

Decadal Agromet Bulletin of Pakistan



Highlights....

- ❖ Light to moderate rainfall reported from most parts of K.P, G.B, Kashmir and upper Punjab while dry weather reported from rest parts of the country during the last decade.
- ❖ Highest amount of rainfall recorded as 23.1 mm at Parachinar during the last decade.
- ❖ Highest maximum temperature recorded as 45°C at Khanpur during the last decade.
- ❖ Light to moderate rain is expected in upper half of the country, while dry weather is expected in rest parts of the country during the current decade.
- ❖ Wheat crop is at maturity stages in most of the agricultural plains in upper half of the country. Farmers are advised to schedule their harvesting by keeping in view the weather forecast.
- ❖ Dust/sand storm may occur in areas of upper Sindh and southern Punjab, accordingly measures may be taken to preserve the grains and residue after harvesting wheat crop.
- ❖ In the grams crop growing areas, precautionary measures may be taken to preserve the crop from expected lightening/thunder.
- ❖ 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.

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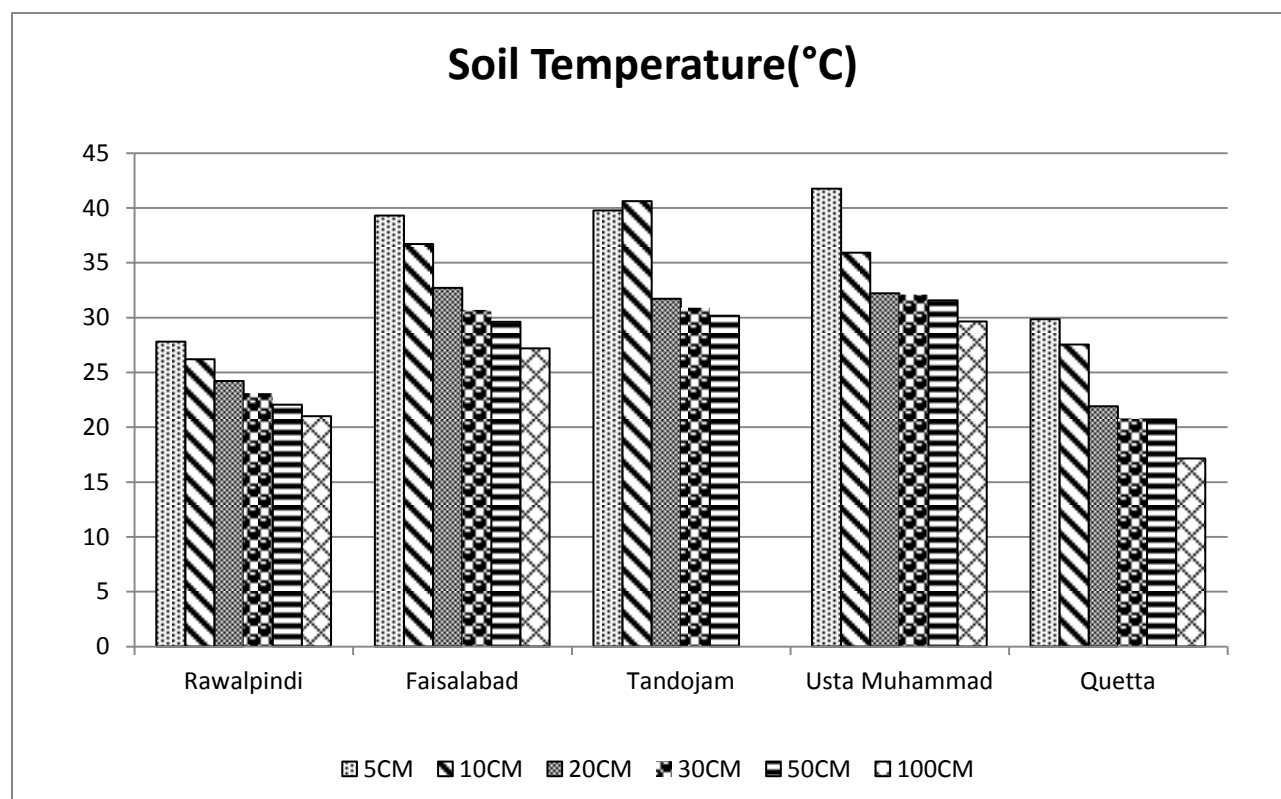
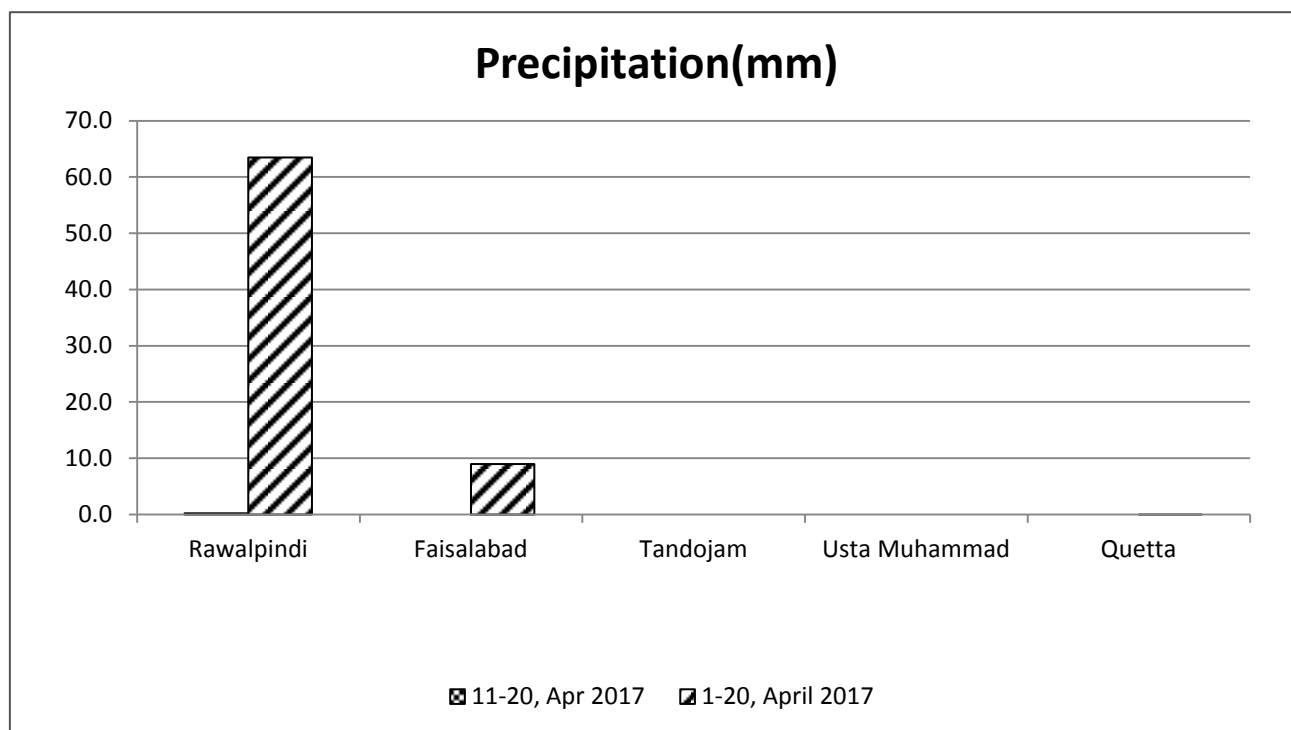
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Meteorological Conditions during 2nd decade of April, 2017

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	0.2	-0.4	5.3	17.9	1.7	27.8	26.2	24.2	23.1	22.1	21.0	41	108.4	4.3	5.5
2	Faisalabad	0.4	0.0	-0.4	5.7	20.8	1.3	39.3	36.7	32.7	30.7	29.6	27.2	33	101.3	2.5	5.2
3	Jhelum	0.8	0.1	-0.7	4.7	18.7	-0.4	31.2	29.0	26.4	24.6	24.3	***	36	106.3	3.5	5.5
4	Lahore	0.2	0.0	-0.2	5.6	23.6	1.5	34.7	32.4	28.7	26.5	***	24.4	30	94.1	2.0	4.8
5	Sargodha	0.5	0.1	-0.4	3.8	22.7	2.2	34.0	31.6	27.7	26.8	***	24.5	39	91.1	3.9	5.5
6	Multan	0.6	0.0	-0.6	5.5	24.6	3.7	***	***	***	***	***	***	22	99.1	5.8	7.0
7	Khanpur	0.0	0.0	0.0	5.7	22.1	0.6	***	32.8	30.8	30.9	30.6	30.8	28	93.4	4.6	6.6
8	Tandojam	0.0	0.0	0.0	0.7	19.5	-1.5	39.8	40.6	31.7	30.9	30.2	***	40	101.9	9.5	3.5
9	Sakrand ☆	0.0	0.0	0.0	4.3	23.2	2.6	51.6	***	***	***	***	30.3	28	116.9	5.7	7.5
11	Rohri	0.0	0.0	0.0	4.5	26.6	2.6	***	***	***	***	***	***	27	97.1	1.0	4.6
12	D.I Khan	0.8	0.0	-0.8	7.8	21.8	2.5	***	***	***	***	***	***	38	93.2	8.4	7.6
13	Peshawar	2.6	0.0	-2.6	7.1	18.9	0.8	36.0	30.7	28.6	***	***	***	48	85.5	2.6	4.6
14	Usta .M	0.0	0.0	0.0	5.4	18.9	-2.0	41.8	35.9	32.2	32.1	31.6	29.7	32	***	3.1	6.3
15	Quetta	0.4	0.0	-0.4	4.4	14.1	3.6	29.9	27.6	21.9	20.8	20.7	17.2	20	109.1	4.0	5.0
16	Skardu	0.8	7.0	6.2	0.0	6.2	-0.2	***	***	***	***	***	***	44	84.0	0.7	3.0
17	Gilgit	0.6	2.0	1.4	2.1	8.5	-1.1	***	***	***	***	***	***	39	86.6	2.7	3.7

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 April, 2017



1. Past Weather (11th to 20th April, 2017)

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

1.1 Punjab

Light to moderate rainfall reported from few agricultural plains of Punjab. Chief amount of rainfall received at Kamra, Murree & Islamabad. Decadal maximum and minimum both raised above normal by 5.2°C and 1.5°C respectively in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 33%, 99.1hrs, 3.8km/hr and 5.7mm/day respectively.

1.1 Sindh

Dry weather reported from agricultural plains of Sindh. Decadal maximum & minimum both raised above normal by 3.2°C & 1.2°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 32%, 105.3hrs, 5.4km/hr and 5.2mm/day respectively.

1.2 Khyber Pakhtunkhwa (KP)

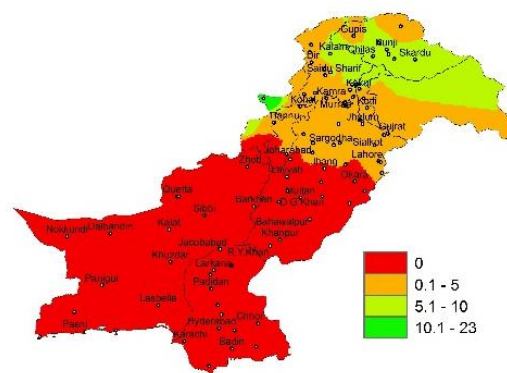
Light to moderate rainfall reported from agricultural plains of KP. Chief amount of rainfall received at Parachinar, Kalam & Malam Jabba. Decadal maximum & minimum both raised above normal by 7.5°C & 1.7°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 43%, 89.4hrs, 5.5km/hr and 6.1mm/day respectively.

1.3 Balochistan

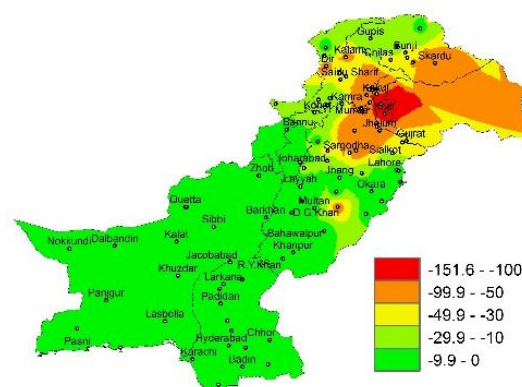
Dry weather reported from agricultural plains of Sindh. Decadal maximum & minimum both raised above normal by 4.9°C & 0.8°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 26%, 109.1hrs, 3.6km/hr and 5.7mm/day respectively.

1.4 Gilgit-Baltistan and Azad Jammu & Kashmir

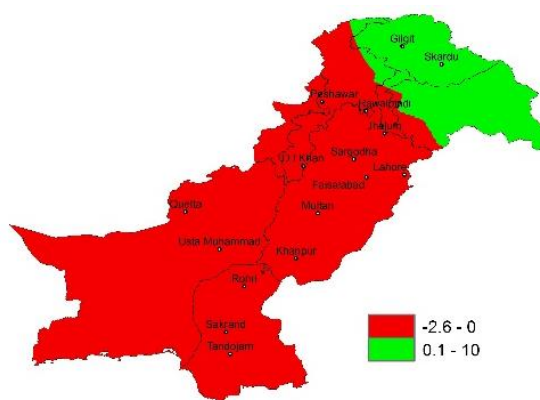
Light to moderate rainfall reported from agricultural plains of GB & Kashmir. Chief amount of rainfall received at Muzafarbad, Bagrote & Astore. Decadal maximum raised above normal by 1.1°C, whereas decadal minimum temperature dropped below normal by 0.7°C in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 42%, 85.3hrs, 1.7km/hr and 3.4mm/day respectively.



I. Actual rainfall



II. Departure of rainfall from Normal



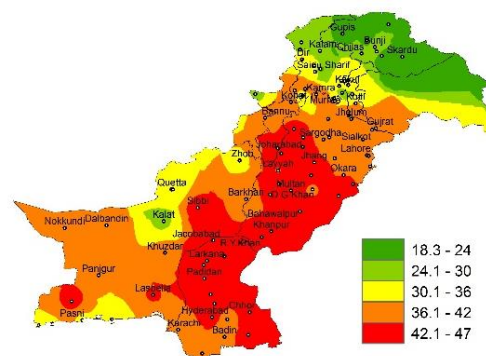
III. Departure of rainfall from Previous Decade

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

2(a) **Past Weather for Major Agricultural Plains** **(11th to 20th April, 2017)**

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

Rainfall reported as 0.2mm during the decade; however weather remained cloudy for 03days. Average relative humidity recorded as 41%. Mean day temperature was 37.2°C while night temperature recorded as 17.9°C with 108.4hours bright sunshine duration. Wind speed recorded as 4.3km/hr with mean wind direction *south westerly*.

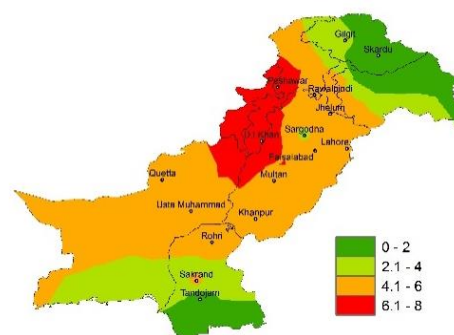


2.2 **RAMC, Faisalabad (Central Punjab)**

Dry weather reported during the decade; however weather remained cloudy for 03days. Average relative humidity recorded as 33%. Mean day temperature was 41.9°C while night temperature recorded as 20.8°C with 61.5hours bright sunshine duration. Wind speed recorded as 2.5km/hr with mean wind direction *north north easterly*.

Wheat: *Very Good condition, maturity stage completed.*

I. **Actual max-temp**

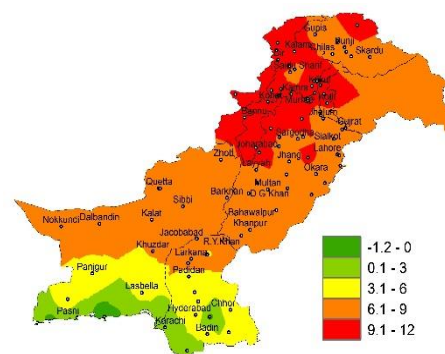


2.3 **RAMC, Tandojam (Lower Sindh)**

Dry weather reported during the decade; however weather remained cloudy for 01day. Average relative humidity recorded as 40%. Mean day temperature was 43.2°C while night temperature recorded as 19.5°C with 101.9hours bright sunshine duration. Wind speed recorded as 9.5km/h with mean wind direction *south westerly*.

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

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



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

Dry weather reported during the decade; however weather remained cloudy for 05days. Average relative humidity recorded as 32%. Mean day temperature was 44.7°C while night temperature recorded as 18.9°C with 96.85 hours bright sunshine duration. Wind speed recorded as 3.1km/h with mean wind direction *south easterly*.

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

Dry weather reported during the decade; however weather remained cloudy for 08days. Average relative humidity recorded as 13%. Mean day temperature was 30.4°C while night temperature recorded as 14.1°C with 109.1hours bright sunshine duration. Wind speed recorded as 4.0km/hr with mean wind direction *north westerly*.

Wheat (Local White): *Good condition, flowering stage*

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 (11th to 20th April, 2017)

2.6 Jhelum

Rainfall reported as trace (not measurable) during the decade; however weather remained cloudy for 06days. Average relative humidity recorded as 36%. Mean day temperature was 39.6°C while night temperature recorded as 18.7°C with 53.2hours bright sunshine duration. Wind speed recorded as 3.5km/hr with mean wind direction *north westerly*.

2.7 Lahore

Dry weather reported during the decade; however weather remained cloudy for 02days. Average relative humidity recorded as 30%. Mean day temperature was 40.8°C while night temperature recorded as 23.6°C with 94.1hours bright sunshine duration. Wind speed recorded as 2.0km/hr with mean wind direction *north westerly*.

2.8 Sargodha

Rainfall reported as trace (not measurable) during the decade; however weather remained clear during the decade. Average relative humidity recorded as 39%. Mean day temperature was 39.8°C while night temperature recorded as 22.7°C with 91.1hours bright sunshine duration. Wind speed recorded 3.9km/hr with mean wind direction *variable*.

2.9 Multan

Dry weather reported during the decade; however weather remained cloudy for 04days. Average relative humidity recorded as 22%. Mean day temperature was 42.9°C while night temperature recorded as 24.6°C with 99.1hours bright sunshine duration. Wind speed recorded 5.8km/hr with mean wind direction *south westerly*.

2.10 Khanpur

Dry weather reported during the decade; however weather remained cloudy for 03days. Average relative humidity recorded as 28%. Mean day temperature was 45°C while night temperature recorded as 22.1°C with 93.4hours bright sunshine duration. Wind speed recorded 4.6km/hr with mean wind direction *south westerly*.

2.11 Sakrand

Dry weather reported during the decade; however weather remained cloudy 1 day. Average relative humidity recorded as 28%. Mean day temperature was 44.3°C while night temperature recorded as 23.2°C with 116.9hours bright sunshine duration. Wind speed recorded 3.1km/hr with wind direction *south westerly*.

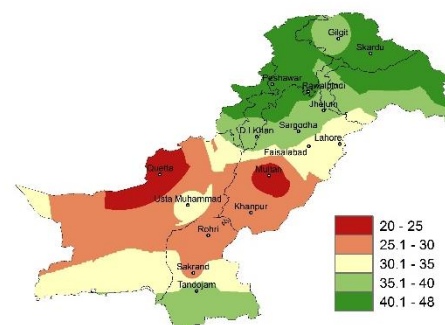


Figure.3: Relative Humidity in Percentage (%)

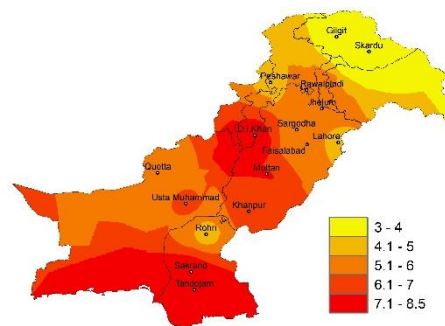


Figure.4: Reference Crop Evapotranspiration ETo(mm/day)

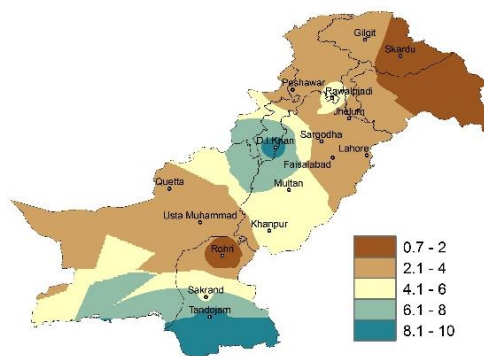


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Dry weather reported during the decade; however weather remained cloudy for 1 day during the decade. Average relative humidity recorded as 27%. Mean day temperature was 44.5°C while night temperature recorded as 26.6°C with 97.1hours 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 cloudy for 02days. Average relative humidity recorded as 38%. Mean day temperature was 42.7°C while night temperature recorded as 21.8°C with 93.2hours bright sunshine duration. Wind speed recorded 8.4km/hr with wind direction *north easterly*.

2.14 Peshawar

Dry weather reported during the decade; however weather remained cloudy for 07days. Average relative humidity recorded as 48%. Mean day temperature was 38.6°C while night temperature recorded as 18.9°C with 85.5hours bright sunshine duration. Wind speed recorded as 2.6km/hr with mean wind direction *north easterly*.

2.15 Skardu

Rainfall reported 7 mm during the decade; however weather remained cloudy for 03days. Average relative humidity recorded as 44%. Mean day temperature was 19.8°C while night temperature recorded as 6.2°C with 84 hours bright sunshine duration. Wind speed recorded as 0.7km/hr with mean wind direction *east south easterly*.

2.16 Gilgit

Rainfall reported as 2 mm during the decade; however weather remained cloudy for 06days. Average relative humidity recorded as 39%. Mean day temperature was 27.0°C while night temperature recorded as 8.5°C with 86.6hours bright sunshine duration. Wind speed recorded as 2.7km/hr with mean wind direction *easterly*.

**3 Ten Days Weather Advisory for Farmers
(21st to 30th April, 2017)****3.1 Temperature Forecast**

Day temperatures are expected slightly above normal in southern parts however slightly normal in northern half 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

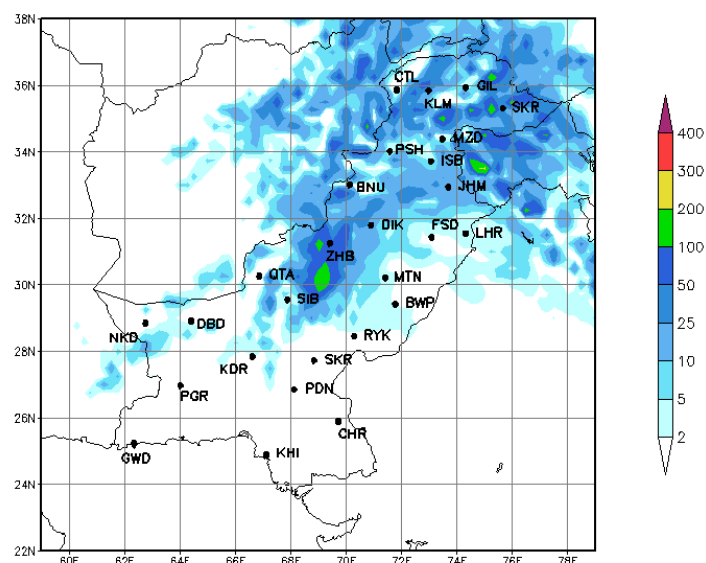
- ❖ **Punjab:** Light to moderate rainfall is expected in upper parts of the province.
- ❖ **Khyber Pakhtunkhwa:** Light to moderate rainfall is expected at isolated places of the province during the decade.
- ❖ **Sindh:** Mostly hot and dry weather is expected in the agricultural plains of province.
- ❖ **Balochistan:** Light to moderate rainfall is expected in upper parts of the province, while dry weather is expected in rest parts.
- ❖ **Gilgit Baltistan:** Light to moderate rainfall 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

- ❖ Wheat crop is at maturity stages in most of the agricultural plains in upper half of the country. Farmers are advised to schedule their harvesting by keeping in view the weather forecast.
- ❖ Dust/sand storm may occur in areas of upper Sindh and southern Punjab, accordingly measures may be taken to preserve the grains and residue after harvesting wheat crop.
- ❖ In the grams crop growing areas, precautionary measures may be taken to preserve the crop from expected lightening/thunder.
- ❖ 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.

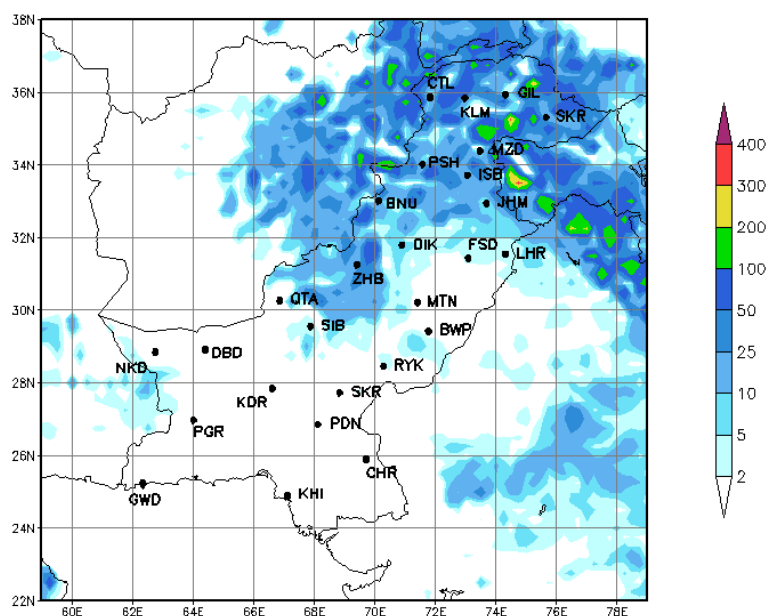
4.1 Precipitation Outlook (21st to 23rd April, 2017)

The forecast for the first three days (21st to 23rd) of the third decade of April 2017 shows that light to moderate is expected in GB, Kashmir, upper KPK, northern Baluchistan and upper Punjab. However dry weather is expected in rest parts of the country.



4.2 Precipitation Outlook (24th to 30th April, 2017)

The outlook for the last six days (24th to 30th) of the third decade of April 2017 shows that light to moderate rainfall is expected at GB & Kashmir, KP and scattered places of northern Baluchistan and upper Punjab. While dry weather may prevail in rest parts of the country.



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)