

# Decadal Agromet Bulletin of Pakistan



## Highlights....

- ❖ Light to moderate rainfall reported from most parts of K.P, G.B and Punjab. While dry weather reported from rest of the country during the last decade.
- ❖ Highest amount of rainfall recorded as 55.0mm at Muzaffarabad during the last decade.
- ❖ Lowest Minimum temperature recorded as 0.0°C at Astore during the last decade.
- ❖ Mainly dry weather is expected in most parts of the country during the current decade, however light rainfall is expected at isolated places in upper KP, FATA, Kashmir, G.B during the decade and in Punjab during the second half of the decade.
- ❖ Farmers are advised to schedule the irrigation plans in accordance with the expected weather, mentioned during the decade.
- ❖ 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.

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

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

Editor-in-Chief: *Ms. Asma Jawad Hashmi, Deputy Director*

Editor: *Ms. Khalida Noureen, Meteorologist*

Phone: [+92-51-9250592](tel:+92-51-9250592)

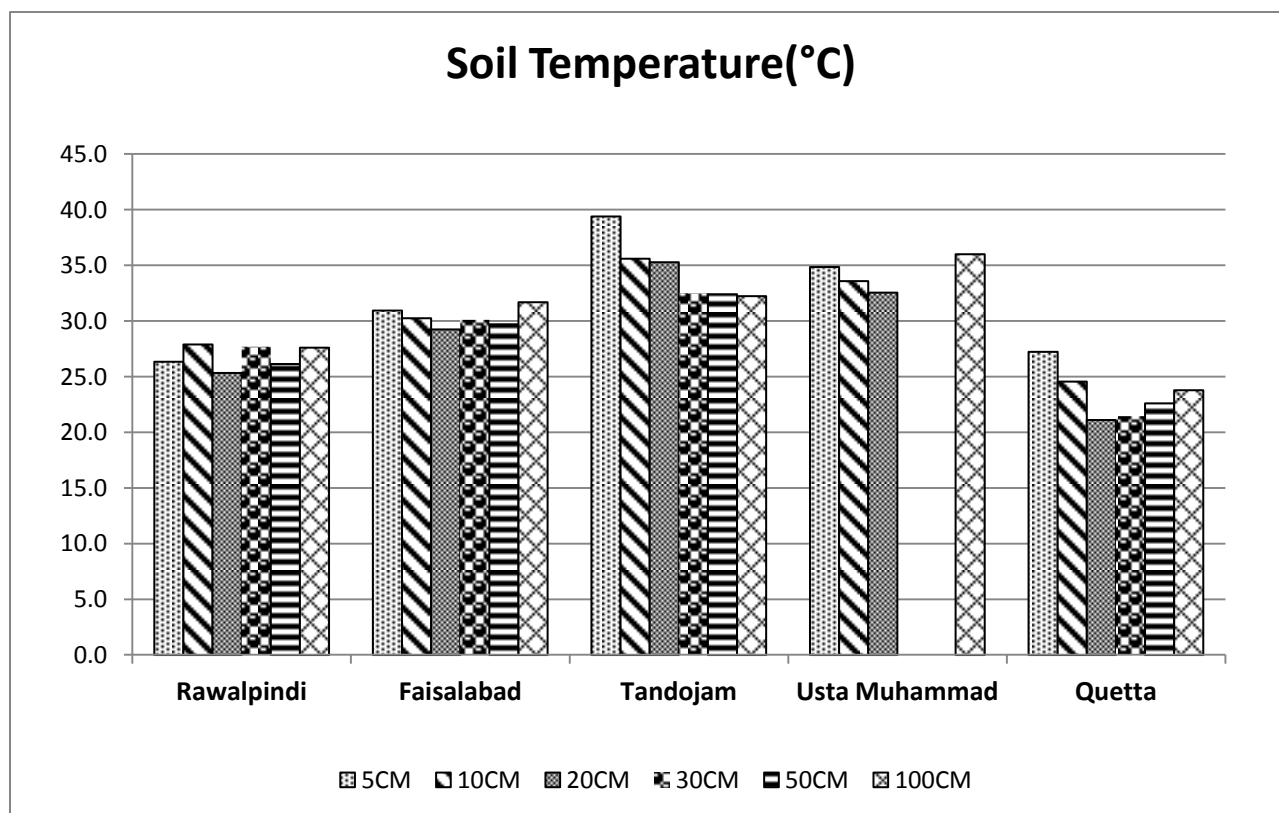
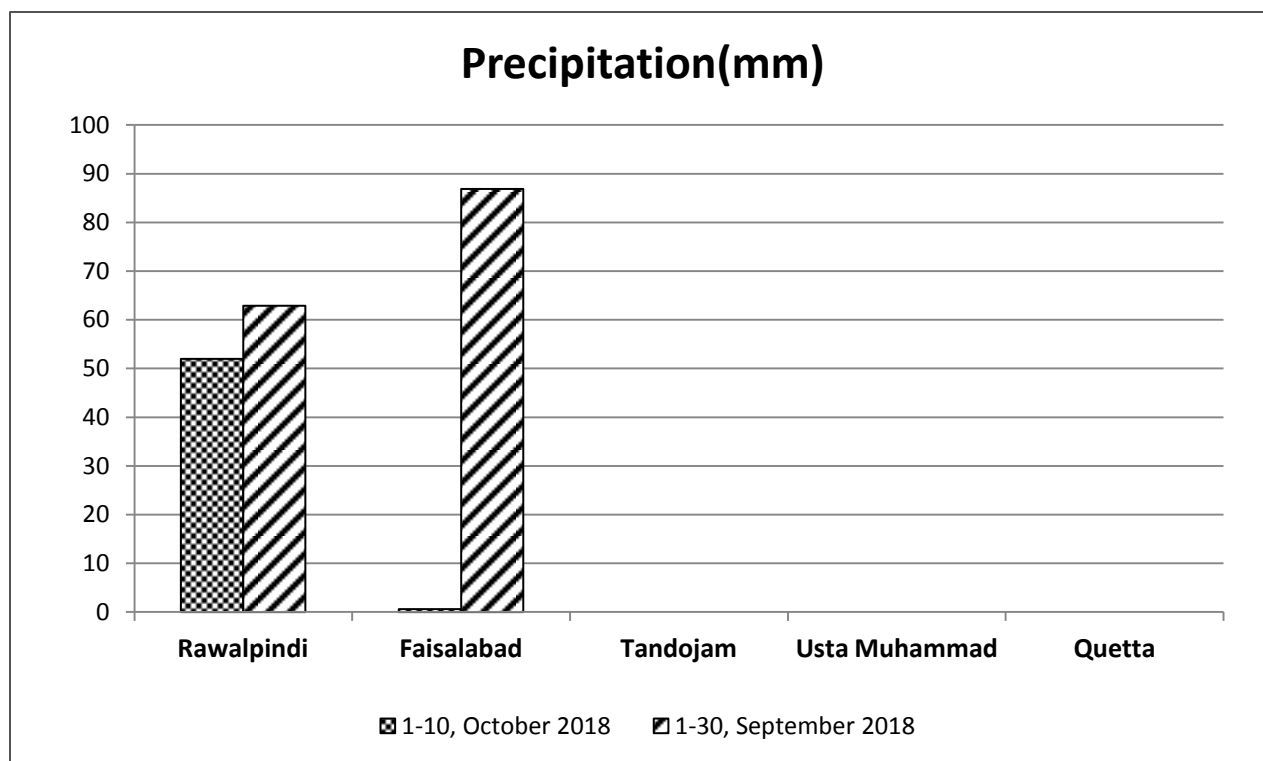
Email: [dirnamce@yahoo.com](mailto:dirnamce@yahoo.com)

**Meteorological Conditions during 1<sup>st</sup> Decade of October, 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	1.0	52.0	51.0	-2.4	-0.6	23.7	26.4	27.9	25.4	27.7	26.2	27.6	59	84.5	1.6	1.7
2	Faisalabad	0.2	0.6	0.4	-0.8	0.7	27.7	31.0	30.3	29.3	30.1	29.7	31.7	53	89.4	2.0	2.3
3	Jhelum	0.4	10.4	10.0	-0.6	-1.4	26.8	29.2	28.2	27.2	27.0	27.9	***	50	81.7	2.5	2.2
4	Lahore	0.1	0.0	-0.1	-0.5	-1.1	28.1	29.7	29.3	28.2	27.6	***	29.2	56	81.1	1.6	2.1
5	Sargodha	0.1	6.0	5.9	-3.6	-0.5	27.8	34.3	32.3	30.6	30.2	***	30.0	52	77.9	3.8	2.8
6	Multan	0.2	0.0	-0.2	-0.7	0.2	28.9	***	***	***	***	***	***	42	83.6	1.8	2.3
7	Khanpur	0.0	0.0	0.0	-0.2	-0.3	29.0	32.5	32.0	32.0	33.8	34.1	33.7	52	75.7	2.9	2.9
8	Tandojam	0.8	0.0	-0.8	1.0	-0.5	29.4	39.4	35.6	35.3	32.5	32.4	32.3	52	96.4	1.6	2.9
9	Sakrand☆	0.0	0.0	0.0	0.8	1.0	30.2	39.7	***	***	***	***	34.4	49	101.6	2.1	3.1
11	Rohri	0.0	0.0	0.0	-1.2	-0.1	30.3	***	***	***	***	***	***	45	95.7	1.0	2.4
12	D.I Khan	0.3	0.0	-0.3	-0.5	0.0	28.1	31.5	31.1	31.3	31.6	21.7	***	50	91.8	9.5	4.5
13	Peshawar	1.1	21.0	19.9	-1.9	-3.2	24.2	23.0	28.5	26.7	27.1	27.8	26.9	56	60.3	1.7	1.7
14	Usta .M	0.0	0.0	0.0	-2.9	0.7	28.9	34.9	33.6	32.6	***	***	36.0	64	***	3.5	2.5
15	Quetta	0.0	0.0	0.0	-4.1	0.4	17.5	27.3	24.6	21.1	21.5	22.6	23.8	22	108.7	5.8	3.1
16	Skardu	0.1	10.2	10.1	-2.3	-0.1	13.9	***	***	***	***	***	***	45	59.3	3.4	1.6
17	Gilgit	0.2	0.0	-0.2	-1.4	1.2	17.8	***	***	***	***	***	***	47	63.7	1.8	1.3

**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 October, 2018



**Past Weather (1<sup>st</sup> to 10<sup>th</sup> October, 2018)**

Light to moderate rainfall reported from most parts of K.P, G.B and Punjab. While dry weather reported from rest of the country during the last decade.

**1.1 Punjab**

Light to moderate from agricultural plains of Punjab. Decadal Chief amount of rainfall received at Murree, Mianwali & Islamabad. Decadal maximum & minimum departure both dropped below normal by 1.3°C & 0.4°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 52%, 82.0hrs, 2.3km/hr and 2.3mm/day respectively.

**1.2 Sindh**

Dry weather reported from the agricultural plains of Sindh. Decadal maximum minimum departure both raised above normal by 0.2°C & 0.1°C respectively in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 49%, 97.9hrs, 1.6km/hr and 2.8 mm/day respectively.

**1.3 Khyber Pakhtunkhwa (KP)**

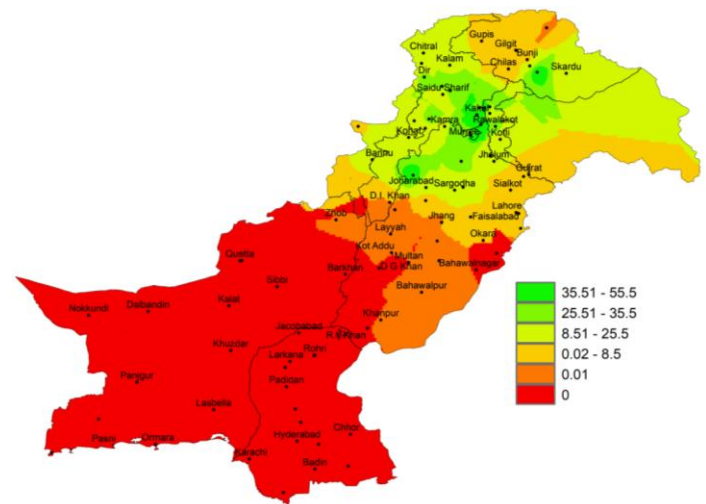
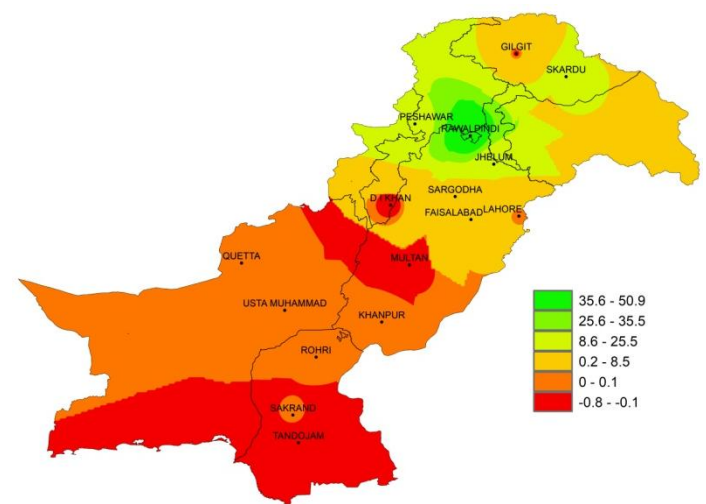
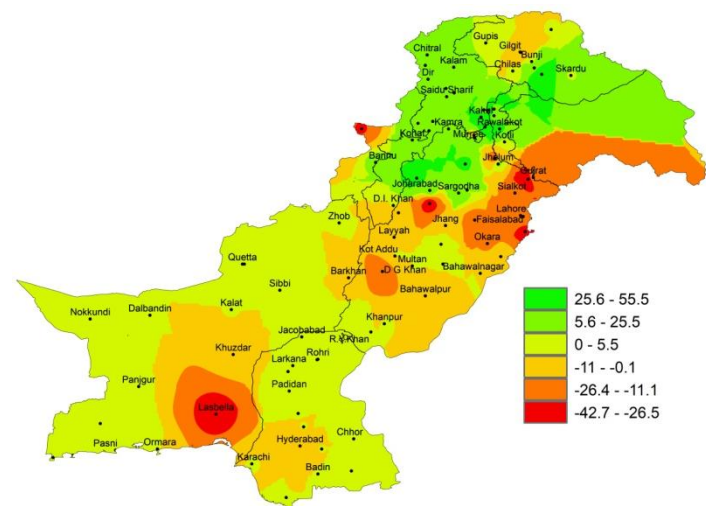
Light to moderate rainfall reported from most of the agricultural plains of KP. Chief amount of rainfall received at Kakul, Malamjabba & Dir. Decadal maximum & minimum departure both dropped below normal by 1.2°C & 1.6°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 53%, 76.1hrs, 5.6km/hr and 3.1mm/day respectively.

**1.4 Balochistan**

Dry weather reported from agricultural plains of Balochistan. Decadal maximum dropped below normal by 3.5°C & minimum departure raised above normal by 0.6°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 43%, 108.7hrs, 2.6km/hr and 2.8mm/day respectively.

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

Light to moderate rainfall reported from few places of G.B & Kashmir. Chief amount of rainfall received at Muzaffarabad Astore & Rawalakot. Decadal maximum dropped below normal by 1.9°C & minimum departure raised above normal by 0.5°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 46%, 61.5hrs, 2.6 km/hr and 1.5mm/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** **(1<sup>st</sup> to 10<sup>th</sup> October, 2018)**

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

Rainfall reported as 52.0mm during the decade; however weather remained cloudy for 07 day. Average relative humidity recorded as 59%. Mean day temperature was 30.5°C while night temperature recorded as 16.9°C with 84.5hours bright sunshine duration. Wind speed recorded as 1.6km/hr with mean wind direction *Westerly*.

**Maize:** good condition, Flowering.

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

Rainfall reported as 0.6mm during the decade; however weather remained cloudy for 02 day. Average relative humidity recorded as 53%. Mean day temperature was 34.4°C while night temperature recorded as 20.9°C with 89.4hours bright sunshine duration. Wind speed recorded as 2.0km/hr with mean wind direction *South easterly*.

**Cotton:** Very good condition, Full maturity completed.

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

Dry weather reported during the decade; however weather remained cloudy for 02 day during the decade. Average relative humidity recorded as 56%. Mean day temperature was 39.1°C while night temperature recorded as 20.1°C with 72.2hours bright sunshine duration. Wind speed recorded as 5.6km/h with mean wind direction *southerly*.

**Cotton CIM-602:** Not good, Maturity stage.

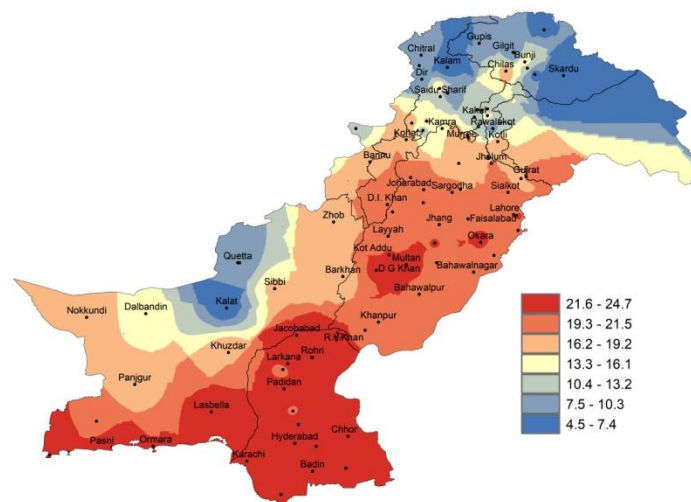
### 2.4 **RAMC, Usta Muhammad (Eastern Balochistan)**

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 64%. Mean day temperature was 33.5°C while night temperature recorded as 24.2°C. Wind speed recorded as 3.5km/h with mean wind direction *southeasterly*.

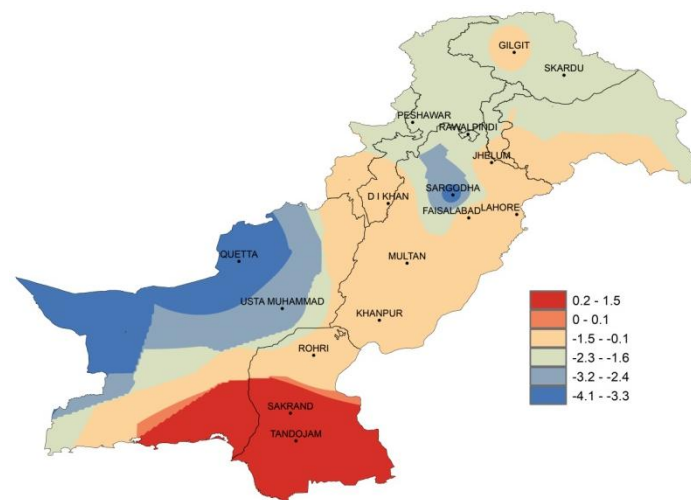
**Rice:** Good condition, Milk maturity stage.

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

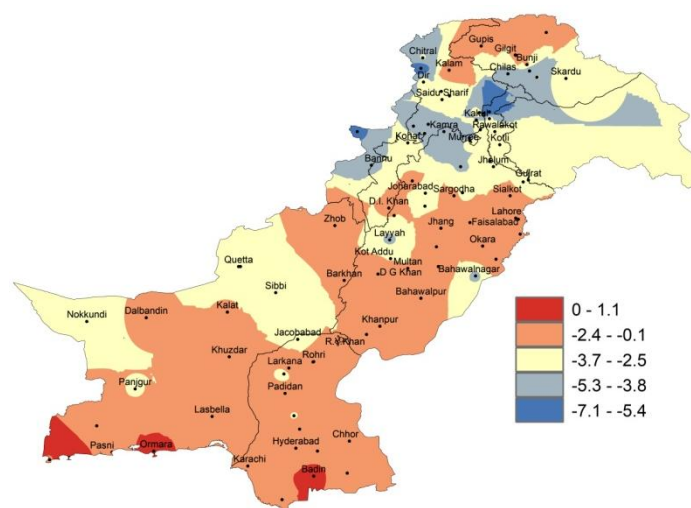
Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 22%. Mean day temperature was 24.7°C while night temperature recorded as 10.3°C with 108.7hours bright sunshine duration. Wind speed recorded as 5.8km/hr with mean wind direction *North westerly*.



I. **Actual min-temp**



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



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

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

## 2(b) Past Weather for Sub-Regional Agricultural Plains (1<sup>st</sup> to 10<sup>th</sup> October, 2018)

### 2.6 Jhelum

Rainfall reported as 10.4mm during the decade; however weather remained cloudy for 08days. Average relative humidity recorded as 50%. Mean day temperature was 34.1°C while night temperature recorded as 19.5°C with 81.7hours bright sunshine duration. Wind speed recorded as 2.5km/hr with mean wind direction *south westerly*.

### 2.7 Lahore

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 05days. Average relative humidity recorded as 56%. Mean day temperature was 33.6°C while night temperature recorded as 22.5°C with 81.1hours bright sunshine duration. Wind speed recorded as 1.6km/hr with mean wind direction *North westerly*.

### 2.8 Sargodha

Rainfall reported as 6.0mm during the decade; however weather remained cloudy for 05day. Average relative humidity recorded as 52%. Mean day temperature was 33.9°C while night temperature recorded as 21.6°C with 77.9hours bright sunshine duration. Wind speed recorded 3.8km/hr with mean wind direction *North easterly*.

### 2.9 Multan

Dry weather reported during the decade; however weather remained cloudy for 04day. Average relative humidity recorded as 42%. Mean day temperature was 35.5°C while night temperature recorded as 22.3°C with 83.6hours bright sunshine duration. Wind speed recorded 1.8km/hr with mean wind direction *southerly*.

### 2.10 Khanpur

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 52%. Mean day temperature was 36.7°C while night temperature recorded as 21.2°C with 75.5hours bright sunshine duration. Wind speed recorded 2.9km/hr with mean wind direction *North easterly*.

### 2.11 Sakrand

Dry weather reported during the decade; however weather remained cloudy for 01day. Average relative humidity recorded as 49%. Mean day temperature was 38.0°C while night temperature recorded as 22.3°C with 101.2hours bright sunshine duration. Wind speed recorded 2.1km/hr with wind direction *Northerly*.

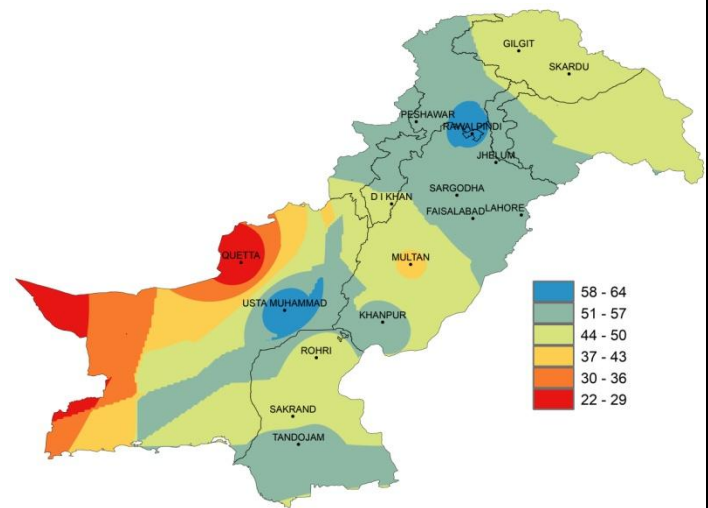


Figure.3: Relative Humidity in Percentage (%)

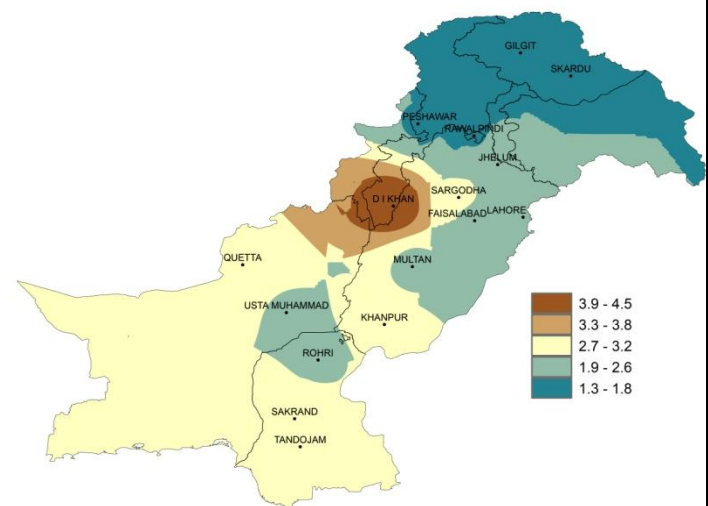


Figure.4: Reference Crop Evapotranspiration ETo (mm/day)

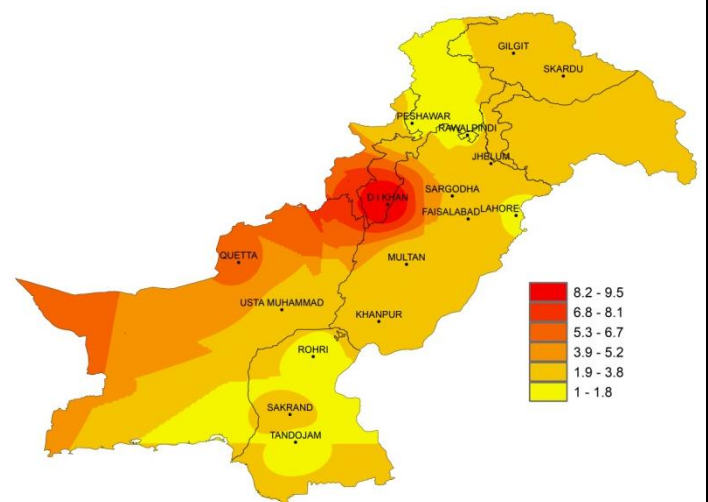


Figure 5: Wind Speed in kilometer per hour (km/h)

**2.12 Rohri**

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 45%. Mean day temperature was 36.4°C while night temperature recorded as 24.1°C with 95.7hours bright sunshine duration. Wind speed recorded 1.0km/hr with wind direction *North easterly*.

**2.13 D.I. Khan**

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 50%. Mean day temperature was 37.5°C while night temperature recorded as 20.8°C with 91.8hours bright sunshine duration. Wind speed recorded as 9.5km/hr with mean wind direction *Easterly*.

**2.14 Peshawar**

Rainfall reported as 21.0mm during the decade; however weather remained cloudy for 07days. Average relative humidity recorded as 56%. Mean day temperature was 31.5°C while night temperature recorded as 16.9°C with 60.3hours bright sunshine duration. Wind speed recorded as 1.7km/hr with mean wind direction *North westerly*.

**2.15 Skardu**

Rainfall reported as 21.0mm during the decade. However weather remained cloudy for 07days. Average relative humidity recorded as 45%. Mean day temperature was 21.7°C while night temperature recorded as 6.1°C with 59.3hours bright sunshine duration. Wind speed recorded as 3.4km/hr with mean wind direction *south –south westerly*.

**2.16 Gilgit**

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 47%. Mean day temperature was 26.4°C while night temperature recorded as 9.2°C with 63.7hours bright sunshine duration. Wind speed recorded as 1.8km/hr with mean wind direction *westerly*.

**Ten Days Weather Advisory for Farmers**  
**(11<sup>th</sup> to 20<sup>th</sup> October, 2018)**

**3.1 Temperature Forecast**

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

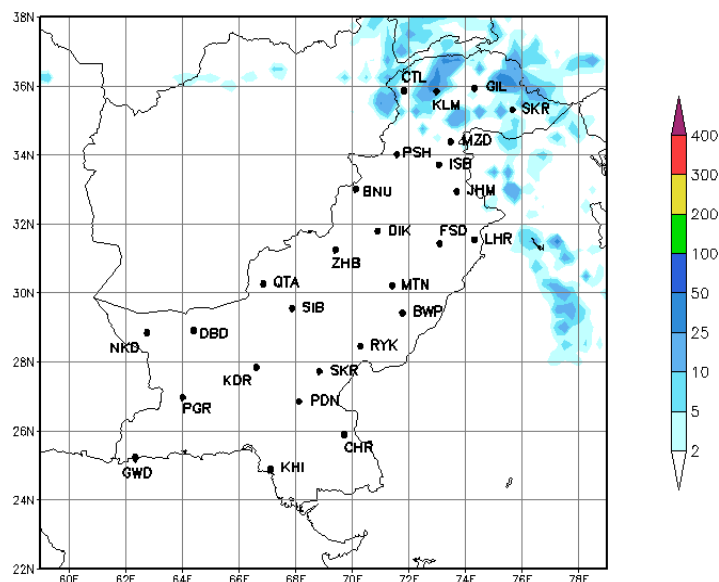
- ❖ **Punjab:** Light rainfall is expected at isolated places of the province during the second half of the decade.
- ❖ **Khyber Pakhtunkhwa:** Light rainfall is expected at scattered places in upper parts of the province during the decade.
- ❖ **Sindh:** Dry weather is expected in the province during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

**3.4 Advisory for Farmers**

- ❖ Farmers are advised to schedule the irrigation plans in accordance with the expected weather, mentioned during the decade.
- ❖ 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.

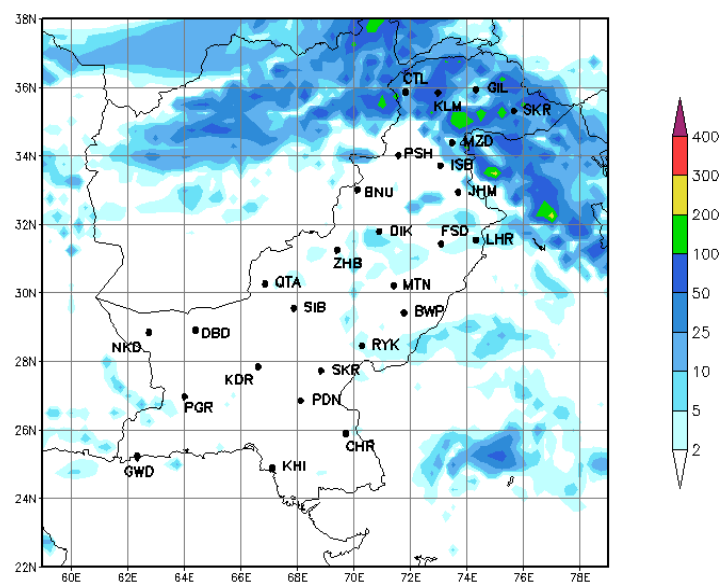
#### 4.1 Precipitation Outlook (11<sup>th</sup> to 13<sup>th</sup> October, 2018)

The forecast for the first three days (11<sup>th</sup> to 13<sup>th</sup>) of the second decade of October 2018 shows that mainly dry weather may prevail in most parts of the country; however light rainfall is expected at scattered places of Upper KP, FATA, Kashmir and G.B.



#### 4.2 Precipitation Outlook (14<sup>th</sup> to 20<sup>th</sup> October, 2018)

The outlook for the last seven days (14<sup>th</sup> to 20<sup>th</sup>) of the second decade of October 2018 shows that light rainfall is expected in upper KP, FATA, Kashmir and G.B whereas light rainfall is expected at isolated places in Punjab. Dry weather may prevail in rest of the country.





## Findings of AgMIP Pakistan, 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)