

# Decadal Agromet Bulletin of Pakistan



## Highlights....

- ❖ Moderate to heavy rainfall reported in the agricultural plains of Punjab, K.P & Sindh, Light to moderate rainfall reported in agriculture plains of Balochistan, G.B and Kashmir during the last decade.
- ❖ Highest amount of rainfall reported 241.6 mm at Sialkot during the last decade.
- ❖ Highest Maximum temperature recorded 45.5°C at Turbat during the last decade.
- ❖ Rain/thunderstorm is expected at isolated places in the upper half of the country during the decade.
- ❖ Farmers obtaining crop water through tube wells are advised to schedule the irrigation according to the expected weather mentioned during the decade.
- ❖ Farmers are advised to control further weeds growth at the present growing stages to stop any negative impact over the crops. Weeds removing practices should be started soon after expected rains in the mentioned.
- ❖ Pest/viral attacks are expected over cotton and sugarcane crops during hot and humid conditions during monsoon to post monsoon seasons. Farmers should be very careful and take in time precautionary measures in this regard.
- ❖ Stagnant water due to continuous rains is fatal for standing crops like cotton. Farmers should take suitable measures to resolve the issue.

**NATIONAL AGROMET CENTRE (NAMC)  
PAKISTAN METEOROLOGICAL DEPARTMENT  
SECTOR H-8/2, ISLAMABAD**

Patron-in-Chief: *Dr. Ghulam Rasul, Director General*

Editor-in-Chief: *Dr. Azmat Hayat Khan, Director*

Editor: *Asma Jawad Hashmi, Deputy Director*

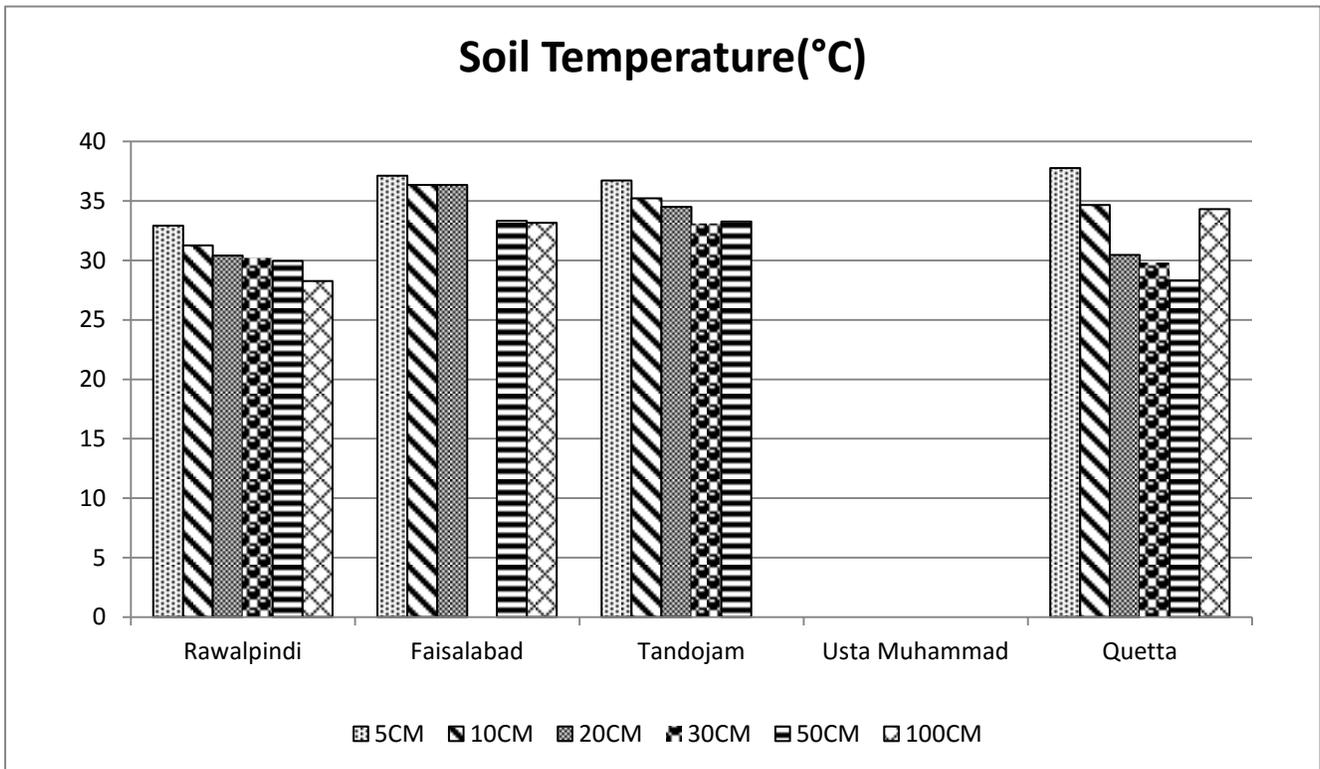
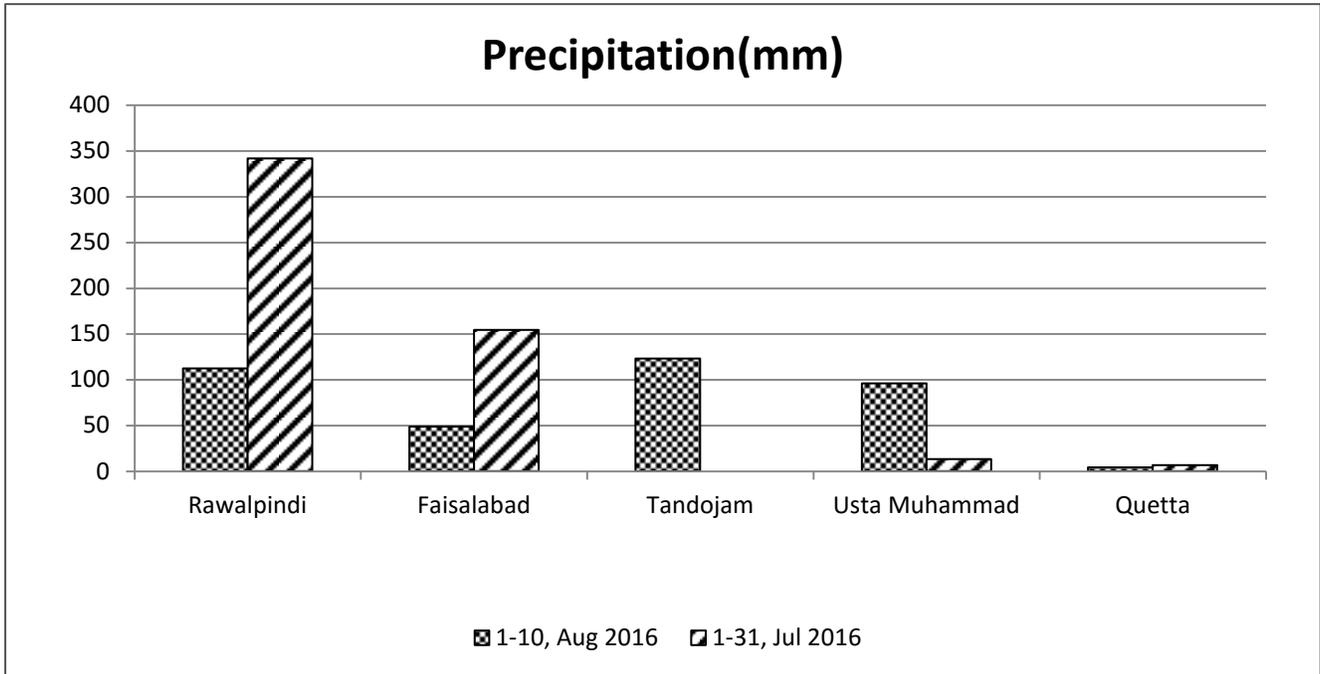
Phone: [+92-51-9250592](tel:+92-51-9250592) Email: [info@namc.pmd.gov.pk](mailto:info@namc.pmd.gov.pk)

Meteorological conditions during 1<sup>st</sup> decade of August, 2016

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	13.9	112.3	98.4	1.0	1.8	29.5	32.9	31.3	30.4	30.2	30.0	28.3	70	69.7	4.7	4.8
2	FAISALABAD	5.3	48.7	43.4	-2.8	0.6	30.5	37.1	36.4	36.4	***	33.3	33.2	71	51.4	4.0	4.3
3	JHELUM	9.0	115.2	106.2	0.0	0.5	30.6	33.3	32.6	31.6	31.2	31.2	***	76	67.6	2.7	4.5
4	LAHORE	5.0	69.8	64.8	-0.1	-0.8	30.6	32.9	32.3	31.9	31.1	***	30.4	76	43.2	2.5	3.8
5	SARGODHA	1.6	46.0	44.4	-1.3	-0.3	31.2	34.2	33.3	32.1	31.6	30.9	30.5	73	50.3	1.8	4.0
6	MULTAN	3.8	39.0	35.2	-0.6	0.4	32.9	***	***	***	***	***	***	67	64.2	4.3	5.0
7	KHANPUR	10.7	39.6	28.9	1.6	0.2	32.9	***	37.5	37.7	38.0	38.2	37.1	69	69.2	4.6	5.2
8	TANDOJAM	2.5	123.1	120.6	0.0	-1.0	30.2	36.7	35.2	34.5	33.1	33.3	***	73	44.1	8.5	4.7
9	SAKRAND ☆	3.9	61.0	57.1	0.6	-3.0	31.6	44.6	39.4	***	***	***	36.5	67	72.7	3.3	5.0
11	D I KHAN	4.6	0.4	-4.2	-0.4	0.6	31.6	***	***	***	***	***	***	70	53.8	***	5.0
11	PESHAWAR	3.3	24.0	20.7	1.0	0.9	31.8	36.4	34.1	32.9	***	***	***	69	61.7	4.5	4.8
12	USTA .M	0.0	96.0	96.0	-0.9	0.7	32.0	***	***	***	***	***	***	66	***	2.6	5.1
13	QUETTA	0.0	4.0	4.0	-1.2	-0.3	26.9	37.8	34.7	30.5	29.8	28.3	34.3	39	82.2	5.1	5.6
14	SKARDU	0.4	2.6	2.2	-0.6	-0.4	24.1	***	***	***	***	***	***	44	57.1	3.4	4.3
15	GILGIT	0.4	5.0	4.6	-1.1	2.4	26.6	***	***	***	***	***	***	55	71.8	2.7	4.5

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 years climatic (normal) data for computing departures.

## Graph at RAMCs during August, 2016



**1. Past Weather (1<sup>st</sup> to 10<sup>th</sup> August, 2016)**

Moderate to heavy rainfall reported in the agricultural plains of Punjab, K.P & Sindh, Light to moderate rainfall reported in agriculture plains of Balochistan & G.B & Kashmir during the last decade

**1.1 Punjab**

Moderate to Heavy rainfall reported in the agricultural plains of Punjab. Chief amount of rainfall received in Sialkot, Mandibahudin & Jhelum. Decadal maximum dropped below normal by 0.3°C & minimum raised above normal by 0.3°C in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 72%, 59.4hrs, 3.5km/hr and 4.5mm/day respectively.

**1.1 Sindh**

Moderate to heavy rainfall reported in the agricultural plains of Sindh. Chief amount of rainfall received in Badin, Thatta & Hyderabad. Decadal maximum raised above normal by 0.3°C & decadal minimum dropped below normal by 0.2°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 70%, 58.4hrs, 5.9km/hr and 4.9mm/day respectively.

**1.2 Khyber Pakhtunkhwa (KP)**

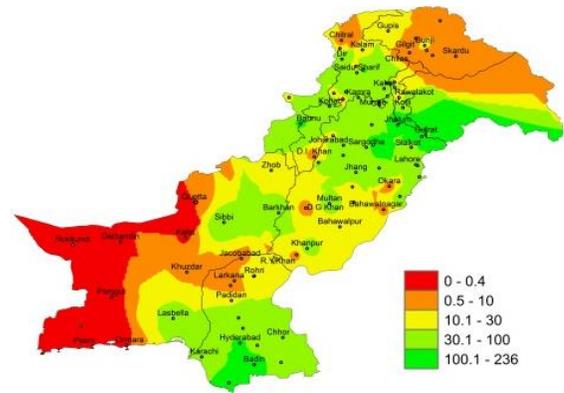
Moderate to Heavy rainfall reported in the agricultural plains of KP. Chief amount of rainfall received in Malam jabba, Bannu & Dir. Decadal maximum & minimum both raised above normal by 0.3°C & 0.8°C respectively in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 70%, 57.8hrs, 4.5km/hr and 4.9mm/day respectively.

**1.3 Balochistan**

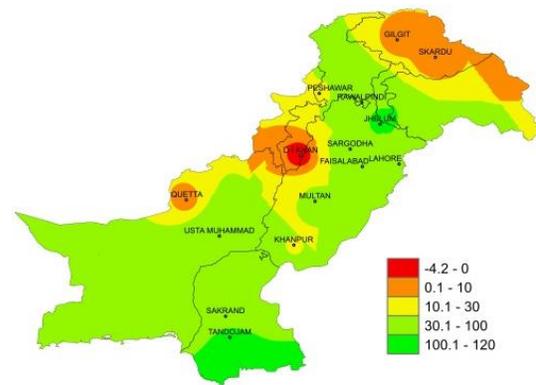
Light to moderate rainfall reported in the agricultural plains of Balochistan. Chief amount of rainfall received in Sibbi, Barkhan & Lasbella. Decadal maximum dropped below normal by 1.1°C & minimum raised above normal by 0.2°C in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 53%, 82.2hrs, 3.9km/hr and 5.4mm/day respectively.

**1.4 Gilgit-Baltistan and Azad Jammu & Kashmir**

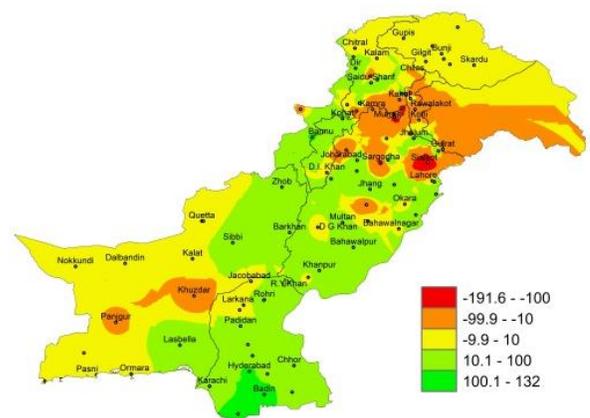
Light to moderate rainfall reported in the agricultural plains of GB & Kashmir. Chief amount of rainfall received Kotli, Muzaffarabad & Garhi dopatta. Decadal maximum dropped below normal by 1.0°C & minimum temperature raised above normal by 1.0°C in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 50%, 64.5hrs, 3.1km/hr and 4.4mm/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 in "mm"

2(a) **Past Weather for Major Agricultural Plains**  
(1<sup>st</sup> to 10<sup>th</sup> August, 2016)

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

Rainfall reported as 112.3mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 70%. Mean day temperature was 33.5°C while night temperature recorded as 25.5°C with 69.7hours bright sunshine duration. Wind speed recorded as 4.7km/hr with mean wind direction *South easterly*.

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

Rainfall reported as 48.7mm during the decade; however weather remained cloudy for 07days. Average relative humidity recorded as 71%. Mean day temperature was 33.5°C while night temperature recorded as 27.5°C with 51.4hours bright sunshine duration. Wind speed recorded as 4.0km/hr with mean wind direction *south easterly*.  
**Cotton:** Very good condition, flowering stage completed.

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

Rainfall reported as 123.1mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 73%. Mean day temperature was 35.4°C while night temperature recorded as 24.9°C with 44.1hours bright sunshine duration. Wind speed recorded as 8.5km/h with mean wind direction *south westerly*.  
**Cotton (Star-2):** Good condition, Ball formation stage.

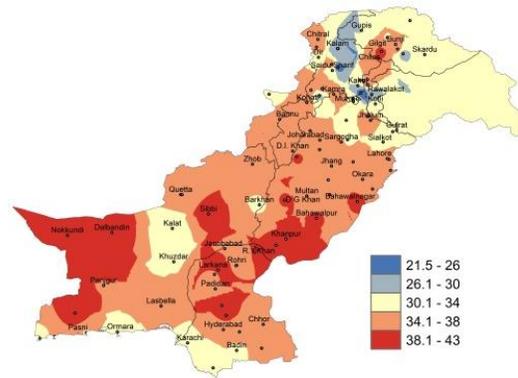
2.4 **RAMC, Usta Muhammad (Eastern Balochistan)**

Rainfall reported as 96.0mm during the decade; however weather remained cloudy for 08days. Average relative humidity recorded as 66%. Mean day temperature was 37.8°C while night temperature recorded as 26.2°C. Wind speed recorded as 2.6km/h with mean wind direction *south easterly*

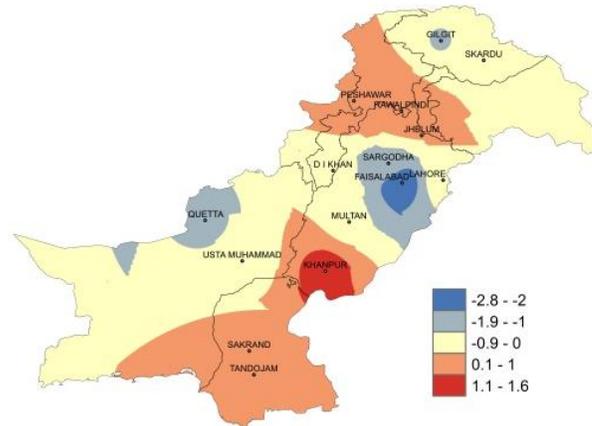
**Rice:** Third leaf complete.

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

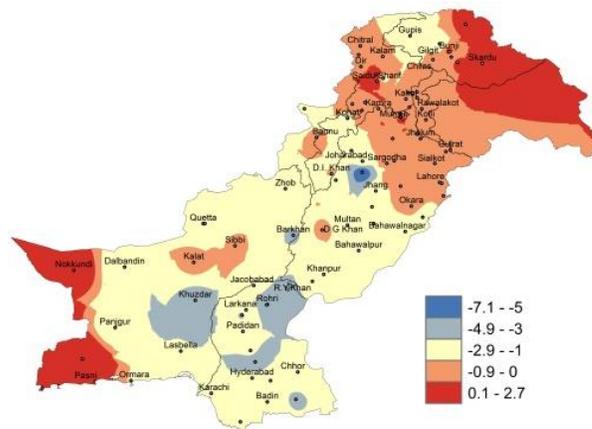
Rainfall reported as 4.0mm during the decade; however weather remained cloudy for 08days. Average relative humidity recorded as 39%. Mean day temperature was 33.6°C while night temperature recorded as 20.2°C with 82.2hours bright sunshine duration. Wind speed recorded as 5.1km/hr with mean wind direction *southerly*.



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 in “°C”

2(b) **Past Weather for Sub-Regional Agricultural Plains (1<sup>st</sup> to 10<sup>th</sup> August, 2016)**

2.6 **Jhelum**

Rainfall reported as 115.2mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 76%. Mean day temperature was 34.8°C while night temperature recorded as 26.4°C with 67.6 hours bright sunshine duration. Wind speed recorded 2.7km/hr with wind direction *south easterly*.

2.7 **Lahore**

Rainfall reported as 69.8mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 76%. Mean day temperature was 34.5°C while night temperature recorded as 26.6°C with 43.2hours bright sunshine duration. Wind speed recorded as 2.5km/hr with mean wind direction *south easterly*.

2.8 **Sargodha**

Rainfall reported as 46.0mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 73%. Mean day temperature was 35.4°C while night temperature recorded as 27.0°C with 50.3hours bright sunshine duration. Wind speed recorded 1.8km/hr with mean wind direction *Easterly*.

2.9 **Multan**

Rainfall reported as 39.0mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 67%. Mean day temperature was 37.0°C while night temperature recorded as 28.8°C with 64.2hours bright sunshine duration. Wind speed recorded 4.3km/hr with mean wind direction *south westerly*.

2.10 **Khanpur**

Rainfall reported as 39.6mm during the decade. However sky remained cloudy for 10days. Average relative humidity recorded as 69%. Mean day temperature was 38.0°C while night temperature recorded as 27.7°C with 69.2hours bright sunshine duration. Wind speed recorded 4.6km/hr with mean wind direction *North easterly*.

2.11 **Sakrand**

Rainfall reported as 61.0mm during the decade; however weather remains cloudy for 10days. Average relative humidity recorded as 67%. Mean day temperature was 36.4°C while night temperature recorded as 26.8°C with 72.7hours bright sunshine duration. Wind speed recorded 3.3km/hr with wind direction *southerly*.

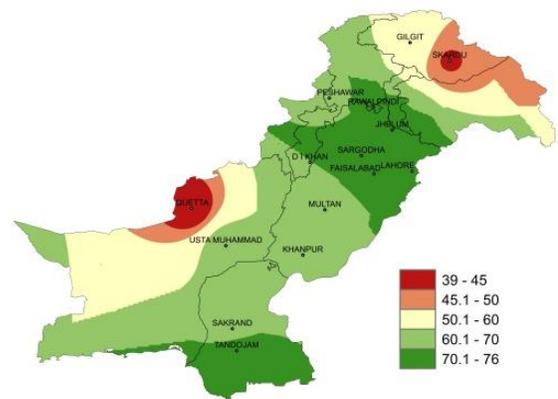


Figure.3: Relative Humidity in Percentage (%)

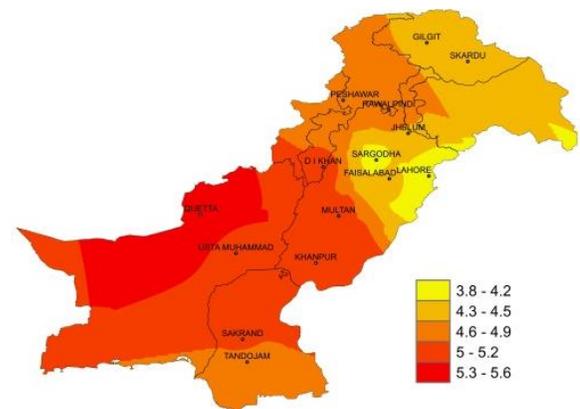


Figure.4: Reference Crop Evapotranspiration “ETo” in mm/day

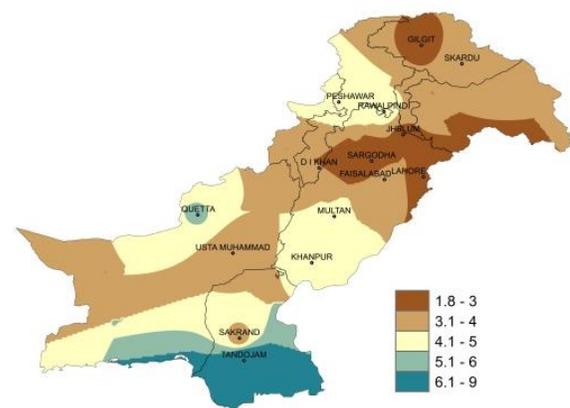


Figure 5: Wind Speed in kilometer per hour (km/h)

**2.12 D.I. Khan**

Rainfall reported as 0.4mm during the decade; however weather remains cloudy for 10days. Average relative humidity recorded as 70%. Mean day temperature was 36.3°C while night temperature recorded as 26.8°C with 53.8hours bright sunshine duration..

**2.13 Peshawar**

Rainfall reported as 24.0mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 69%. Mean day temperature was 36.2°C while night temperature recorded as 27.4°C with 61.7hours bright sunshine duration. Wind speed recorded as 4.5km/hr with mean wind direction *north easterly*.

**2.14 Skardu**

Rainfall reported as 2.6mm during the decade; however weather remained cloudy for 06days. Average relative humidity recorded as 44%. Mean day temperature was 31.9°C while night temperature recorded as 16.3°C with 57.1hours bright sunshine duration. Wind speed recorded as 3.4km/hr with mean wind direction *south south-westerly*.

**2.15 Gilgit**

Rainfall reported as 5.0mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 55%. Mean day temperature was 33.7°C while night temperature recorded as 19.5°C with 71.8hours bright sunshine duration. Wind speed recorded as 2.7km/hr with mean wind direction *Variable*.

**3. Ten Days Weather Advisory for Farmers  
(11<sup>th</sup> to 20<sup>th</sup> August, 2016)****3.1 Temperature Forecast**

Temperatures are likely to be slightly above normal in most of the agricultural plains during the decade, especially in the lower half of the country.

**3.2 Wind Forecast**

Normal wind pattern may prevail in most of the agricultural plains of the country during the decade.

**3.3 Rain Forecast**

- ❖ **Punjab:** Rain-thunderstorm is expected at isolated places in central-upper Punjab; Rawalpindi, Gujranwala, Sargodha, and Faisalabad divisions during the decade.
- ❖ **Khyber Pakhtunkhwa:** Rain-thunderstorm is expected at scattered places in Khyber-Pakhtunkhwa: Mardan, Malakand, Hazara and Peshawar divisions during the decade.
- ❖ **Sindh:** Mainly hot and dry weather is expected in most parts of the province with possibility of drizzle/light rain along Sindh-Makran coast and isolated places in Hyderabad, Karachi and Mirpur Khas divisions during the decade.
- ❖ **Balochistan:** Mainly hot and dry weather is expected in most parts of Balochistan during the decade.
- ❖ **Gilgit Baltistan:** Mainly hot and dry weather is expected in most parts of GB during the decade with possibility of drizzle/light rain at isolated places.
- ❖ **Kashmir:** Rain-thunderstorm is expected at isolated places including Muzaffarabad, Kotli, Neelum Valley and Rawalakot during the decade.

**3.4 Advisory for Farmers**

- ❖ Farmers obtaining crop water through tube wells are advised to schedule the irrigation according to the expected weather mentioned during the decade.
- ❖ Farmers are advised to control further weeds growth at the present growing stages to stop any negative impact over the crops. Weeds removing practices should be started soon after expected rains in the mentioned.
- ❖ Pest/viral attacks are expected over cotton and sugarcane crops during hot and humid conditions during monsoon to post monsoon seasons. Farmers should be very careful and take in time precautionary measures in this regard.
- ❖ Stagnant water due to continuous rains is fatal for standing crops like cotton. Farmers should take suitable measures to resolve the issue.

## 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)