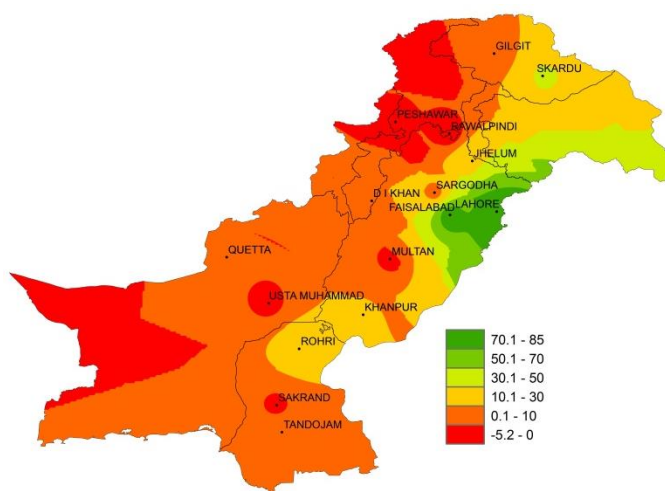
Light to moderate rainfall reported from few place of Balochistan. Chief amount of rainfall is received at Lasbella, Barkhan & Khuzdar. Decadal maximum remained normal & minimum raised above normal by 1.0°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 36%, 97.4hrs, 5.5km/hr and 7.1mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

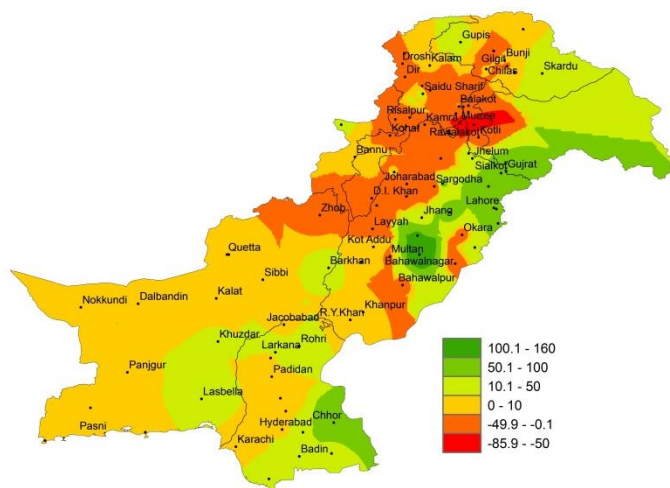
Light to moderate rainfall reported from most of the agricultural plains of G.B and Kashmir. Chief amount of rainfall is received at Skardu, Rawalakot & Kotli. Decadal maximum & minimum both dropped below normal by 5.2°C & 0.4°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 49%, 37.4hrs, 3.8km/hr and 3.9mm/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(a) Past Weather for Major Agricultural Plains (21st to 30th June, 2018)

2.1 RAMC, Rawalpindi (Potohar region)

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 01day during the decade. Average relative humidity recorded as 7%. Mean day temperature was 37.4°C while night temperature recorded as 22.9°C with 57.9hours bright sunshine duration. Wind speed recorded as 2.8km/hr with mean wind direction *westerly*.

2.2 RAMC, Faisalabad (Central Punjab)

Rainfall reported as 81.0mm during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 55%. Mean day temperature was 36.8°C while night temperature recorded as 25.1°C with 67.33hours bright sunshine duration. Wind speed recorded as 3.6km/hr with mean wind direction *east south-easterly*.

Cotton: *Very Good condition, budding stage completed*

2.3 RAMC, Tandojam (Lower Sindh)

Rainfall reported as 7.2mm during the decade; Average relative humidity recorded as 63%. Mean day temperature was 37.7°C while night temperature recorded as 25.0°C with 68.5hours bright sunshine duration. Wind speed recorded as 10.4km/h with mean wind direction *south westerly*.

Cotton (CIM-602): *Good condition, budding stage*

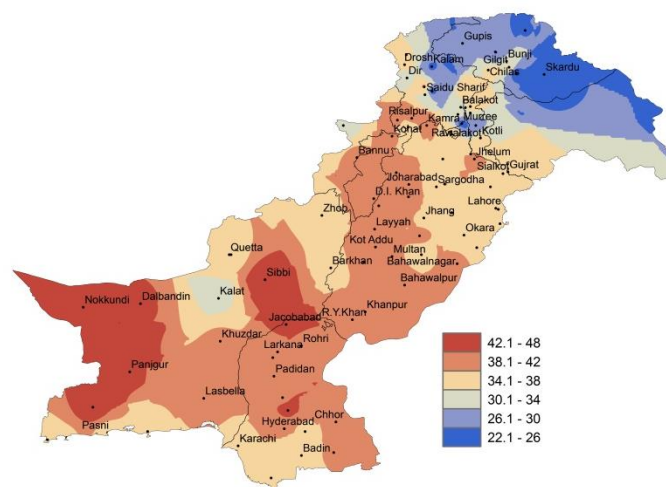
2.4 RAMC, Usta Muhammad (Eastern Balochistan)

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 44%. Mean day temperature was 44.8°C while night temperature recorded as 29.0°C. Wind speed recorded as 4.7km/h with mean wind direction *north easterly*.

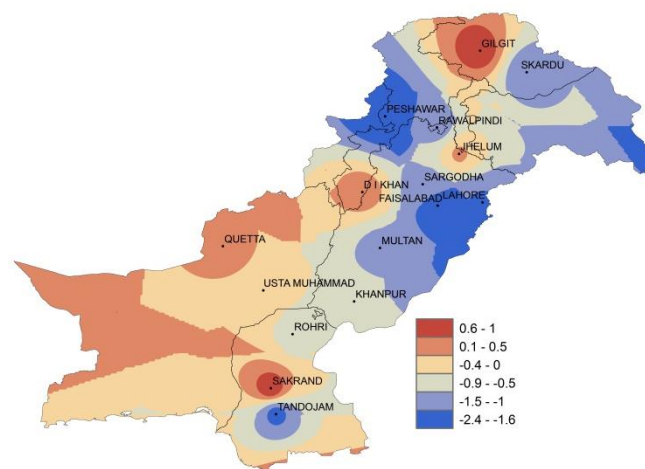
Rice: *Good condition, Paneri transplantation in process*

2.5 RAMC, Quetta (Northern Balochistan)

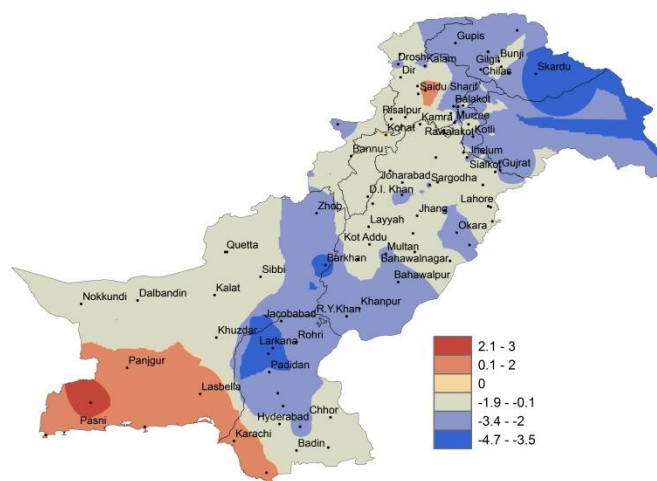
Dry weather reported during the decade; however weather remained cloudy for 06days during the decade. Average relative humidity recorded as 28%. Mean day temperature was 34.0°C while night temperature recorded as 20.6°C with 97.4hours bright sunshine duration. Wind speed recorded as 6.2km/hr with mean 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 30th June, 2018)

2.6 Jhelum

Rainfall reported as 33.7mm during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 47%. Mean day temperature was 38.6°C while night temperature recorded as 27.1°C with 59.3hours bright sunshine duration. Wind speed recorded as 5.2km/hr with mean wind direction *south easterly*.

2.7 Lahore

Rainfall reported as 85.3mm during the decade; however weather remained cloudy for 06days during the decade. Average relative humidity recorded as 58%. Mean day temperature was 36.6°C while night temperature recorded as 26.7°C with 56.5hours bright sunshine duration. Wind speed recorded as 1.4km/hr with mean wind direction *northerly*.

2.8 Sargodha

Rainfall reported as 7.2mm during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 58%. Mean day temperature was 36.5°C while night temperature recorded as 28.8°C with 49.5hours bright sunshine duration. Wind speed recorded 2.2km/hr with mean wind direction *easterly*.

2.9 Multan

Rainfall reported as 0.2mm during the decade; however weather remained cloudy for 10days during the decade. Average relative humidity recorded as 49%. Mean day temperature was 38.3°C while night temperature recorded as 28.6°C with 54.9hours bright sunshine duration. Wind speed recorded 6.3km/hr with mean wind direction *south westerly*.

2.10 Khanpur

Rainfall reported as 11.4mm during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 53%. Mean day temperature was 39.8°C while night temperature recorded as 28.2°C with 65.8hours bright sunshine duration. Wind speed recorded 5.8km/hr with mean wind direction *south westerly*.

2.11 Sakrand

Dry weather reported during the decade; however weather remained cloudy for 03 days during the decade. Average relative humidity recorded as 49%. Mean day temperature was 40.0°C while night temperature recorded as 28.2°C with 91.1hours bright sunshine duration. Wind speed recorded 7.3km/hr with wind direction *southerly*.

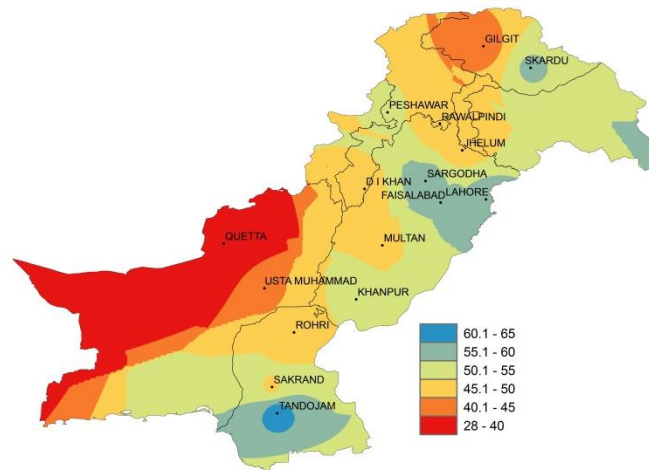


Figure.3: Relative Humidity in Percentage (%)

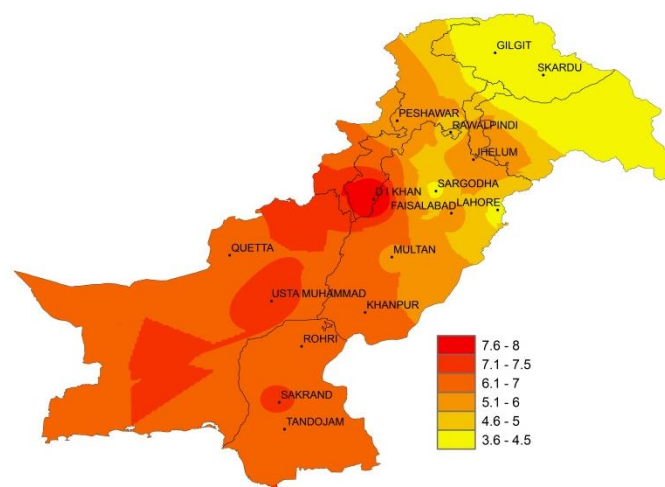


Figure.4: Reference Crop Evapotranspiration ETo (mm/day)

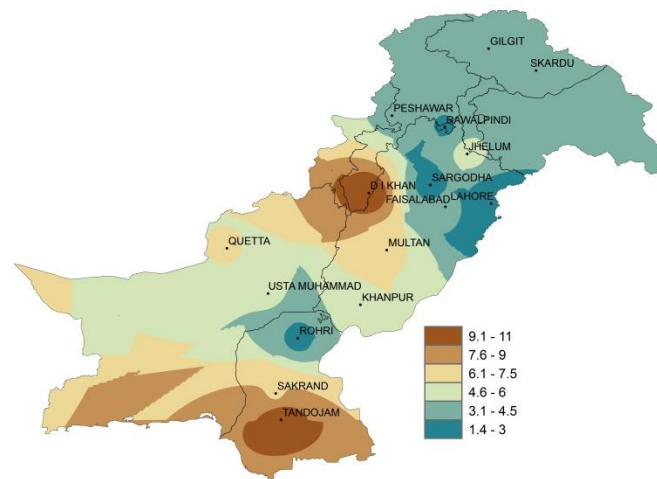


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Rainfall reported as 20.0mm during the decade; however weather remained cloudy for 06days during the decade. Average relative humidity recorded as 46%. Mean day temperature was 41.6°C while night temperature recorded as 29.0°C with 96.3hours bright sunshine duration. Wind speed recorded 2.6km/hr with wind direction *south easterly*.

2.13 D.I. Khan

Rainfall reported as 6.0mm during the decade; however weather remained cloudy for 07days during the decade. Average relative humidity recorded as 47%. Mean day temperature was 39.8°C while night temperature recorded as 26.5°C with 84.1hours bright sunshine duration. Wind speed recorded as 10.3km/hr with mean wind direction *north easterly*.

2.14 Peshawar

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 09days during the decade. Average relative humidity recorded as 51%. Mean day temperature was 39.3°C while night temperature recorded as 24.7 °C with 73.9hours bright sunshine duration. Wind speed recorded as 4.0km/hr with mean wind direction *north westerly*.

2.15 Skardu

Rainfall reported as 31.8mm during the decade; however weather remained cloudy for 10days during the decade. Average relative humidity recorded as 56. Mean day temperature was 24.4°C while night temperature recorded as 12.2°C with 36.1hours bright sunshine duration. Wind speed recorded as 4.1km/hr with mean wind direction *south south-easterly*.

2.16 Gilgit

Rainfall reported as 2.0mm during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 42%. Mean day temperature was 30.9°C while night temperature recorded as 16.5°C with 38.6hours bright sunshine duration. Wind speed recorded as 3.5km/hr with mean wind direction *variable*.

Ten Days Weather Advisory for Farmers **(2nd to 10th July, 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

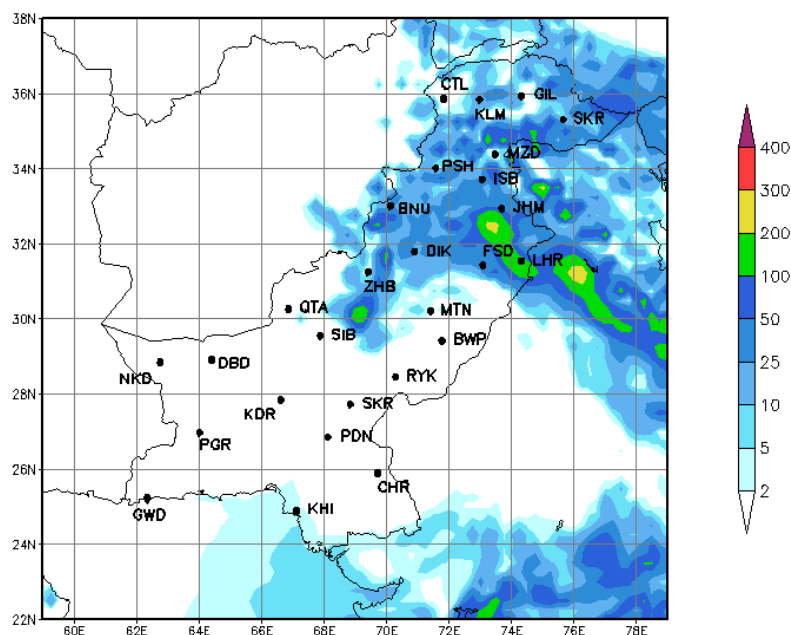
- ❖ **Punjab:** Hot and dry weather is expected in most of southern parts of the province however light to moderate rainfall is expected upper and central parts of the province during the decade.
- ❖ **Khyber Pakhtunkhwa:** Light to moderate rain-thunderstorm is expected at most places of the province during the decade.
- ❖ **Sindh:** Hot and dry weather is expected in most parts of the province however light to moderate rainfall is expected at coastal belt and central parts during the decade.
- ❖ **Balochistan:** Hot and dry weather is expected in most parts of the province however light to moderate rainfall is expected at scattered places in eastern parts during the decade.
- ❖ **Gilgit-Baltistan:** Light to moderate rain-thunderstorm with gusty winds is expected at most of places during the decade.
- ❖ **Kashmir:** Light to moderate rain-thunderstorm is expected at most 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/fodder from the damaging impacts of extreme hot and dry weather conditions in the lower plains as well as strong winds/hails storms in the particular areas of upper half of the country.
- ❖ 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.
- ❖ Growers of Millet/Sorghum are advised to complete sowing of the crop in accordance with the recommendation by the agricultural experts.

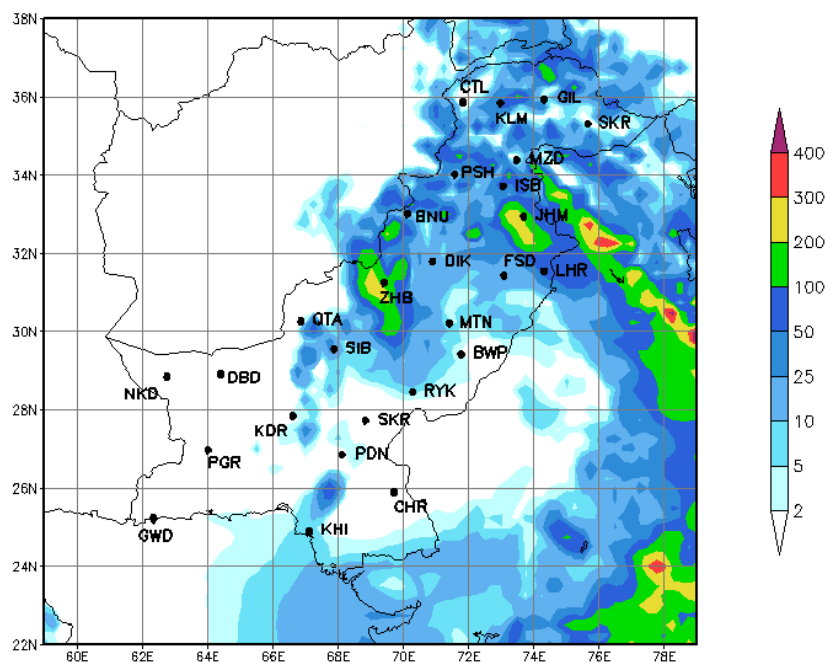
4.1 Precipitation Outlook (2nd to 4th July, 2018)

The forecast for the next three days (2nd to 4th) of the first decade of July, 2018 shows that mostly hot and dry weather is expected in most parts of the country in the lower half. However, light to moderate rainfall is expected at most of the places of Punjab, KP, eastern Baluchistan, G.B and Kashmir.



4.2 Precipitation Outlook (24th to 30th June, 2018)

The outlook for the last six days (5th to 10th) of the first decade of July, 2018 shows that mostly hot and dry weather is expected in most of south-western parts of the country. While light to moderate rainfall is expected in Punjab, KP, northern-eastern Baluchistan, G.B and Kashmir. Besides, light rainfall is expected in coastal belt of Sindh.



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)