

Decadal Agromet Bulletin of Pakistan



Highlights....

- ❖ Heavy to moderate rainfall reported in the agricultural plains of Punjab. Light to moderate rainfall reported in agriculture plains of K.P, Sindh, Balochistan, G.B & Kashmir during the last decade.
- ❖ Highest amount of rainfall reported 153.0mm at Parachinar during the last decade.
- ❖ Highest Maximum temperature recorded 50.0°C at Sibbi during the last decade.
- ❖ Mainly hot and dry weather is expected in most parts of the country, however rain-thunderstorm with strong gusty winds are expected at isolated places country from 2nd to 5th and from 7th to 9th of the decade.
- ❖ Due to mostly prevailing dry weather and rising day temperature, cotton and sugarcane farmers should irrigate the crops as per requirement.
- ❖ Farmers obtaining crop water through tube wells are also 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.

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

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

Editor-in-Chief: *Muhammad Aslam, Director*

Editor: *Asma Jawad Hashmi, Deputy Director*

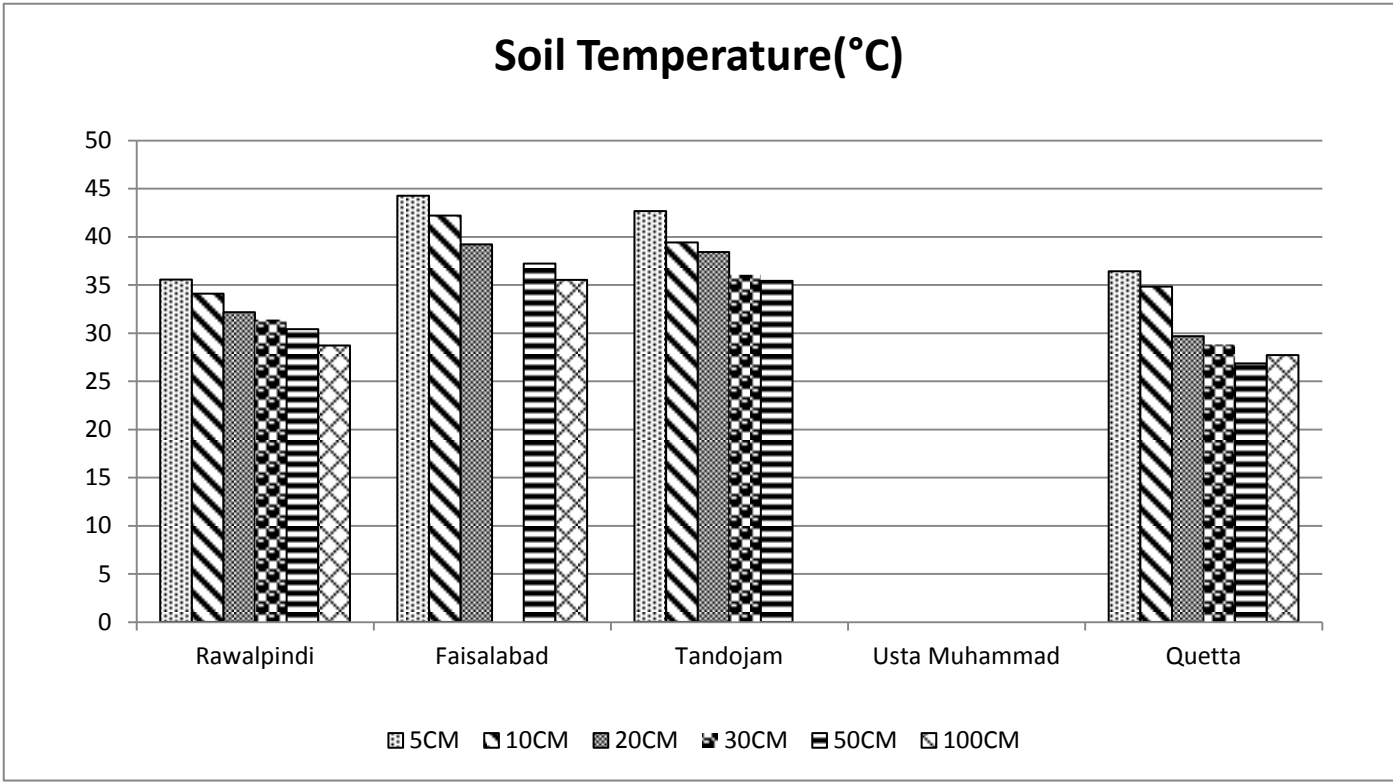
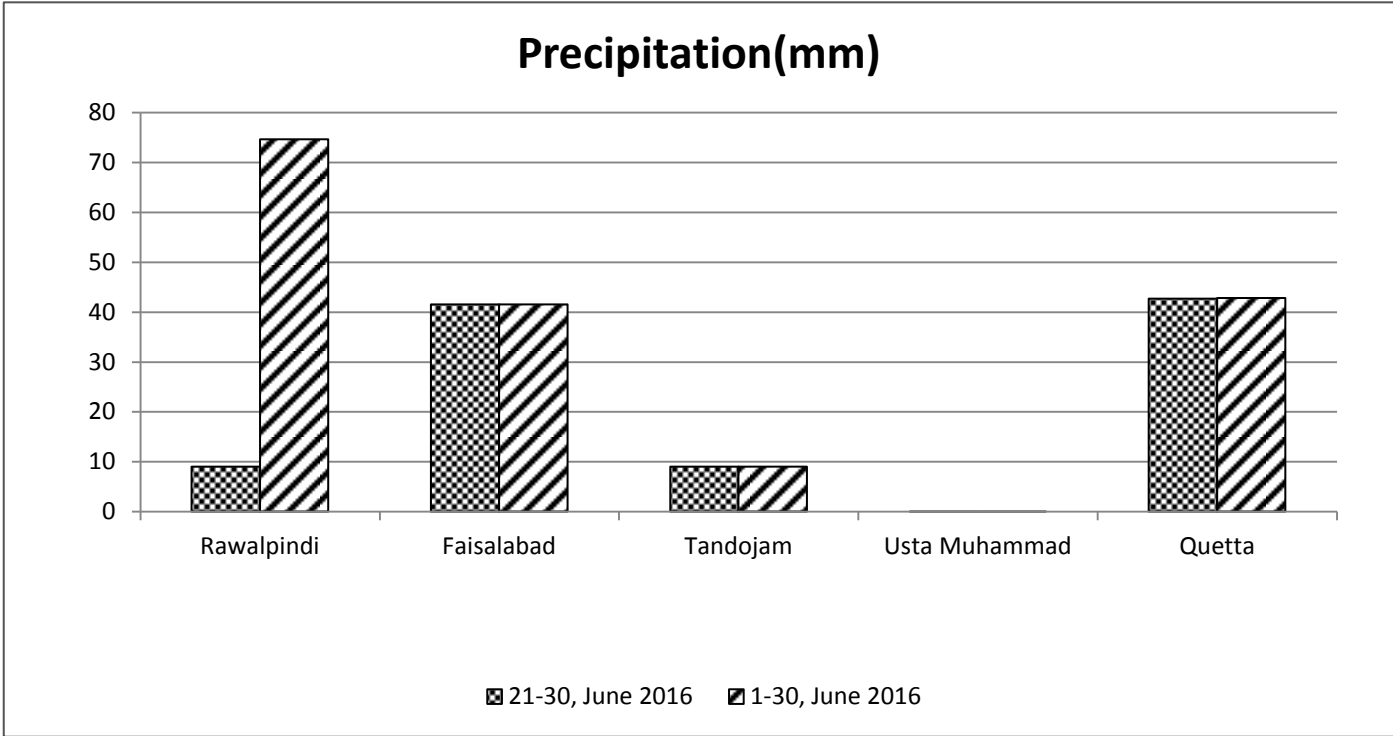
Phone: [+92-51-9250592](tel:+92-51-9250592) Email: info@namc.pmd.gov.pk

Meteorological conditions during 3rd decade of June, 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	5.4	9.0	3.6	1.4	1.5	32.3	35.6	34.1	32.2	31.4	30.4	28.7	55	96.0	3.5	6.1
2	FAISALABAD	1.9	41.5	39.6	0.5	0.7	33.6	44.3	42.2	39.2	***	37.2	35.5	52	84.5	4.9	6.4
3	JHELUM	4.2	23.2	19.0	-0.4	-0.7	32.2	37.3	35.3	33.2	30.4	31.7	***	59	83.2	3.7	5.7
4	LAHORE	2.2	65.4	63.2	-0.2	-1.1	32.2	35.5	35.2	33.1	32.0	***	32.5	60	73.7	3.2	5.3
5	SARGODHA	3.3	84.6	81.3	-1.9	-0.8	32.8	36.9	35.0	33.5	32.5	33.2	31.5	61	64.2	6.1	5.7
6	MULTAN	1.0	0.0	-1.0	0.5	1.0	36.2	***	***	***	***	***	***	44	61.0	6.2	6.5
7	KHANPUR	0.5	28.0	27.5	-1.0	-0.1	34.7	***	38.5	38.6	38.7	38.7	36.5	56	77.1	5.0	6.2
8	TANDOJAM	0.7	9.0	8.3	0.2	-0.7	32.3	42.7	39.4	38.4	36.1	35.4	***	63	102.3	12.7	7.7
9	SAKRAND ☆	1.7	70.0	68.3	-0.8	0.8	33.8	48.8	42.4	***	***	***	36.6	57	97.3	7.0	7.1
11	DI KHAN	0.8	3.0	2.2	0.0	1.5	34.0	***	***	***	***	***	***	53	80.7	***	6.9
11	PESHAWAR	1.3	0.1	-1.2	0.7	-0.6	33.4	38.7	34.1	33.5	***	***	***	59	92.8	4.1	6.2
12	USTA MUHAMMAD	1.8	0.1	-1.7	1.3	0.2	36.8	***	***	***	***	***	***	41	***	***	8.3
13	QUETTA	0.0	42.7	42.7	1.0	0.7	29.0	36.4	34.8	29.7	28.8	26.9	27.7	36	85.0	4.9	6.2
14	SKARDU	0.4	0.1	-0.3	1.0	2.3	24.1	***	***	***	***	***	***	29	81.8	2.9	5.0
15	GILGIT	0.7	1.2	0.5	1.9	3.3	27.7	***	***	***	***	***	***	41	44.9	3.8	4.9

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; $\text{Dep} \div \text{Normal} \times 100$. 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 June, 2016



1. Past Weather (21st to 30th June, 2016)

Heavy to moderate rainfall reported in the agricultural plains of Punjab. Light to moderate rainfall reported in agriculture plains of K.P, Sindh, Balochistan, GB & Kashmir during the last decade.

1.1 Punjab

Heavy to moderate rainfall reported in the agricultural plains of Punjab. Chief amount of rainfall received in Sargodha, Lahore & Mandi B.Din. Decadal maximum dropped below normal by 0.2°C & minimum raised above normal by 0.1°C, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 55%, 77.1hrs, 4.7km/hr and 6.0mm/day respectively.

1.2 Sindh

Light to moderate reported in the agricultural plains of Sindh. Chief amount of rainfall received in Karachi, Shaheed Benzairabad & Hyderabad. Decadal maximum dropped below normal by 0.2°C & minimum remained normal, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 40%, 66.5hrs, 6.6km/hr and 7.4mm/day respectively.

1.3 Khyber Pakhtunkhwa (KP)

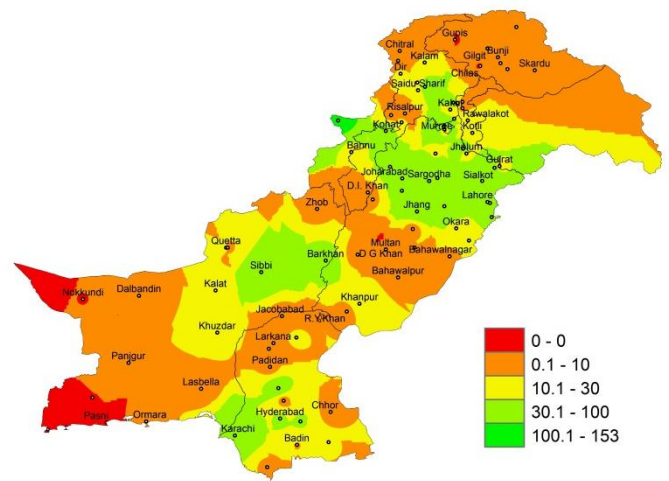
Light to moderate rainfall reported in the agricultural plains of KP. Chief amount of rainfall received in Parachinar, Malam Jabba & Kohat. Decadal maximum & minimum both raised above normal by 0.4°C & 0.4°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 56%, 86.8hrs, 4.1km/hr and 6.6mm/day respectively.

1.4 Balochistan

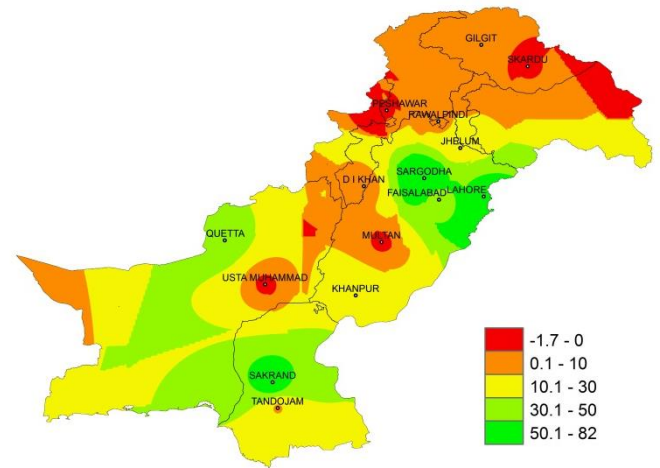
Light to moderate rainfall reported in the agricultural plains of Balochistan. Chief amount of rainfall received in Sibbi, Barkhan & Khuzdar. Decadal maximum & minimum both raised above normal by 1.2°C & 0.4°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 39%, 85.0hrs, 4.9km/hr and 7.3mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

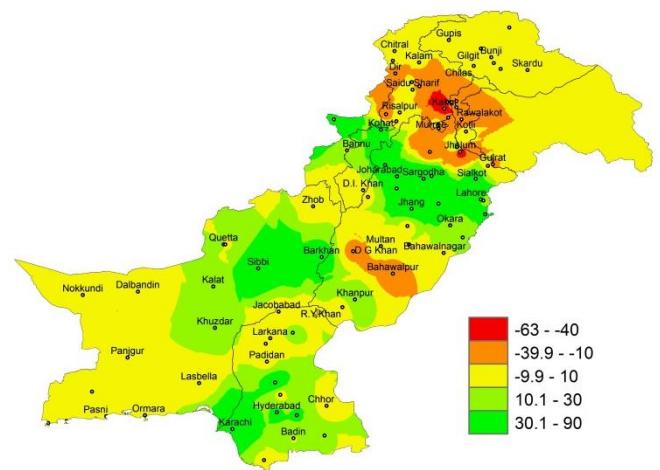
Light to moderate rainfall reported in the agricultural plains of GB & Kashmir. Chief amount of rainfall received Rawalakot, Muzaffarabad & Kotli. Decadal maximum & minimum temperature both raised above normal by 1.0°C & 2.8°C respectively, in the province. Whereas mean values of relative humidity, sunshine hour, wind speed & ETo were recorded as 35%, 63.4hrs, 3.4km/hr and 5.0mm/day respectively.



I. Actual rainfall



II. Departure of rainfall from Normal



Departure of rainfall from Previous Decade

Figure.1: Rainfall distribution during previous decade in "mm"

2(a) **Past Weather for Major Agricultural Plains**
(21st to 30th June, 2016)

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

Rainfall reported as 9.0mm during the decade; however weather remained cloudy for 08days. Average relative humidity recorded as 55%. Mean day temperature was 38.8°C while night temperature recorded as 25.7°C with 96.0hours bright sunshine duration. Wind speed recorded as 3.5km/hr with mean wind direction *westerly*.

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

Rainfall reported as 41.5mm during the decade; however weather remained cloudy for 09days. Average relative humidity recorded as 52%. Mean day temperature was 39.5°C while night temperature recorded as 27.7°C with 84.5hours bright sunshine duration. Wind speed recorded as 4.9km/hr with mean wind direction *south easterly*.
Cotton: Very good condition, budding completed.

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

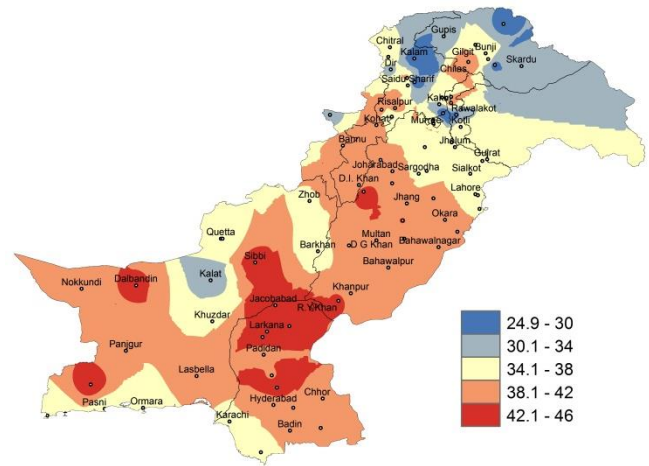
Rainfall reported as 9.0mm during the decade; however weather remained cloudy for 07days. Average relative humidity recorded as 63%. Mean day temperature was 38.4°C while night temperature recorded as 26.2°C with 102.3hours bright sunshine duration. Wind speed recorded as 12.7km/h with mean wind direction *south westerly*.
Cotton (Star-2): Good condition, budding stage.

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

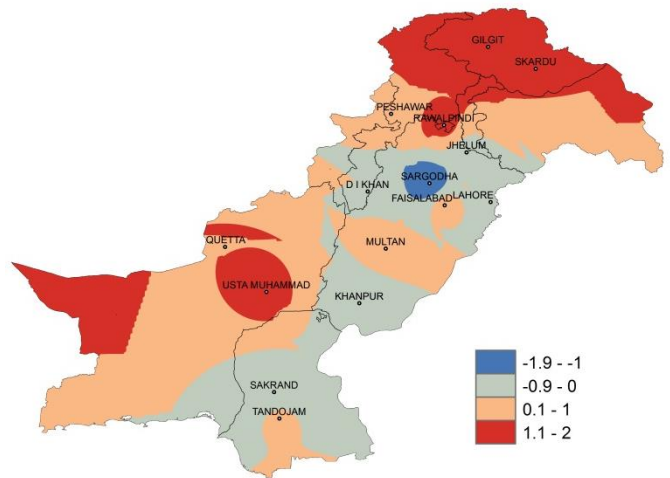
Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 08days. Average relative humidity recorded as 41%. Mean day temperature was 44.3°C while night temperature recorded as 29.2°C.
Rice (Paniri): Good Condition.

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

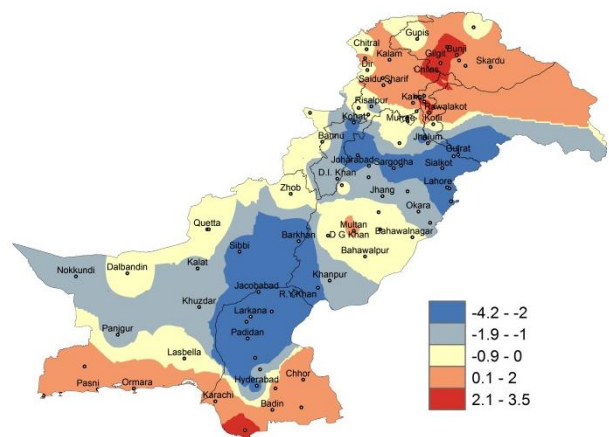
Rainfall reported as 42.7mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 36%. Mean day temperature was 33.8°C while night temperature recorded as 21.2°C with 85.0hours bright sunshine duration. Wind speed recorded as 4.9km/hr with mean wind direction *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 (21st to 30th June, 2016)

2.6 Jhelum

Rainfall reported as 23.2mm during the decade; however weather remained cloudy for 09days. Average relative humidity recorded as 59%. Mean day temperature was 38.0°C while night temperature recorded as 26.3°C with 83.2hours bright sunshine duration. Wind speed recorded 3.7km/hr with wind direction *south easterly*.

2.7 Lahore

Rainfall reported as 65.4mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 60%. Mean day temperature was 37.1°C while night temperature recorded as 27.3°C with 73.7hours bright sunshine duration. Wind speed recorded as 3.2km/hr with mean wind direction *south easterly*.

2.8 Sargodha

Rainfall reported as 84.6mm during the decade; however weather remained cloudy for 07days. Average relative humidity recorded as 61%. Mean day temperature was 38.3°C while night temperature recorded as 27.2°C with 64.2hours bright sunshine duration. Wind speed recorded 6.1km/hr with mean wind direction *variable*.

2.9 Multan

Dry weather reported during the decade; however weather remained cloudy for 09days. Average relative humidity recorded as 44%. Mean day temperature was 41.5°C while night temperature recorded as 30.9°C with 61.0hours bright sunshine duration. Wind speed recorded 6.2km/hr with mean wind direction *south westerly*.

2.10 Khanpur

Rainfall reported ad 28.0mm during the decade. However sky remained cloudy for 10days. Average relative humidity recorded as 56%. Mean day temperature was 40.5°C while night temperature recorded as 28.9°C with 77.1hours bright sunshine duration. Wind speed recorded 5.0km/hr with mean wind direction *south westerly*.

2.11 Sakrand

Rainfall reported as 70.0mm during the decade; however weather remains cloudy for 09days. Average relative humidity recorded as 57%. Mean day temperature was 39.6°C while night temperature recorded as 28.0°C with 97.3hours bright sunshine duration. Wind speed recorded 7.0km/hr with wind direction *south easterly*.

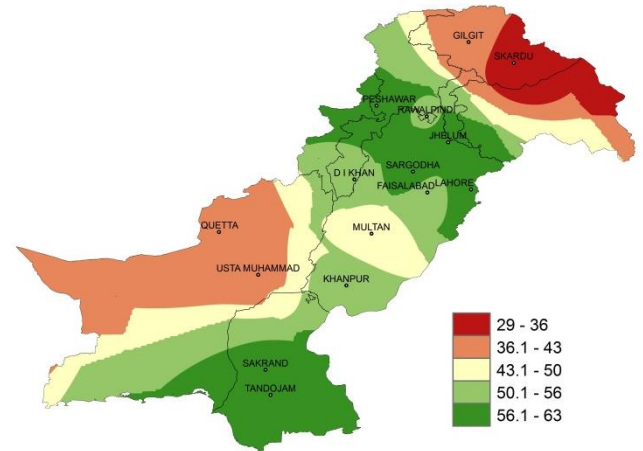


Figure.3: Relative Humidity in Percentage (%)

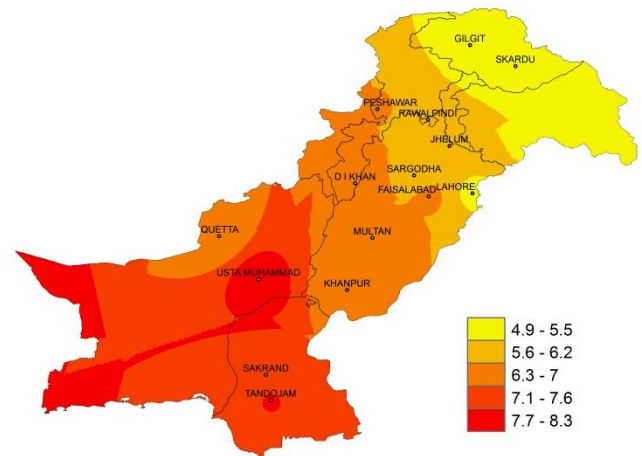


Figure.4: Reference Crop Evapotranspiration “ETo” in mm/day

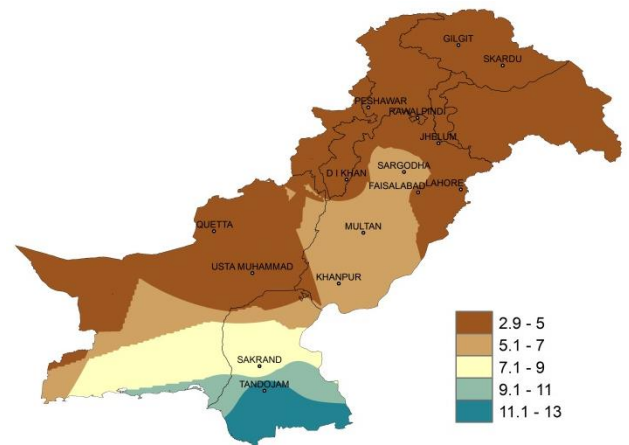


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 D.I. Khan

Rainfall reported as 3.0mm during the decade; however weather remains cloudy for 04days. Average relative humidity recorded as 53%. Mean day temperature was 40.4°C while night temperature recorded as 27.6°C with 80.7hours bright sunshine duration..

2.13 Peshawar

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 01day. Average relative humidity recorded as 59%. Mean day temperature was 40.2°C while night temperature recorded as 26.5°C with 68.1hours bright sunshine duration. Wind speed recorded as 4.1km/hr with mean wind direction *north westerly*.

2.14 Skardu

Rainfall reported as Trace (not measureable) during the decade; however weather remained cloudy for 05days. Average relative humidity recorded as 29%. Mean day temperature was 32.7°C while night temperature recorded as 16.1°C with 81.8hours bright sunshine duration. Wind speed recorded as 2.9km/hr with mean wind direction *south east-southerly*.

2.15 Gilgit

Rainfall reported as 1.2mm during the decade; however weather remained cloudy for 10days. Average relative humidity recorded as 41%. Mean day temperature was 36.5°C while night temperature recorded as 18.9°C with 44.9hours bright sunshine duration. Wind speed recorded as 3.8km/hr with mean wind direction *easterly*.

**3. Ten Days Weather Advisory for Farmers
(1st to 10th July, 2016)****2.1 Temperature Forecast**

Day time temperature expected to remain 2-4°C above normal in most parts of the country & night temperatures are expected normal in most of the agricultural plains 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 while during dust/thunderstorm it will rise up to 20-40 knots.

3.3 Rain Forecast

- ❖ **Punjab:** Mainly dry and hot weather is expected during the decade. Rain-dust storm/thunderstorm and gusty wind at isolated places in Bahawalpur, D.G Khan, Faisalabad, Rawalpindi, Lahore & Gujranwala division are expected at isolated places from 2nd to 5th and from 7th to 9th during the decade.
- ❖ **Khyber Pakhtunkhwa:** Mainly hot and dry weather is expected in most parts of the province. However Rain-thunderstorm is expected at few places in Kohat, Mardan, Malakand, Hazara & Peshawar Division during the decade.
- ❖ **Sindh:** Very hot and dry weather is expected in most parts of the province with the possibility of dust-storm due to the heat. Light rainfall is expected at isolated places including Hyderabad, Karachi, Mirpur Khas & Sukkur divisions from 7th to 10th of the decade
- ❖ **Balochistan:** Very hot and dry weather is expected in most parts of Balochistan, however rain-dust storm/thunderstorm with gusty winds is expected at isolated places in Zhob during the decade; however light rainfall reported is expected at isolated places in Makran, Sibbi and Quetta divisions from 7th to 10th decade.
- ❖ **Gilgit Baltistan:** Mainly hot weather is expected in most parts of G.B. However rain-thunderstorm is expected at isolated places including Astore, Gilgit, Hunza-Nagar & Skardu during the decade.
- ❖ **Kashmir:** Mainly hot weather is expected in most parts of Kashmir. However rain-thunderstorm is expected at isolated places including Muzaffarabad, Kotli, Neelum & Rawalakot during the decade.

3.4 Advisory for Farmers

- ❖ Due to mostly prevailing dry weather and rising day temperature, cotton and sugarcane farmers should irrigate the crops as per requirement.
- ❖ Farmers obtaining crop water through tube wells are also 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.
- ❖ Farmers are advised to take in time precautionary measures to protect their crops, livestock and other property from any expected heavy rains.

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)