

Decadal Agromet Bulletin of Pakistan



Highlights....

- ❖ Light to moderate rainfall reported from most parts of Punjab, K.P, G.B, Kashmir and light rainfall reported from few parts of Balochistan however dry weather reported from rest parts of the country during the last decade.
- ❖ Highest amount of rainfall recorded as 79.0mm at Malam Jabba during the last decade.
- ❖ Highest maximum temperature recorded as 47.0°C at Jacobabad during the last decade.
- ❖ Light to moderate rain is expected in most parts of the country, while dry weather is expected in southern parts of the country during the current decade.
- ❖ Wheat crop is at heading-maturity stages in of upper half of the country. Farmers are advised to schedule their harvesting by keeping in view the weather forecast.
- ❖ Farmers of southern Punjab and Sindh are advised to prepare land for cotton crops in time so that best grains conditions may be fully utilized during the whole crop life.
- ❖ Dust/sand storm may occur in areas of matured wheat crop; accordingly measures may be taken to preserve the grains and residue after harvesting.
- ❖ 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: *Dr. Khalid M. Malik, Director*

Editor: *Dr. Dildar H. Kazmi, Meteorologist*

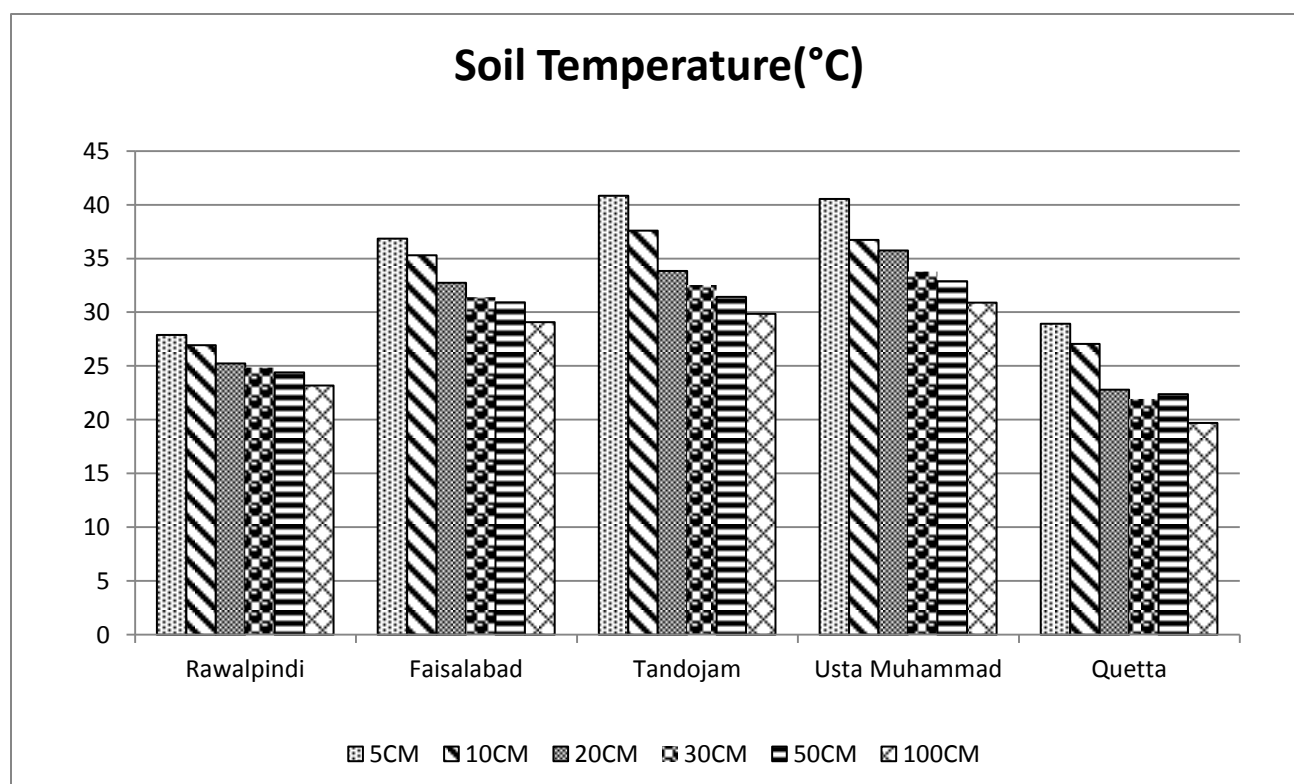
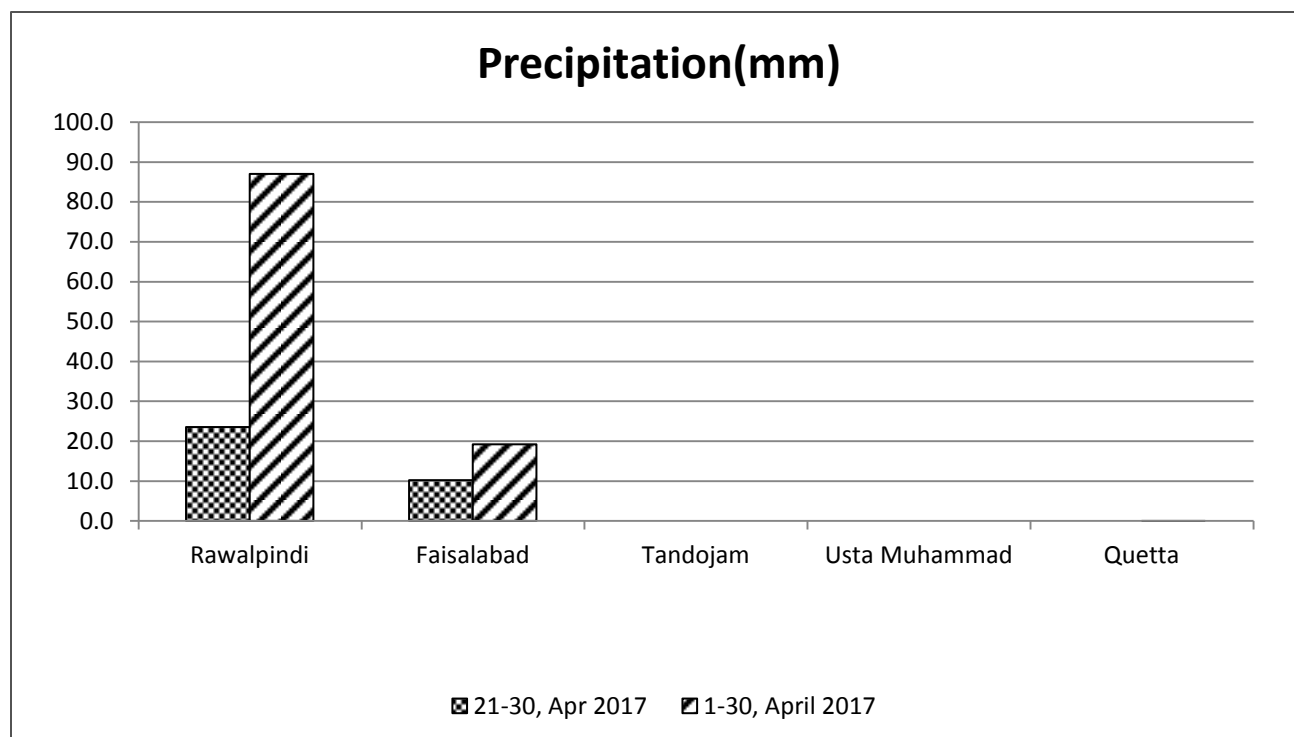
Phone: [+92-51-9250592](tel:+92-51-9250592) Email: info@namc.pmd.gov.pk

Meteorological Conditions during 3rd 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	1.9	23.5	21.6	-0.6	0.9	25.8	27.9	27.0	25.3	24.9	24.4	23.2	59	88.5	3.7	4.8
2	Faisalabad	0.5	10.2	9.7	-1.0	1.1	30.0	36.9	35.3	32.8	31.4	31.0	29.1	41	92.2	3.9	5.7
3	Jhelum	1.0	11.4	10.4	-1.9	-0.5	27.8	32.0	30.5	28.2	27.0	26.9	***	42	88.6	4.6	5.6
4	Lahore	0.3	11.2	10.9	-1.5	-0.6	29.6	34.4	32.4	29.0	26.1	***	25.7	38	81.8	4.3	5.5
5	Sargodha	0.7	8.7	8.0	-3.6	0.7	28.8	33.5	31.9	28.8	28.3	***	26.1	47	76.4	5.0	5.4
6	Multan	0.2	5.8	5.6	-2.6	0.4	30.3	***	***	***	***	***	***	35	89.8	6.8	6.8
7	Khanpur	0.1	0.0	-0.1	-2.0	1.6	32.0	***	34.7	34.6	34.4	34.2	31.5	33	84.0	5.3	6.4
8	Tandojam	0.1	0.0	-0.1	-1.9	0.0	30.4	40.9	37.6	33.9	32.6	31.5	29.9	46	99.2	11.8	8.3
9	Sakrand ☆	0.0	0.0	0.0	0.2	2.4	33.4	39.8	***	***	***	***	31.2	32	107.7	7.6	8.2
11	Rohri	0.0	0.0	0.0	-0.7	-1.1	33.2	***	***	***	***	***	***	29	104.9	2.8	5.9
12	D.I Khan	0.3	13.0	12.7	0.1	0.3	29.6	***	***	***	***	***	***	31	86.0	9.2	7.7
13	Peshawar	1.0	14.0	13.0	-0.2	-0.8	26.3	33.5	29.4	27.9	24.2	19.7	22.5	51	72.2	3.8	4.7
14	Usta .M	0.2	0.0	-0.2	4.5	-3.5	33.4	40.6	36.8	35.8	33.8	32.9	30.9	26	***	3.4	7.0
15	Quetta	0.3	0.0	-0.3	-2.2	0.6	19.6	29.0	27.1	22.8	22.0	22.4	19.7	16	106.6	6.3	5.7
16	Skardu	0.7	5.0	4.3	-1.1	-0.1	13.6	***	***	***	***	***	***	53	60.6	2.1	3.2
17	Gilgit	0.7	17.1	16.4	-4.3	0.7	16.9	***	***	***	***	***	***	50	58.9	3.6	3.6

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 (21st to 30th April, 2017)

Light to moderate rainfall reported from most parts of Punjab, K.P, G.B, Kashmir and light rainfall reported from few parts of Balochistan however 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 Murree, Sahiwal & Islamabad. Decadal maximum dropped below normal by 1.9°C and minimum raised above normal by 0.5°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 42%, 85.9hrs, 4.8km/hr and 5.7mm/day respectively.

1.1 Sindh

Dry weather reported from agricultural plains of Sindh. Decadal maximum dropped below normal by 0.8°C and minimum raised above normal by 0.4°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 36%, 103.9hrs, 7.4km/hr and 7.5mm/day respectively.

1.2 Khyber Pakhtunkhwa (KP)

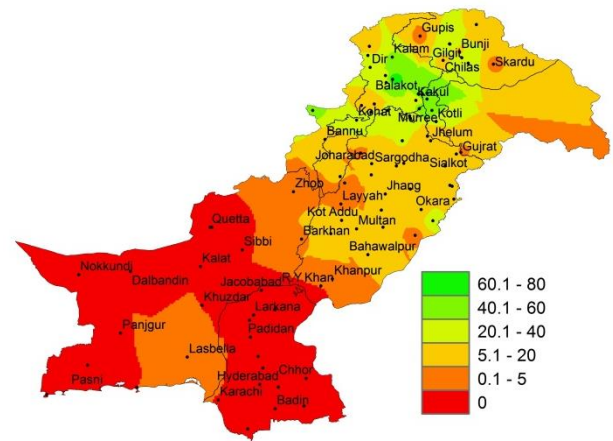
Light to moderate rainfall reported from agricultural plains of KP. Chief amount of rainfall received at Malam Jabba, Pattan & Parachinar. Decadal maximum & minimum both dropped below normal by 0.1°C & 0.3°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 41%, 79.1hrs, 6.5km/hr and 6.2mm/day respectively.

1.3 Balochistan

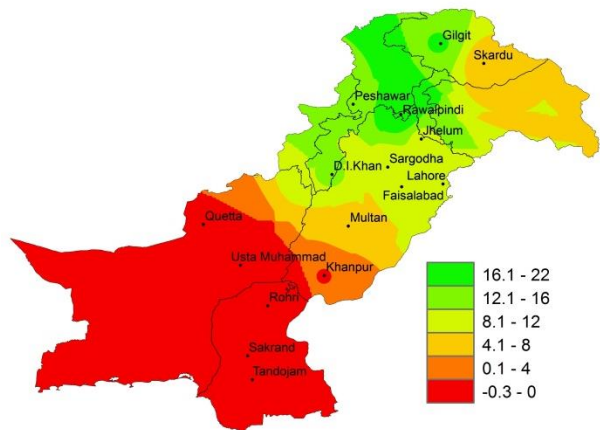
Light rainfall reported from few agricultural plains of Balochistan. Chief amount of rainfall received at Lasbella & Barkhan. Decadal maximum raised above normal by 1.2°C & minimum dropped below normal by 1.5°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 21%, 106.6hrs, 4.8km/hr and 6.4mm/day respectively.

1.4 Gilgit-Baltistan and Azad Jammu & Kashmir

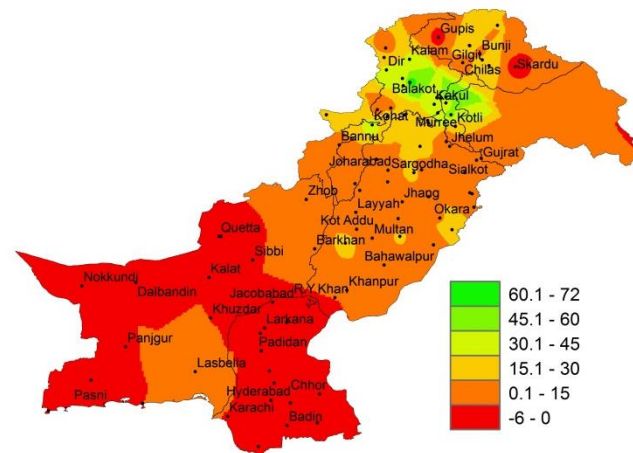
Light to moderate rainfall reported from agricultural plains of GB & Kashmir. Chief amount of rainfall received at Rawalakot, Muzaffarabad, & Garhi Doppatta. Decadal maximum dropped below normal by 2.7°C & minimum temperature raised above normal by 0.3°C in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 52%, 59.8hrs, 2.9km/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 (21st to 30th April, 2017)

2.1 RAMC, Rawalpindi (Potohar region)

Rainfall reported as 23.5mm during the decade; however weather remained cloudy for 07days. Average relative humidity recorded as 59%. Mean day temperature was 32.9°C while night temperature recorded as 18.6°C with 88.5hours bright sunshine duration. Wind speed recorded as 3.7km/hr with mean wind direction *south south-easterly*.

2.2 RAMC, Faisalabad (Central Punjab)

Rainfall reported as 10.2mm during the decade; however weather remained cloudy for 08days. Average relative humidity recorded as 41%. Mean day temperature was 37.2°C while night temperature recorded as 22.7°C with 92.20hours bright sunshine duration. Wind speed recorded as 3.9 km/hr with mean wind direction *north north easterly*.

Crop Condition: Field is being prepared for new crops.

2.3 RAMC, Tandojam (Lower Sindh)

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 46%. Mean day temperature was 38.7°C while night temperature recorded as 22.1°C with 99.2hours bright sunshine duration. Wind speed recorded as 11.8km/h with mean wind direction *south westerly*.

Cotton: Good condition, Germination stage.

2.4 RAMC, Usta Muhammad (Eastern Balochistan)

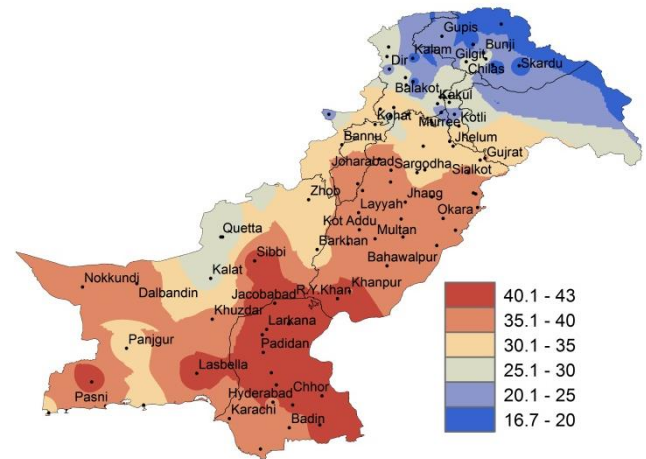
Dry weather reported during the decade; however weather remained cloudy for 04days. Average relative humidity recorded as 26%. Mean day temperature was 47.7°C while night temperature recorded as 19.1°C with 119.62hours bright sunshine duration. Wind speed recorded as 3.86km/h with mean wind direction *south easterly*.

Crop Condition: Field is being prepared for new crops.

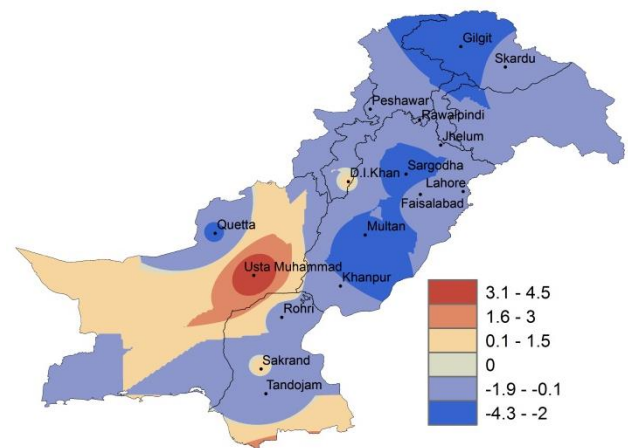
2.5 RAMC, Quetta (Northern Balochistan)

Dry weather reported during the decade; however weather remained cloudy for 03days. Average relative humidity recorded as 16%. Mean day temperature was 26.6°C while night temperature recorded as 12.5°C with 106.6hours bright sunshine duration. Wind speed recorded as 6.3km/hr with mean wind direction *north westerly*.

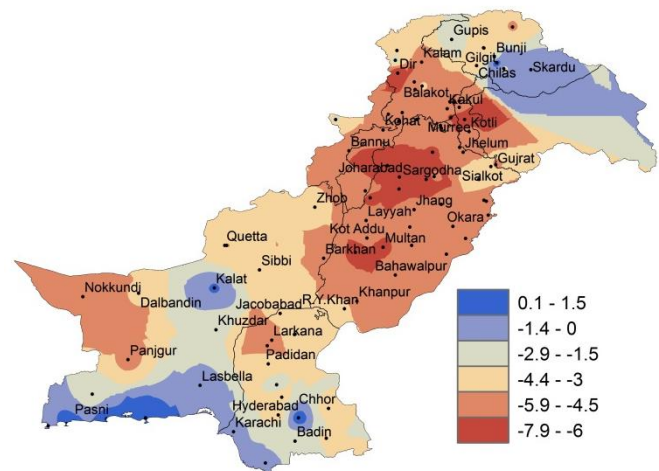
Wheat (Local White): Good condition, milk maturity stage



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 (°C)

2(b) Past Weather for Sub-Regional Agricultural Plains (21st to 30th April, 2017)

2.6 Jhelum

Rainfall reported as 11.4mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 42%. Mean day temperature was 35.1°C while night temperature recorded as 20.4°C with 88.6hours bright sunshine duration. Wind speed recorded as 4.6km/hr with mean wind direction *north westerly*.

2.7 Lahore

Rainfall reported as 11.2mm during the decade; however weather remained cloudy for 05days. Average relative humidity recorded as 38%. Mean day temperature was 35.6°C while night temperature recorded as 23.5°C with 81.8hours bright sunshine duration. Wind speed recorded as 9.3km/hr with mean wind direction *north easterly*.

2.8 Sargodha

Rainfall reported as 8.7mm during the decade; however weather remained cloudy for 04days. Average relative humidity recorded as 47%. Mean day temperature was 34.5°C while night temperature recorded as 23.0°C with 76.9hours bright sunshine duration. Wind speed recorded 4.99km/hr with mean wind direction *variable*.

2.9 Multan

Rainfall reported as 5.8mm during the decade; however weather remained cloudy for 04days. Average relative humidity recorded as 35%. Mean day temperature was 36.9°C while night temperature recorded as 23.7°C with 89.8hours bright sunshine duration. Wind speed recorded 6.8km/hr with mean wind direction *north easterly*.

2.10 Khanpur

Dry weather reported during the decade; however weather remained cloudy for 03days. Average relative humidity recorded as 33%. Mean day temperature was 39.3°C while night temperature recorded as 24.7°C with 84.0hours bright sunshine duration. Wind speed recorded 5.3km/hr with mean wind direction *north easterly*.

2.11 Sakrand

Dry weather reported during the decade; however weather remained cloudy 01day. Average relative humidity recorded as 32%. Mean day temperature was 42.0°C while night temperature recorded as 24.8°C with 107.7hours bright sunshine duration. Wind speed recorded 7.58km/hr with wind direction *variable*.

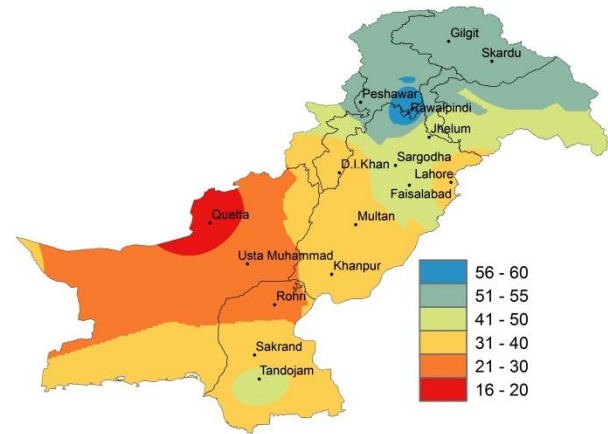


Figure.3: Relative Humidity in Percentage (%)

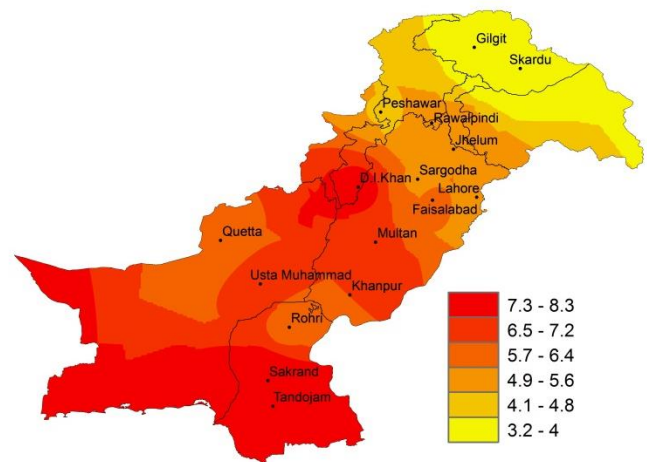


Figure.4: Reference Crop Evapotranspiration ETo(mm/day)

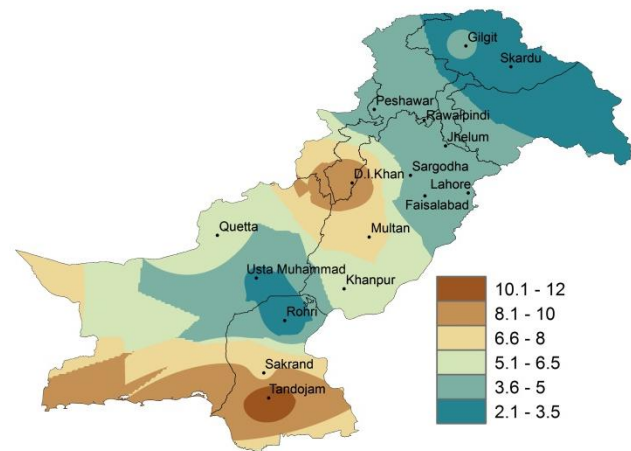


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Rohri

Dry weather reported during the decade; however weather remained clear throughout the decade. Average relative humidity recorded as 29%. Mean day temperature was 41.3°C while night temperature recorded as 25.0°C with 104.9hours bright sunshine duration. Wind speed recorded 2.8km/hr with wind direction *north easterly*.

2.13 D.I. Khan

Rainfall reported as 13.0mm during the decade; however weather remained cloudy for 03days. Average relative humidity recorded as 31%. Mean day temperature was 37.6°C while night temperature recorded as 21.6°C with 86.0hours bright sunshine duration. Wind speed recorded 9.2km/hr with wind direction *north easterly*.

2.14 Peshawar

Rainfall reported as 14.0mm during the decade; however weather remained cloudy for 09days. Average relative humidity recorded as 51%. Mean day temperature was 33.5°C while night temperature recorded as 19.0°C with 72.2hours bright sunshine duration. Wind speed recorded as 3.8km/hr with mean wind direction *north easterly*.

2.15 Skardu

Rainfall reported 5.0mm during the decade; however weather remained cloudy for 08days. Average relative humidity recorded as 53%. Mean day temperature was 19.8°C while night temperature recorded as 7.3°C with 60.6hours bright sunshine duration. Wind speed recorded as 2.1km/hr with mean wind direction *east south easterly*.

2.16 Gilgit

Rainfall reported as 17.1mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 50%. Mean day temperature was 23.5°C while night temperature recorded as 10.3°C with 58.9hours bright sunshine duration. Wind speed recorded as 3.6km/hr with mean wind direction *easterly*.

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

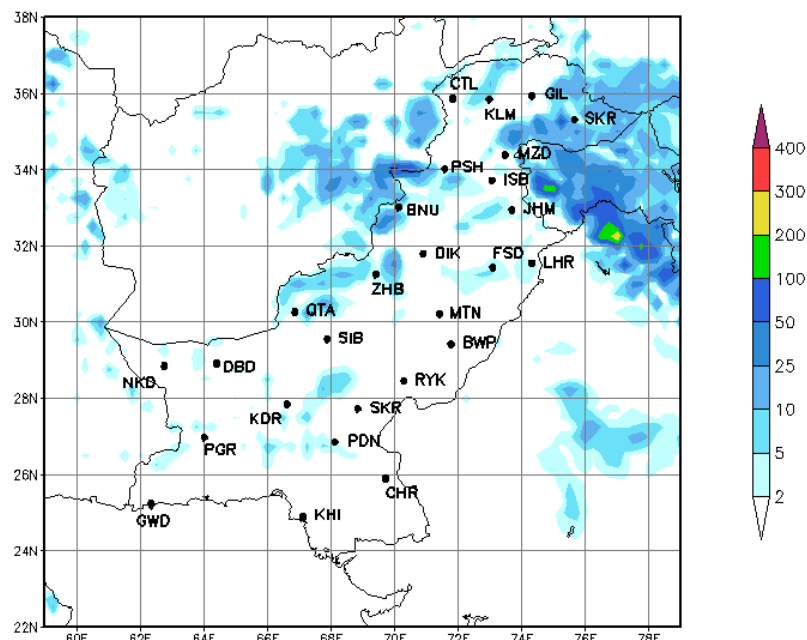
- ❖ **Punjab:** Light to moderate rainfall is expected in upper parts of the province.
- ❖ **Khyber Pakhtunkhwa:** Light to moderate rainfall is expected at isolated places of the province during the decade.
- ❖ **Sindh:** Light rainfall is expected at isolated places of province from 6th to 8th of the decade.
- ❖ **Balochistan:** Light to moderate rainfall is expected in most parts of the province during the decade.
- ❖ **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 heading-maturity stages in of upper half of the country. Farmers are advised to schedule their harvesting by keeping in view the weather forecast.
- ❖ Farmers of southern Punjab and Sindh are advised to prepare land for cotton crops in time so that best grains conditions may be fully utilized during the whole crop life.
- ❖ Dust/sand storm may occur in areas of matured wheat crop; accordingly measures may be taken to preserve the grains and residue after harvesting.
- ❖ 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.

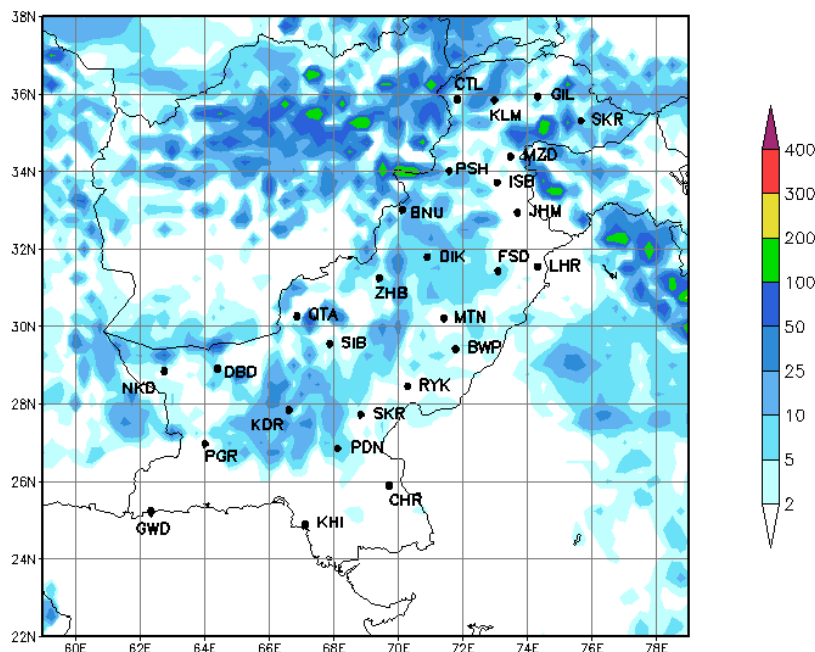
4.1 Precipitation Outlook (2nd to 4th May, 2017)

The forecast for the next three days (2nd to 4th) of the first decade of May 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 (5th to 10th May, 2017)

The outlook for the last six days (5th to 10th) of the first decade of May 2017 shows that light to moderate rainfall is expected in most parts of the country. While dry weather may prevail in southern 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)