

Decadal Agromet Bulletin of Pakistan



Highlights...

- ❖ Light to moderate rainfall reported from most of the agricultural plains of Punjab, K.P & Kashmir, however; light rainfall reported from few parts of Sindh and Baluchistan during the last decade.
- ❖ Highest amount of rainfall recorded as 107.1mm at Rawalakot during the last decade.
- ❖ Highest maximum temperature recorded as 51.0°C at Usta Muhammad 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 rainfall is expected at scattered places of Baluchistan and coastal belt of Sindh during second half of 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 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.

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*

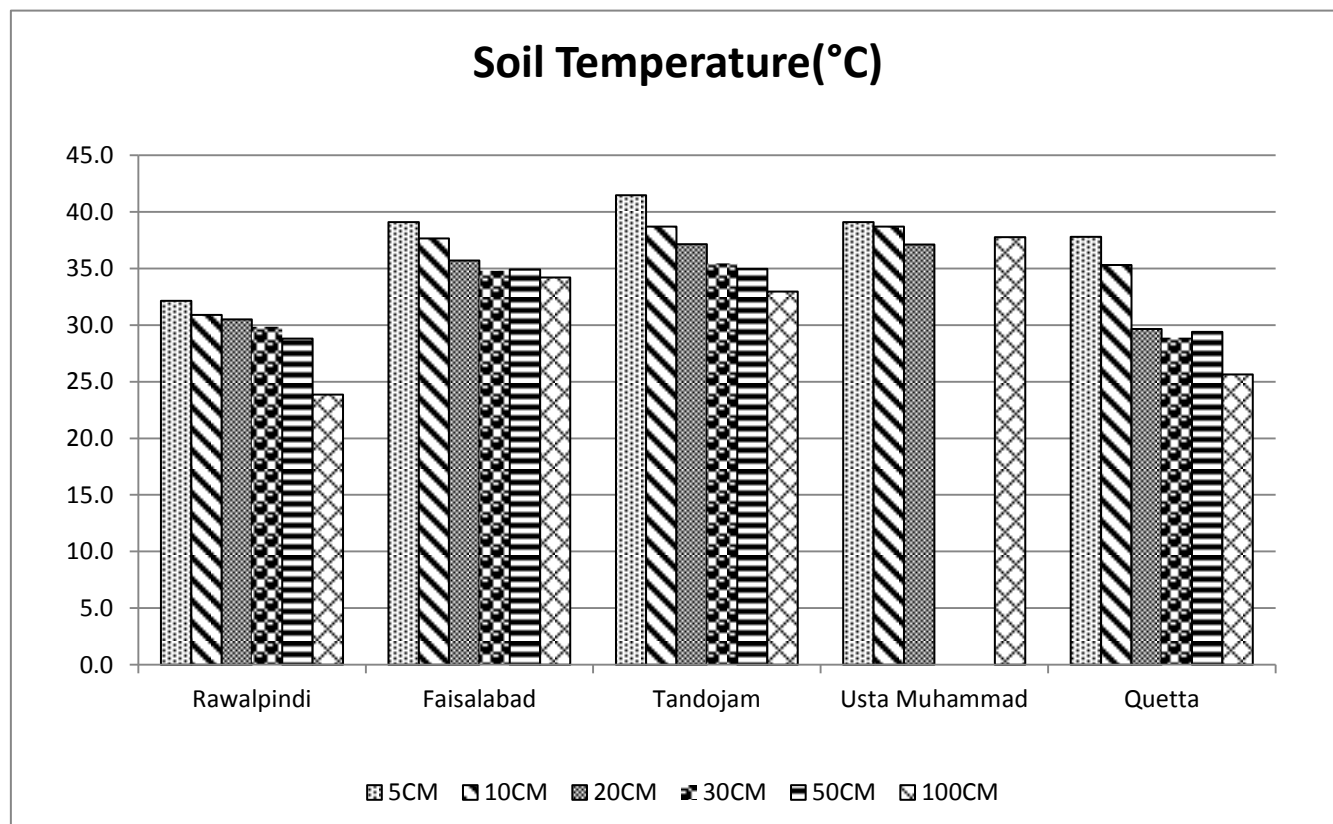
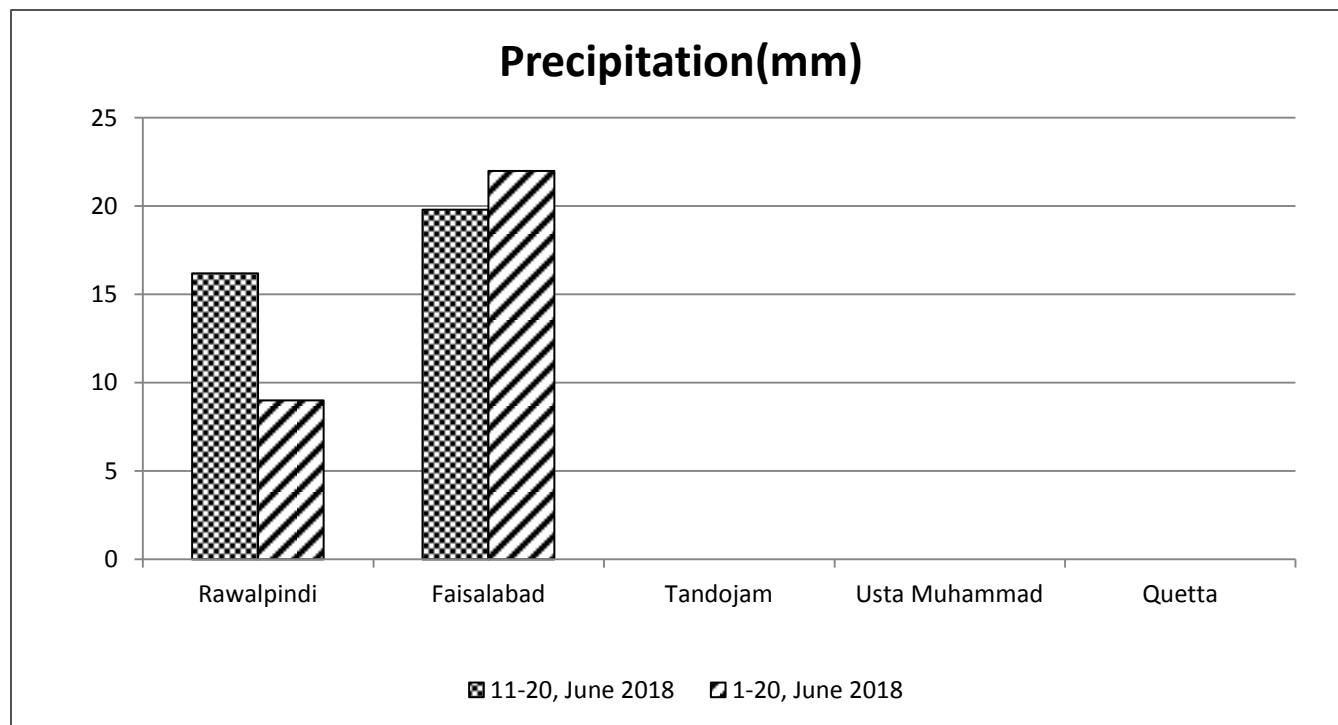
Phone: [+92-51-9250592](tel:+92-51-9250592) Email: info@namc.pmd.gov.pk

Meteorological Conditions during 2nd 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	3.5	16.2	12.7	1.1	0.1	30.8	32.2	30.9	30.5	29.9	28.8	23.9	48	80.4	3.0	5.4
2	Faisalabad	2.7	19.8	17.1	-0.3	1.4	33.1	39.1	37.7	35.7	34.8	34.9	34.2	52	67.5	6.1	6.2
3	Jhelum	2.8	0.0	-2.8	1.7	0.7	34.0	42.3	39.7	36.8	35.3	35.3	***	39	71.0	6.2	6.7
4	Lahore	3.5	8.4	4.9	-0.7	0.3	33.0	35.0	34.4	32.6	31.9	***	33.8	53	53.6	0.7	4.2
5	Sargodha	1.8	51.5	49.7	-1.0	0.7	33.4	38.1	36.4	33.9	33.2	***	30.7	53	58.5	5.4	5.7
6	Multan	0.4	2.2	1.8	-1.1	0.1	34.7	***	***	***	***	***	***	47	74.1	9.1	7.5
7	Khanpur	0.2	6.4	6.2	1.0	0.3	35.7	***	39.2	38.8	38.8	38.9	36.2	47	73.5	9.7	8.0
8	Tandojam	0.0	0.0	0.0	-0.3	-0.9	32.4	41.5	38.7	37.2	35.5	35.0	33.0	56	80.6	19.0	9.0
9	Sakrand☆	0.0	5.0	5.0	1.7	1.2	35.9	45.9	***	***	***	***	35.3	39	108.0	11.0	9.8
11	Rohri	0.3	0.0	-0.3	1.5	-2.5	35.8	***	***	***	***	***	***	40	94.4	3.9	6.8
12	D.I Khan	1.5	5.0	3.5	0.4	1.7	34.0	38.8	36.6	34.5	33.6	22.4	***	49	69.9	11.9	8.1
13	Peshawar	0.8	18.0	17.2	1.5	-1.8	32.1	39.2	36.0	32.0	30.5	29.5	28.2	49	80.4	2.5	5.4
14	Usta .M	0.0	0.0	0.0	3.6	5.8	40.8	39.1	38.7	37.1	***	***	37.8	34	***	3.1	7.0
15	Quetta	0.0	0.0	0.0	-0.2	3.3	28.1	37.8	35.3	29.7	28.9	29.4	25.7	18	103.7	7.0	7.2
16	Skardu	0.3	1.2	0.9	-0.4	-0.6	21.2	***	***	***	***	***	***	32	73.3	4.5	5.0
17	Gilgit	0.3	0.9	0.6	-1.4	2.2	25.2	***	***	***	***	***	***	34	71.0	4.1	5.2

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 (11th to 20th June, 2018)

Light to moderate rainfall reported from most of the agricultural plains of Punjab, K.P & Kashmir. However; light rainfall reported from few parts of the Sindh and Balochistan 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 Murree, Noorpur Thal & Sargodha. Decadal maximum & minimum both raised above normal by 0.1°C & 0.5°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 48%, 68.4hrs, 5.7km/hr and 6.2mm/day respectively.

1.2 Sindh

Light rainfall reported from few of the agricultural plains of Sindh. Chief amount of rainfall is received at Karachi, Padidan & Moen-Jo-Daro. Decadal maximum raised above normal by 1.0°C & minimum dropped below normal by 0.7°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 45%, 94.3hrs, 11.3km/hr and 8.5mm/day respectively.

1.3 Khyber Pakhtunkhwa (KP)

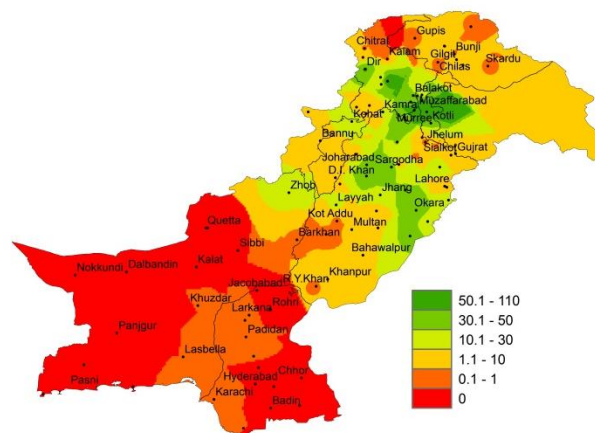
Light to moderate rainfall reported from most of the agricultural plains of KP. Chief amount of rainfall is received at Malam Jabba, Dir & Kakul. Decadal maximum raised above normal by 0.9°C & minimum remained normal, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 49%, 75.2hrs, 7.2km/hr and 6.8mm/day respectively.

1.4 Balochistan

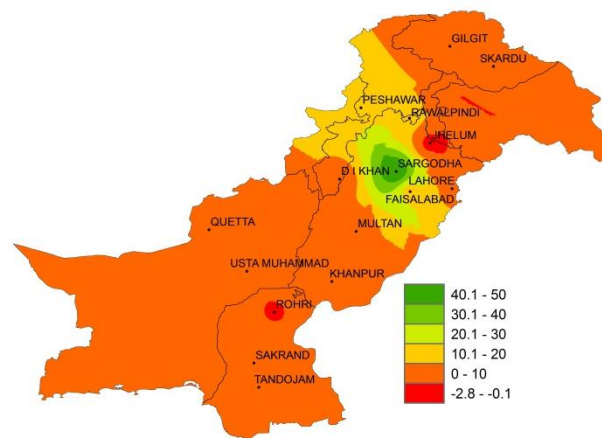
Light rainfall reported from few place of Balochistan. Chief amount of rainfall is received at Zhob & Barkhan. Decadal maximum & minimum both raised above normal by 1.7°C & 4.6°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 26%, 103.7hrs, 5.1km/hr and 7.1mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

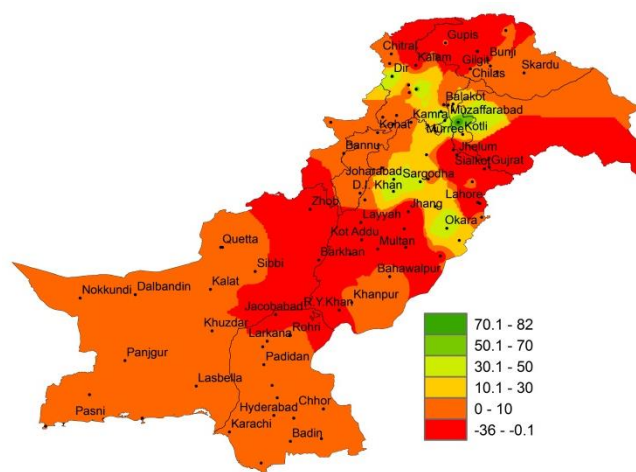
Light to moderate rainfall reported from most of the agricultural plains of G.B and Kashmir. Chief amount of rainfall is received at Rawalakot, Garhi Dopatta & Kotli. Decadal maximum dropped below normal by 0.9°C & minimum raised above normal by 0.8°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 33%, 72.3hrs, 4.3km/hr and 5.1mm/day respectively.



I. Actual rainfall



II. Departure of rainfall from Normal



III. Departure of rainfall from Previous Decade

Figure.1: Rainfall distribution during present decade (mm)

2(a) **Past Weather for Major Agricultural Plains** **(11th to 20th June, 2018)**

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

Rainfall reported as 16.2mm during the decade; however weather remained cloudy for 06days during the decade. Average relative humidity recorded as 48%. Mean day temperature was 38.4°C while night temperature recorded as 23.2°C with 80.4hours bright sunshine duration. Wind speed recorded as 3.0km/hr with mean wind direction *westerly*.

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

Rainfall reported as 19.8mm during the decade; however weather remained cloudy for 06days during the decade. Average relative humidity recorded as 52%. Mean day temperature was 38.8°C while night temperature recorded as 27.3°C with 67.5hours bright sunshine duration. Wind speed recorded as 6.1km/hr with mean wind direction *south westerly*.

Cotton: Very Good condition, budding stage

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

Dry weather reported during the decade; Average relative humidity recorded as 56%. Mean day temperature was 39.1°C while night temperature recorded as 25.7°C with 80.6hours bright sunshine duration. Wind speed recorded as 19.0km/h with mean wind direction *south westerly*.

Cotton SIM602: Good condition, budding stage

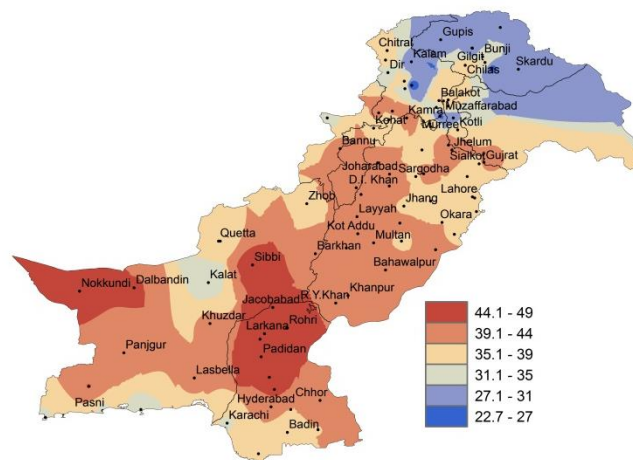
2.4 **RAMC, Usta Muhammad (Eastern Balochistan)**

Dry weather reported during the decade; however weather remained cloudy for 03days during the decade. Average relative humidity recorded as 34%. Mean day temperature was 48.0°C while night temperature recorded as 33.6°C. Wind speed recorded as 3.1km/h with mean wind direction *north easterly*.

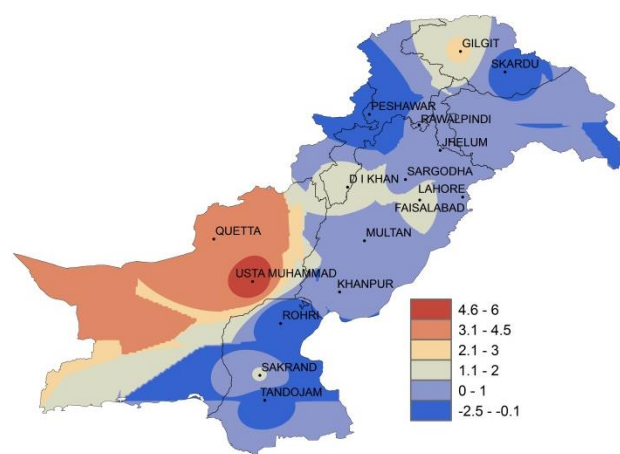
Rice: Good condition, Paneri in process

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

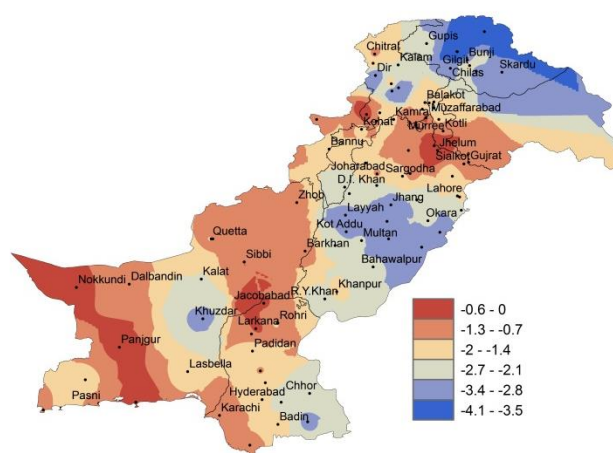
Dry weather reported during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 18%. Mean day temperature was 34.4°C while night temperature recorded as 21.8°C with 103.7hours bright sunshine duration. Wind speed recorded as 7.0km/hr with mean 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 (11th to 20th June, 2018)

2.6 Jhelum

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 06days during the decade. Average relative humidity recorded as 39%. Mean day temperature was 40.6°C while night temperature recorded as 27.3°C with 71.0hours bright sunshine duration. Wind speed recorded as 6.2km/hr with mean wind direction *south westerly*.

2.7 Lahore

Rainfall reported as 8.4mm during the decade; however weather remained cloudy for 05days during the decade. Average relative humidity recorded as 53%. Mean day temperature was 37.7°C while night temperature recorded as 28.3°C with 53.6hours bright sunshine duration. Wind speed recorded as 0.7km/hr with mean wind direction *south westerly*.

2.8 Sargodha

Rainfall reported as 51.5mm during the decade; however weather remained cloudy for 06days during the decade. Average relative humidity recorded as 53%. Mean day temperature was 38.9°C while night temperature recorded as 27.8°C with 58.5hours bright sunshine duration. Wind speed recorded 5.4km/hr with mean wind direction *south easterly*.

2.9 Multan

Rainfall reported as 2.2mm during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 47%. Mean day temperature was 40.4°C while night temperature recorded as 29.0°C with 74.1hours bright sunshine duration. Wind speed recorded 9.1km/hr with mean wind direction *south westerly*.

2.10 Khanpur

Rainfall reported as 6.4mm during the decade; however weather remained cloudy for 04days during the decade. Average relative humidity recorded as 47%. Mean day temperature was 43.0°C while night temperature recorded as 28.3°C with 73.5hours bright sunshine duration. Wind speed recorded 9.7km/hr with mean wind direction *south westerly*.

2.11 Sakrand

Rainfall reported as 5.0mm during the decade; however weather remained cloudy for 01 day during the decade. Average relative humidity recorded as 39%. Mean day temperature was 43.6°C while night temperature recorded as 28.1°C with 108.0hours bright sunshine duration. Wind speed recorded 11.0km/hr with wind direction *southerly*.

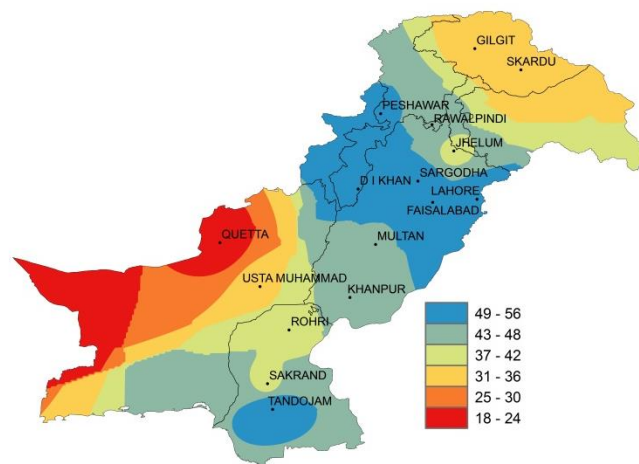


Figure.3: Relative Humidity in Percentage (%)

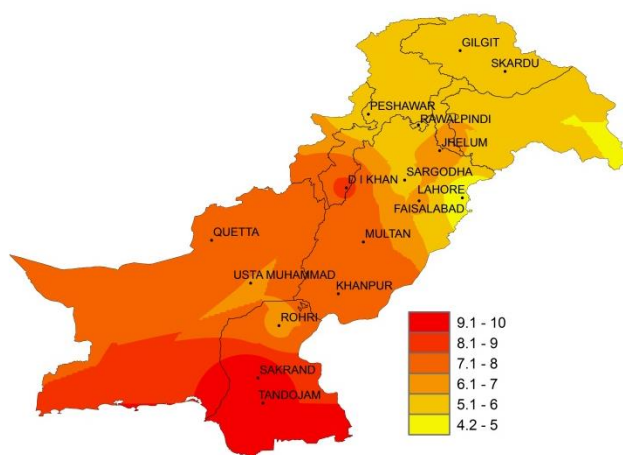


Figure.4: Reference Crop Evapotranspiration ETo (mm/day)

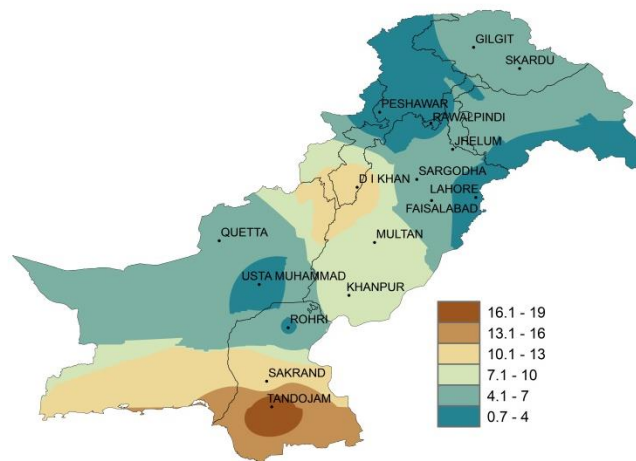


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Rainfall reported as Trcae (not measureable) during the decade; however weather remained cloudy for 02days during the decade. Average relative humidity recorded as 40%. Mean day temperature was 44.7°C while night temperature recorded as 26.9°C with 94.4hours bright sunshine duration. Wind speed recorded 3.9km/hr with wind direction *south easterly*.

2.13 D.I. Khan

Rainfall reported as 5.0mm during the decade; however weather remained cloudy for 05days during the decade. Average relative humidity recorded as 49%. Mean day temperature was 40.8°C while night temperature recorded as 27.1°C with 69.9hours bright sunshine duration. Wind speed recorded as 11.9km/hr with mean wind direction *south easterly*.

2.14 Peshawar

Rainfall reported as 18.0mm during the decade; however weather remained cloudy for 08days during the decade. Average relative humidity recorded as 49%. Mean day temperature was 40.3°C while night temperature recorded as 23.9°C with 80.4hours bright sunshine duration. Wind speed recorded as 2.5km/hr with mean wind direction *south easterly*.

2.15 Skardu

Rainfall reported as 1.2mm during the decade; however weather remained cloudy for 06days during the decade. Average relative humidity recorded as 32%. Mean day temperature was 29.2°C while night temperature recorded as 13.1°C with 73.3hours bright sunshine duration. Wind speed recorded as 4.5km/hr with mean wind direction *south south-easterly*.

2.16 Gilgit

Rainfall reported as 0.9mm during the decade; however weather remained cloudy for 06days during the decade. Average relative humidity recorded as 34%. Mean day temperature was 33.3°C while night temperature recorded as 17.0°C with 71.0hours bright sunshine duration. Wind speed recorded as 4.1km/hr with mean wind direction *easterly*.

Ten Days Weather Advisory for Farmers
(21st to 30th 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

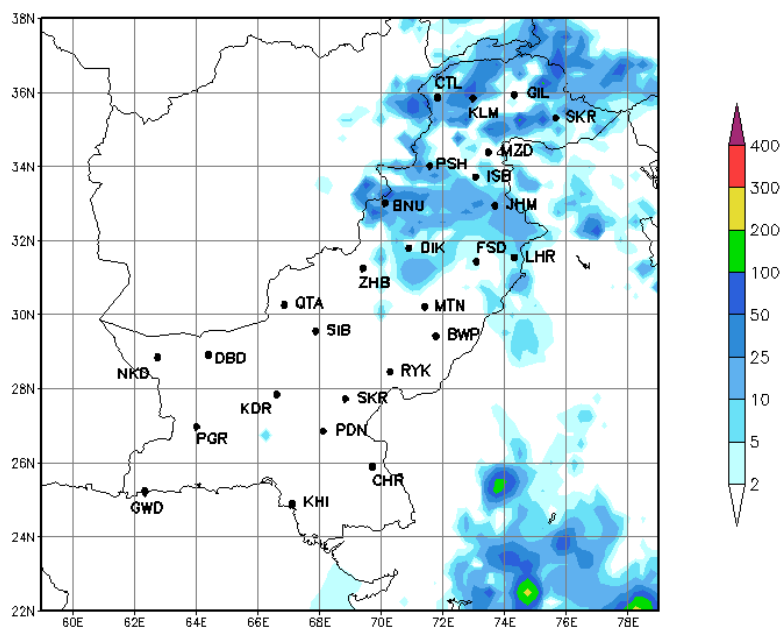
- ❖ **Punjab:** Hot and dry weather is expected in most parts of the province however light to moderate rainfall is expected in 2nd half of the decade.
- ❖ **Khyber Pakhtunkhwa:** Light to moderate rain-thunderstorm is expected at most places of the province during the decade.
- ❖ **Sindh:** Hot and dry weather is expected in most parts of the province however light rainfall is expected at coastal belt during the decade.
- ❖ **Balochistan:** Hot and dry weather is expected in most parts of the province however light rainfall is expected at scattered places 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.

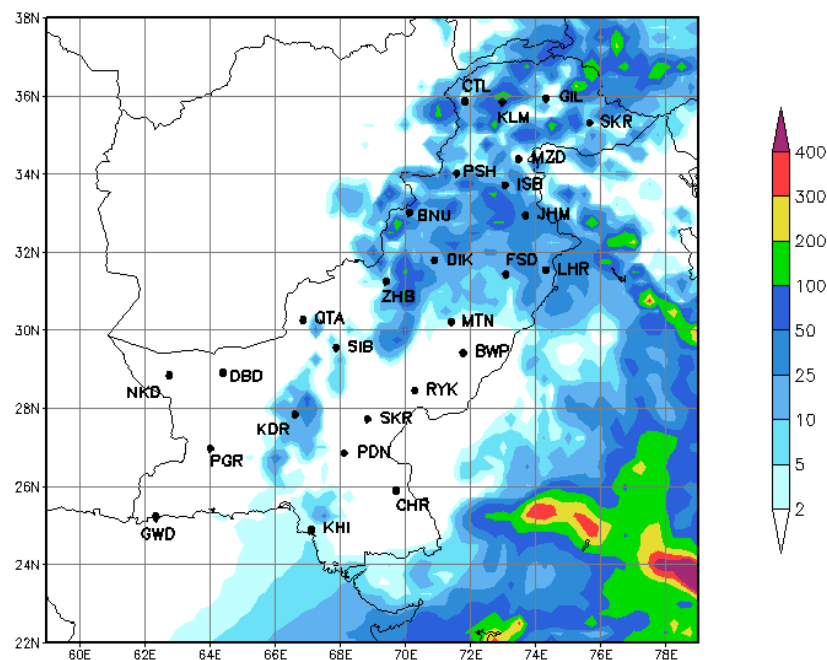
4.1 Precipitation Outlook (21st to 23rd June, 2018)

The forecast for the first three days (21st to 23rd) of the third 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 Punjab, KP, G.B and Kashmir.



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

The outlook for the last seven days (24th to 30th) of the third decade of June, 2018 shows that mostly hot and dry weather is expected in most of southern 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)