

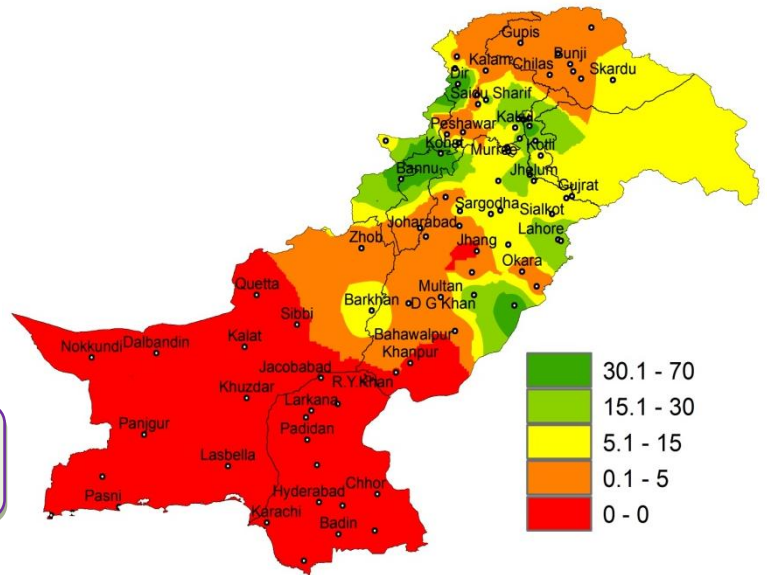
Weekly Weather and Crop Bulletin for Pakistan

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Rainfall Distribution (mm) during the previous
Week (4th September to 10th September, 2017)



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Highlights of Past Weather (4th September to 10th September, 2017)

Below normal day time temperatures reported from most parts of the country except Kashmir and Gilgit-Baltistan during this week.

Province wise distribution of rainfall reported as follows:

- Light to moderate rainfall reported from scattered places of Punjab, KP, while light rain fall reported from scattered places of Kashmir and Gilgit-Baltistan during this week
- Light rainfall reported from isolated places of Baluchistan and FATA during the week.
- Dry weather reported from Sindh province.

Patron-in-Chief: Dr. Ghulam Rasul (Director General)

Editor-in-Chief: Dr. Khalid M. Malik (Director)

Editor: Dr. Dildar H. Kazmi (Meteorologist)

Past Weather of Provinces (4th September to 10th September, 2017)

Punjab

Light to moderate rainfall reported from Punjab during the week. Weekly maximum and minimum temperatures recorded as 35.3°C & 24.6°C respectively. For the recent week on average 174.6 growing degree days were accumulated by the end of the last week. Average relative humidity recorded as 72% and wind speed in the morning/evening recorded as 2.1/3.4 knots. During the previous week the highest amount of rainfall was recorded as 42.0 mm at Bahawalnagar & highest maximum temperature was recorded as 41.0°C at Bakkar.

Balochistan

Light rainfall was reported from isolated places of Balochistan province during the week. Weekly maximum and minimum temperatures recorded as 30.7°C & 21.7°C respectively. For the recent week on average 149.5 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 48% and wind speed in the morning/evening recorded as 0.9/5.1 knots. During the previous week the highest amount of rainfall was recorded as 8.0 mm at Barkhan & highest maximum temperature was recorded as 41.5°C at Dilbadin.

Khyber Pakhtunkhwa

Light to moderate rainfall reported from scattered places of Khyber Pakhtunkhwa during the week. Weekly maximum and minimum temperatures recorded as 27.6°C & 19.0°C respectively. For the recent week on average 128.0 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 65% and wind speed in the morning/evening recorded as 0.5/3.6 knots. During the previous week the highest amount of rainfall was recorded as 68.0 mm at Dir & highest maximum temperature was recorded as 38.0 °C at Lower Dir.

Gilgit-Baltistan and Azad Jammu & Kashmir

Light rainfall reported from most part of Gilgit-Baltistan & Kashmir during the week. Weekly maximum and minimum temperatures recorded as 31.0°C & 16.2°C respectively. For the recent week on average 130.1 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 57% and wind speed in the morning/evening recorded as 0.8/2.2 knots. During the previous week the highest amount of rainfall was recorded as 47.8 mm at Garhi Dopatta & highest maximum temperature was recorded as 39.5°C at Chilas.

Sindh

Dry weather reported from Sindh province during the week. Weekly maximum and minimum temperatures recorded as 32.8°C & 25.7°C respectively. For the recent week, on average 167.7 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 64% and wind speed in the morning/evening recorded as 4.2/5.9 knots. Highest maximum temperature was recorded as 39.3°C at Daddu.

**Past Weather for Major Agricultural Plains
(4th September to 10th September, 2017)****Rawalpindi (Potohar region)**

Rainfall reported as 24.5 mm from Rawalpindi during the week; however, cloudiness in the morning/evening recorded as 3.7/4.4 Oktas while, average relative humidity observed as 75%. Mean day time temperature recorded as 34.0°C & for the recent week 167.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.3/1.4 knots.

Faisalabad (Central Punjab)

Rainfall reported as 5.4 mm from Faisalabad during the week; however, cloudiness in the morning/evening recorded as 1.4/4.1 Oktas while, average relative humidity observed as 67%. Mean day time temperature recorded as 36.6°C & for the recent week 178.1 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.1/0.8 knots.

Tandojam (Lower Sindh)

Dry weather reported from from Tandojam during the week; however, cloudiness in the morning/evening recorded as 1.7/0.0 Oktas while, average relative humidity observed as 71%. Mean day time temperature recorded as 35.9°C & for the recent week 127.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.4/2.9 knots.

Usta Muhammad (Eastern Balochistan)

Dry weather reported from Usta Muhammad during the week; however, cloudiness in the morning/evening recorded 0.0/0.0 Oktas while, average relative humidity observed as 76%. Mean day time temperature recorded as 37.3°C & for the recent week 191.4 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.4/2.0 knots.

Quetta (Northern Baluchistan)

Dry weather reported from Quetta during the week; however, cloudiness in the morning/evening recorded as 0.1/1.6 Oktas while, average relative humidity observed as 26%. Mean day time temperature recorded as 32.1°C & for the recent

week 127.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 2.2/3.8 knots.

**Past Weather for Sub-Regional Agricultural
Plains (4th September to 10th September, 2017)****Multan**

Dry weather reported from Multan during the week; however, cloudiness in the morning/evening recorded as 1.2/1.8 Oktas while, average relative humidity observed as 62%. Mean day time temperature recorded as 36.9°C & for the recent week 190.1 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 6.3/7.2 knots.

Lahore

Rainfall reported as 24.2 mm from Lahore during the week; however, cloudiness in the morning/evening recorded as 2.2/3.6 Oktas while, average relative humidity observed as 69%. Mean day time temperature recorded as 34.6°C & for the recent week 172.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.7/3.2 knots.

Zhob

Rainfall reported as 2.0 mm from Zhob during the week; however, cloudiness in the morning/evening recorded as 0.0/2.4 Oktas while, average relative humidity observed as 44%. Mean day time temperature recorded as 29.1°C & for the recent week 128.9 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 2.6/9.0 knots.

Murree

Rainfall reported as 23.0 mm from Murree during the week; however, cloudiness in the morning/evening recorded as 2.8/8.0 Oktas while, average relative humidity observed as 87%. Mean day time temperature recorded as 21.8°C & for the recent week 90.1 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.7/1.2 knots.

D.I. Khan

Rainfall reported as *trace* (0.03mm) from D.I.Khan during the week; however, cloudiness in the morning/evening recorded as 1.5/1.6 Oktas while, average relative humidity observed as 68%. Mean day time temperature recorded as 32.9°C & for the recent week 168.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.0/0.8 knots.

Peshawar

Rainfall reported as 3.0 mm from Peshawar during the week; however, cloudiness in the morning/evening recorded as 1.3/5.8 Oktas while, average relative humidity observed as 73%. Mean day time temperature recorded as 31.7°C & for the recent week 160.4 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.3/4.0 knots.

Kalam

Dry weather reported from Kalam during the week; however, cloudiness in the morning/evening recorded as 0.8/4.4 Oktas while, average relative humidity observed as 65%. Mean day time temperature recorded as 20.4°C & for the recent week 70.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/2.4 knots.

Gilgit

Rainfall reported as 1.9 mm from Gilgit during the week; However, cloudiness in the morning/evening recorded as 2.2/6.6 Oktas while, average relative humidity observed as 55%. Mean day time temperature recorded as 32.5°C & for the recent week 127.9 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/3.2 knots.

Skardu

Rainfall reported as 11.6 mm from Skardu during the week; However, cloudiness in the morning/evening recorded as 3.2/5.0 Oktas while, average relative humidity observed as 57%. Mean day time temperature recorded as 27.4°C & for the recent week 95.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.6 knots.

Crop Situation for Major Agricultural Plains
(Based on data from Regional Agromet Centers)

Potohar Region (Rawalpindi)

There is presently no crop grown in the fields of RAMC Rawalpindi.

Central Punjab (Faisalabad)

There is presently one crop (irrigated conditions) grown in the fields of RAMC Faisalabad.

Cotton: Very Good condition, *Boll opening* stage

Lower Sindh (Tandojam)

There is presently one crop (irrigated conditions) grown in the fields of RAMC Tandojam.

Cotton (HH-906): Good condition, *Boll Opening* stage.

Northern Baluchistan (Quetta)

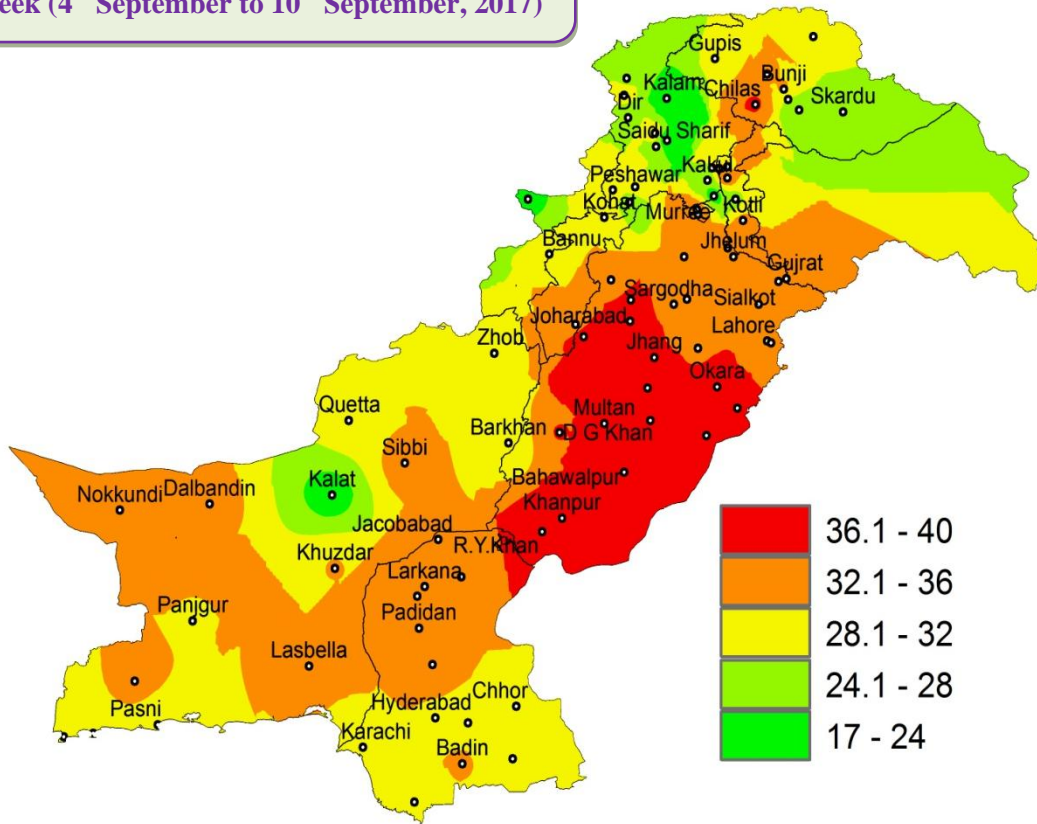
There is presently no crop grown in the fields of RAMC Quetta.

Eastern Baluchistan (Usta Muhammad)

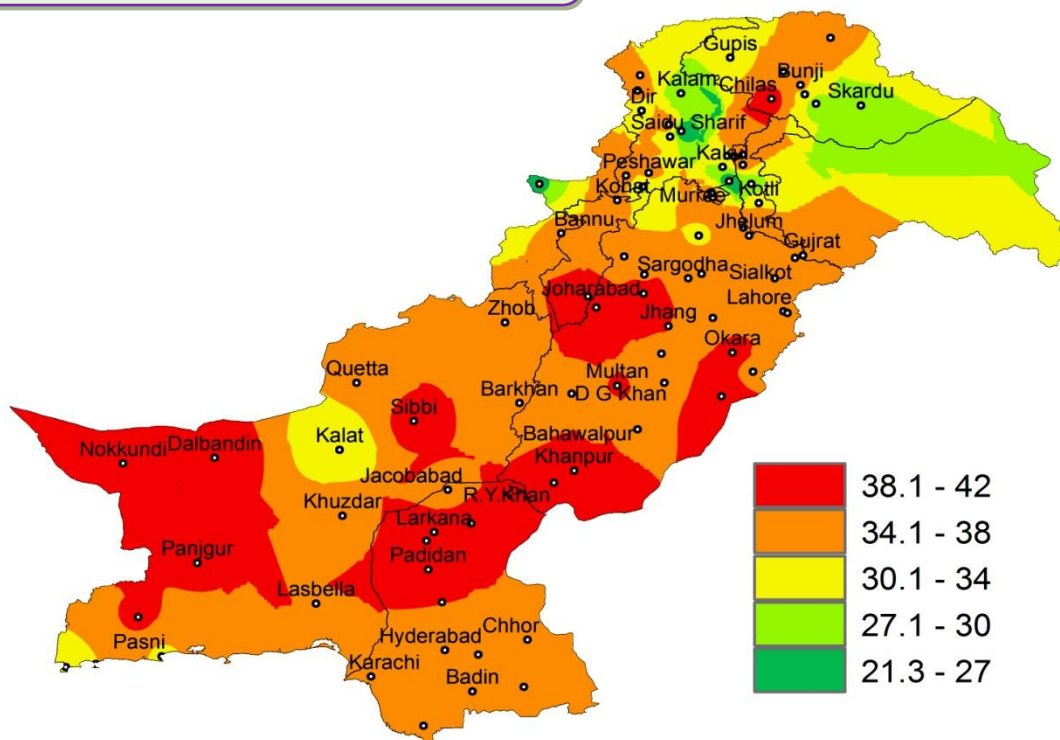
There is presently one crop (irrigated conditions) grown in the fields of RAMC Usta Muhammad.

Rice: Good condition, *Tillering* stage.

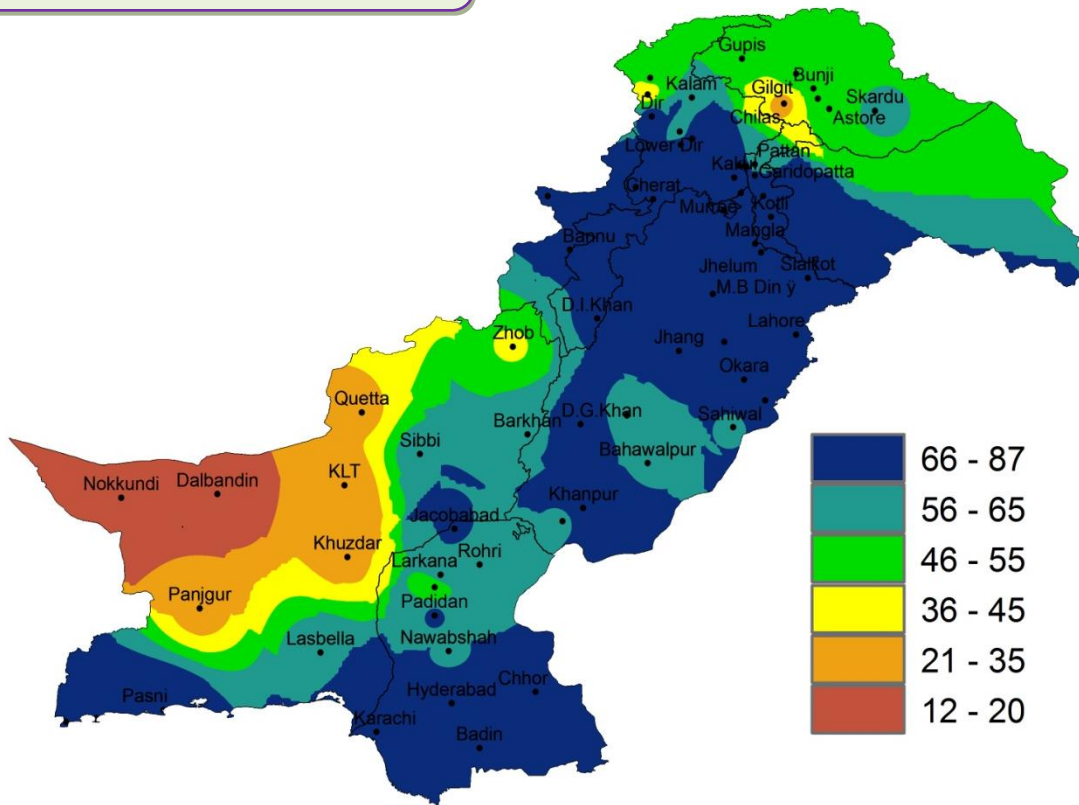
Mean Maximum Temperature (°C) during the Previous week (4th September to 10th September, 2017)



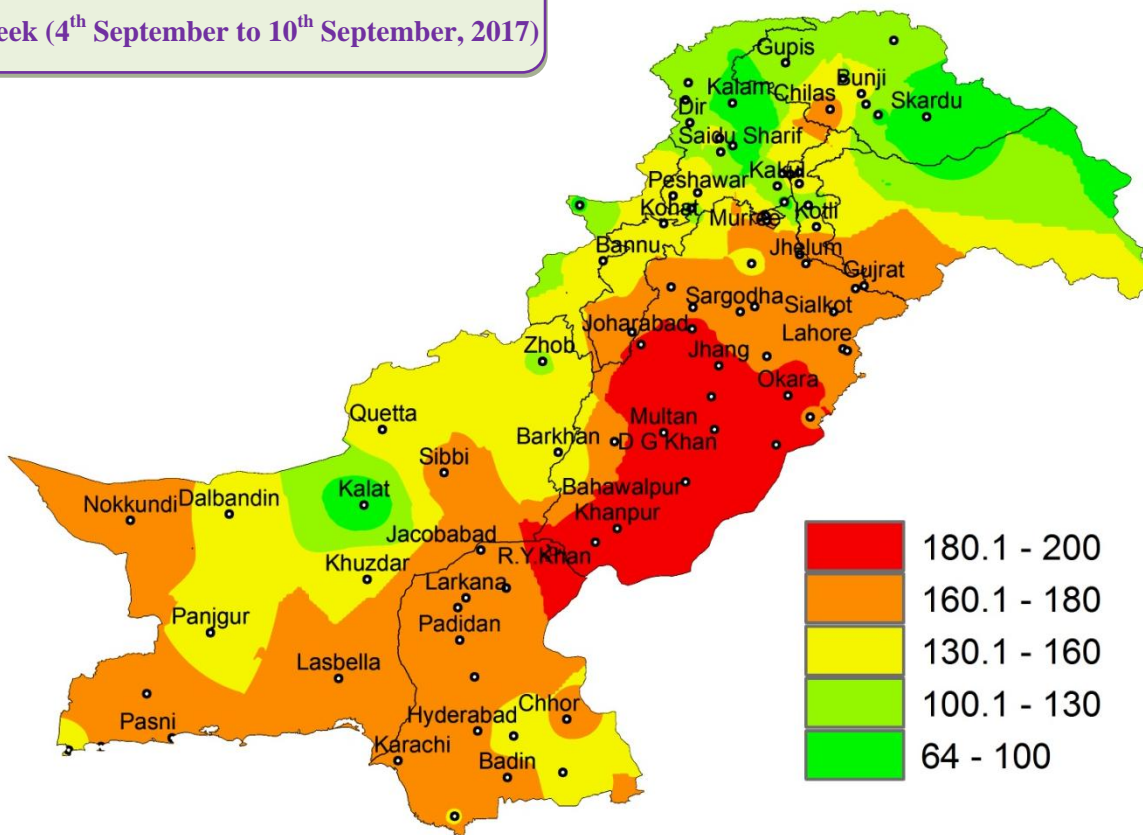
Highest maximum Temperature (°C) during the Previous week (4th September to 10th September, 2017)



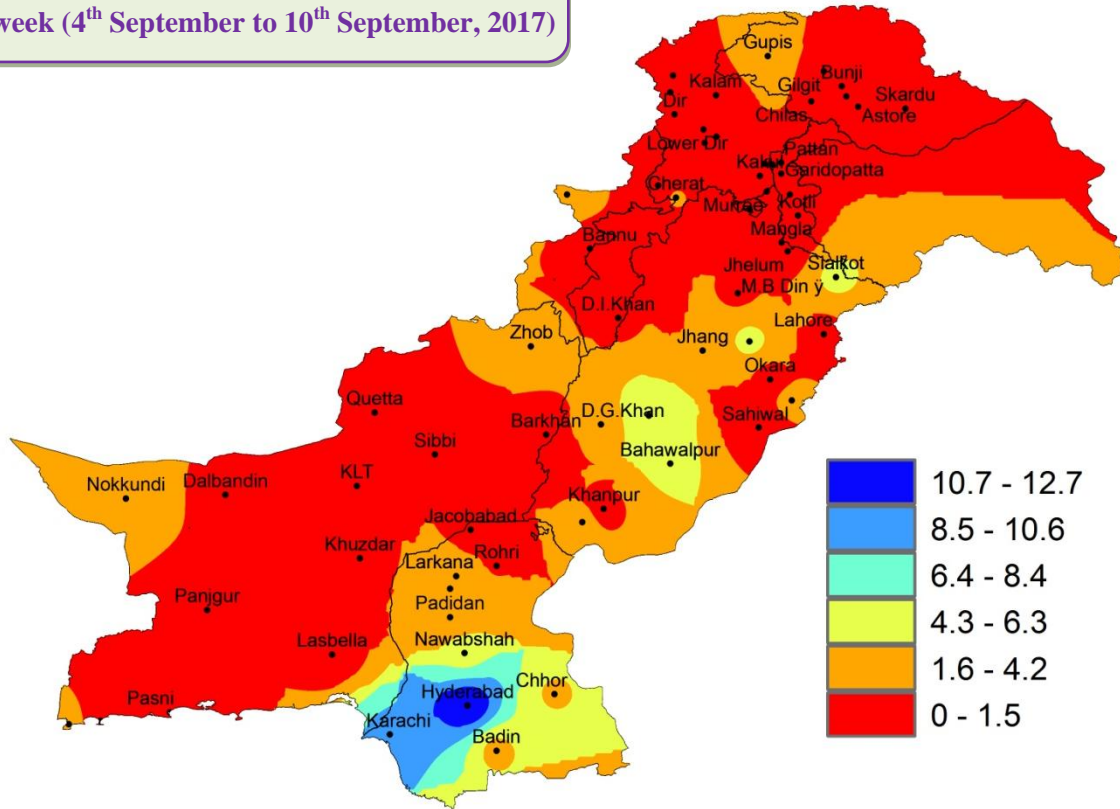
Mean Relative Humidity (%) during the previous week (4th September to 10th September, 2017)



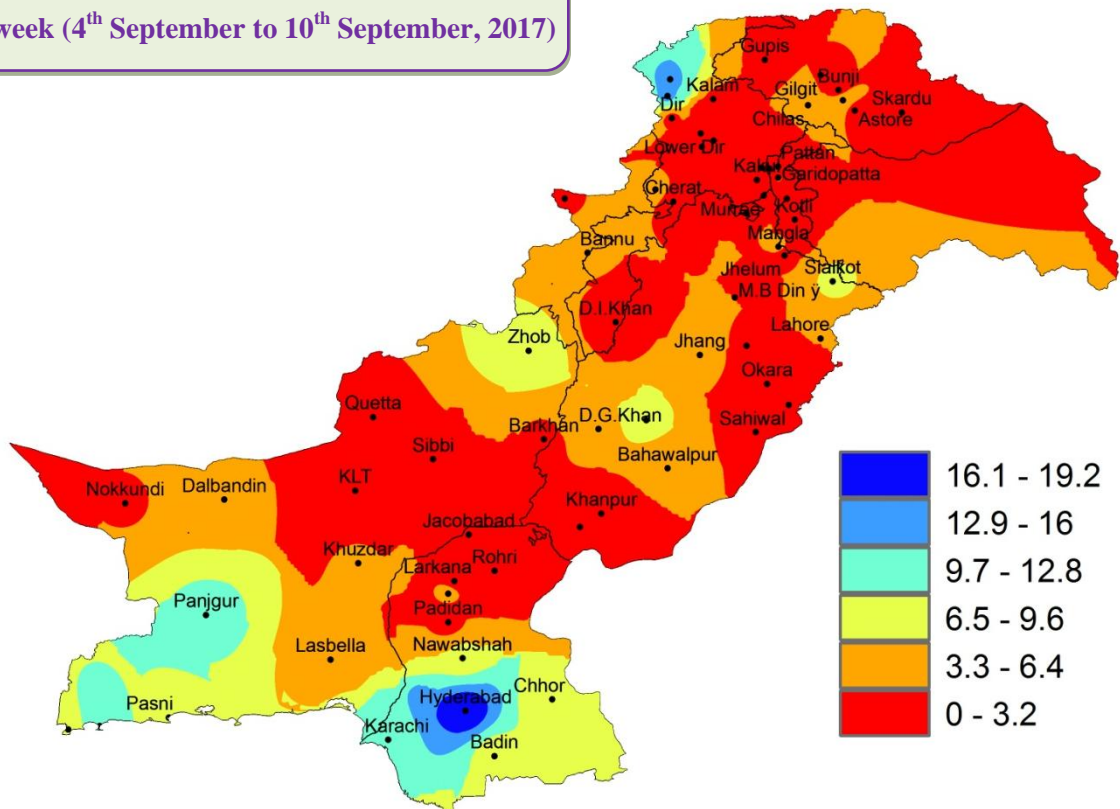
Total Growing Degree Days accumulated during the previous week (4th September to 10th September, 2017)



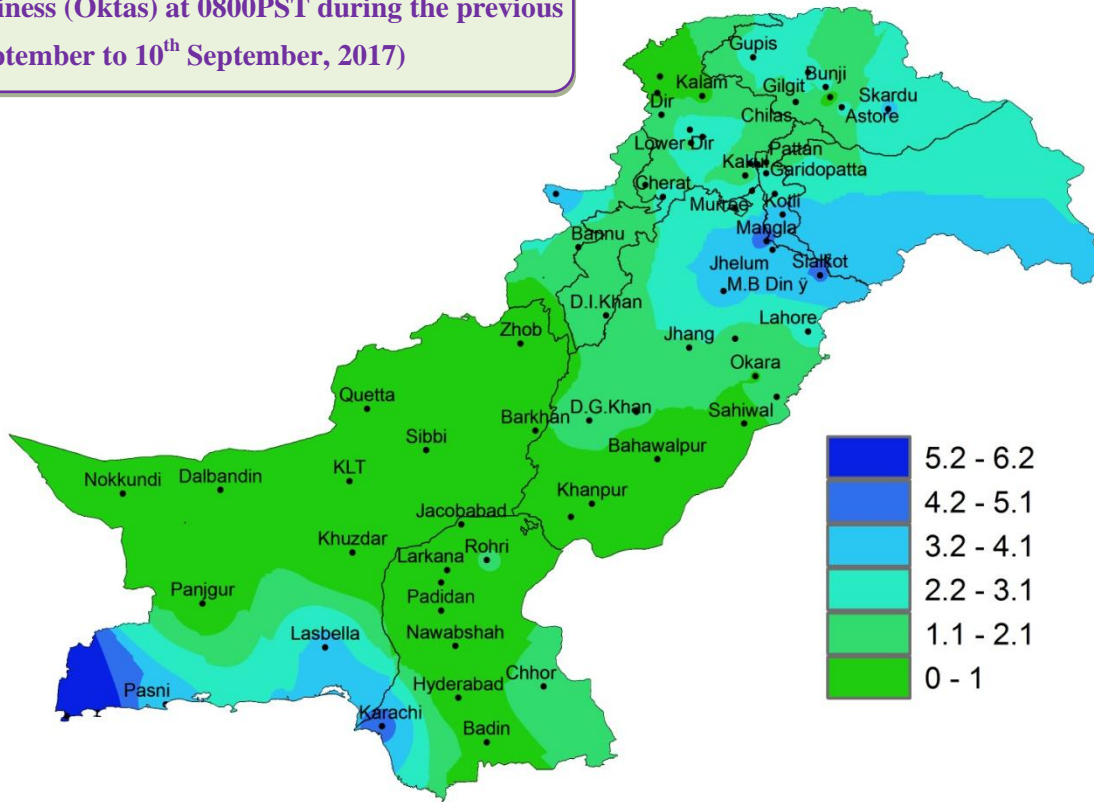
Mean Wind Speed (Knots) at 0800PST during the previous week (4th September to 10th September, 2017)



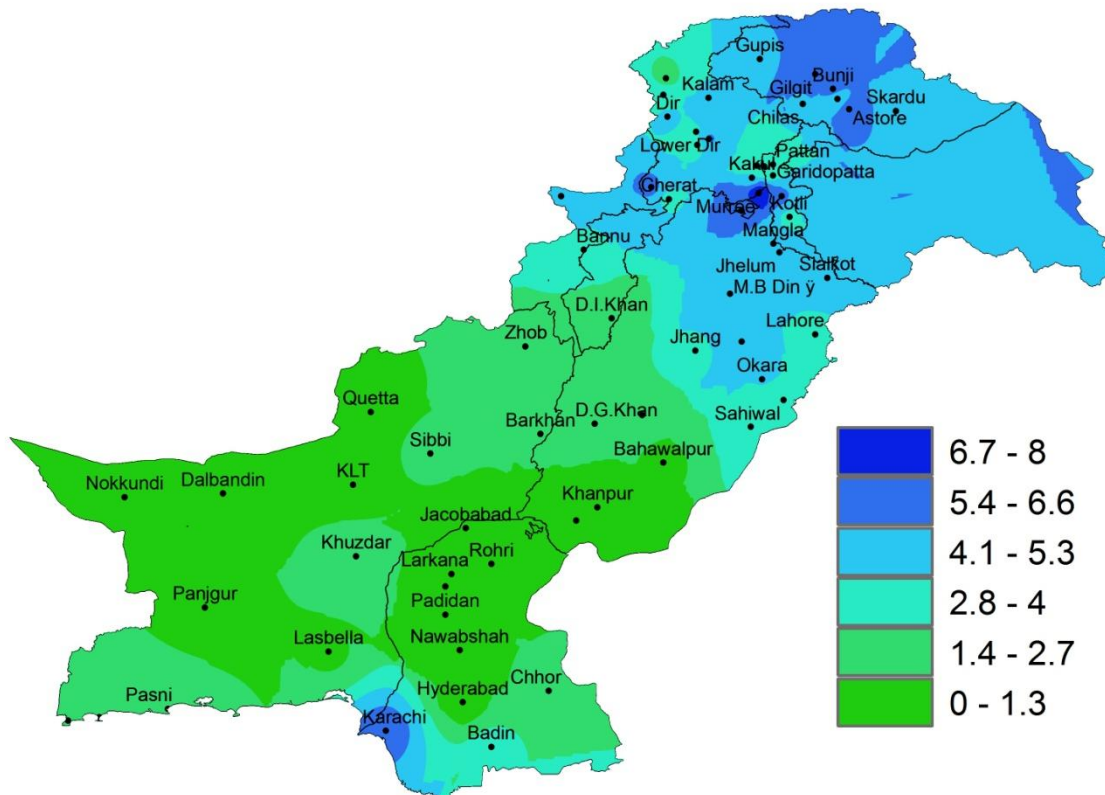
Mean Wind Speed (Knots) at 1700PST during the previous week (4th September to 10th September, 2017)



Mean Cloudiness (Oktas) at 0800PST during the previous week (4th September to 10th September, 2017)



Mean Cloudiness (Oktas) at 1700PST during the previous week (4th September to 10th September, 2017)



Weekly Weather Advisory for Farmers
(4th September to 10th September, 2017)

Seasonal low lies over northwest Balochistan. Weak moist currents are penetrating upper parts of the country. Another fresh **westerly** wave is likely to enter upper parts of the country on Sunday.

MONDAY (11-09-2017)

Mainly hot and humid weather is expected in most parts of the country. However, rain-thunderstorm is expected at isolated places in Malakand, Hazara, Peshawar, Kohat, Rawalpindi, Gujranwala, Sargodha and Lahore divisions, Islamabad, upper FATA, Kashmir and Gilgit-Baltistan.

TUESDAY (12-09-2017)

Mainly hot and humid weather is expected in most parts of the country. However, rain-thunderstorm is expected at isolated places in Malakand, Hazara, and Kashmir.

WEDNESDAY (13-09-2017)

Mainly hot and humid weather is expected in most parts of the country. However, rain-thunderstorm is expected at scattered places in Bannu, Kohat, D.I. Khan, Gujranwala, Sargodha, Malakand divisions, FATA, while at isolated places in Hazara, Peshawar, Rawalpindi, Faisalabad, Lahore divisions, Islamabad, Kashmir and Gilgit-Baltistan

THURSDAY (14-09-2017)

Mainly hot and humid weather is expected in most parts of the country. However, rain-thunderstorm is expected at scattered places in Malakand, Kohat, Bannu, D.I. Khan, Lahore, Gujranwala, Sargodha, Faisalabad, Sahiwal, Multan, Bahawalpur, D.G. Khan, divisions, FATA, while at isolated places in

Rawalpindi, Hazara, Peshawar, Mardan divisions, Islamabad, Kashmir and Gilgit-Baltistan.

FRIDAY (15-09-2017)

Mainly hot and humid weather is expected in most parts of the country. However, rain-thunderstorm is expected at scattered places in D.I. Khan, D.G. Khan divisions, while at isolated places in Malakand division, Kashmir and Gilgit-Baltistan.

SATURDAY (16-09-2017)

Mainly hot and humid weather is expected in most parts of the country. However, rain-thunderstorm is expected at isolated places in upper KP, upper Punjab, Islamabad, FATA, Kashmir and Gilgit-Baltistan.

SUNDAY (17-09-2017)

Mainly hot and humid weather is expected in most parts of the country

ADVISES FOR FARMERS

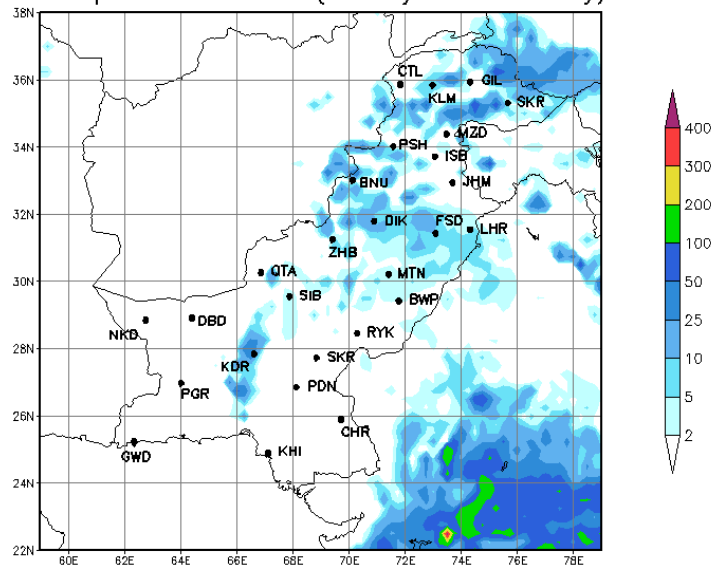
During the last week, light to moderate rainfall occurred in most of the agricultural plains of the country. In the coming days, light to moderate rainfall is expected in upper half of the country. Keeping in view the expected weather conditions following advises are suggested for farming community.

- Pest/viral attacks and more weeds growth are expected in standing crops during this season. Farmers are therefore advised to do regular pest scouting and take in time precautionary measures accordingly.
- Farmers of irrigated areas may irrigate the standing crops as per requirement in accordance with the expected weather and crop conditions.

Weather Outlook from 11th September to 17th September, 2017

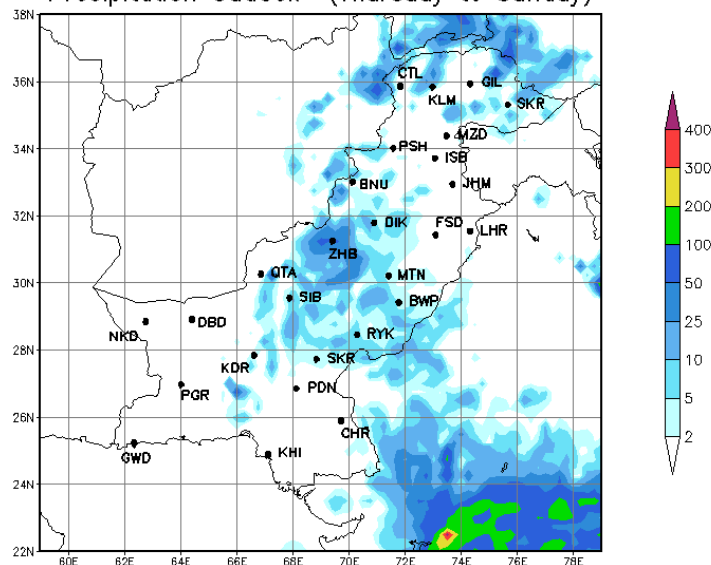
The outlook for the period 11th September to 13th September, 2017 shows that light to moderate rainfall is expected at scattered places in Gilgit-Baltistan, Kashmir, KP, central Punjab while at isolated places in Baluchistan and FATA.

Precipitation Forecast (Monday to Wednesday)



The outlook for the period 14th September to 17th September, 2017 shows that light to moderate rainfall is expected at isolated places in Gilgit-Baltistan, KP, upper Baluchistan, lower Punjab.

Precipitation Outlook (Thursday to Sunday)



National Weather Data of Selected Cities (4th August to 10th September, 2017)

Stations	Maximum/Nighttime Temperature (°C)		Growing Degree Days	Relative Humidity (%)	Rainfall (mm)	Cloudiness (Oktas) 0800 PST	Cloudiness (Oktas) 1700 PST	Wind Speed (Knots) 0800 PST	Wind Speed (Knots) 1700 PST
	Mean	highest							
Astore	24.9	27.5	91.8	48	0.01	2.3	6.2	1.3	2.8
Badin	32.3	34.5	170.0	74	0.00	0.8	3.2	3.6	7.2
Bahawalnagar	37.8	39.0	189.3	64	42.00	0.7	3.8	0.0	0.8
Bahawalpur	36.9	37.8	188.4	64	0.00	0.0	1.0	4.7	4.8
Balakot	27.1	32.5	122.5	71	37.00	2.2	3.2	0.3	0.8
Bannu	29.8	35.5	140.0	68	35.00	1.5	3.6	0.3	4.0
Barkhan	28.3	34.0	133.9	62	8.00	1.0	1.8	0.0	2.4
Bunji	32.9	35.6	144.9	47	0.03	2.7	6.2	0.0	2.4
Cherat	24.6	29.0	115.8	70	11.00	2.3	3.6	1.7	2.4
Chhor	31.4	35.8	162.6	73	0.00	1.5	2.2	4.0	6.4
Chilas	36.5	39.5	173.3	31	0.62	1.8	5.0	1.3	4.0
Chitral	27.7	34.2	121.0	46	2.00	0.8	2.2	0.0	13.6
D.G.Khan	36.1	36.7	180.1	71	3.01	1.3	2.2	2.7	6.0
D.I.Khan	32.9	38.0	168.3	68	0.03	1.5	1.6	1.0	0.8
Dalbandin	33.5	41.5	153.5	12	0.00	0.0	0.0	1.0	4.5
Dir	25.5	32.0	102.8	74	68.00	1.8	4.2	0.0	2.0
Drosh	29.0	35.4	131.8	38	4.00	0.5	3.4	0.0	14.0
Faisalabad	36.6	38.5	178.1	67	5.40	1.4	4.1	1.1	0.8
Garidopatta	34.5	35.2	158.4	69	47.80	2.5	4.0	0.0	3.6
Gawader	30.7	34.0	160.4	76	0.00	5.5	2.0	0.0	11.2
Gilgit	32.5	35.5	127.9	55	1.91	2.2	6.6	0.0	3.2
Gupis	28.5	31.0	110.3	48	3.00	2.2	5.0	3.7	2.4

Hyderabad	31.8	36.5	163.4	70	0.00	0.5	0.6	12.7	19.2
Islamabad	33.6	35.0	162.0	75	0.00	2.7	5.4	0.0	3.2
Jacobabad	33.3	37.0	176.6	67	0.00	0.0	0.0	0.3	2.0
Jhang	36.6	38.0	182.3	69	0.00	2.0	3.8	1.7	4.4
Jhelum	34.9	36.5	175.6	79	7.10	3.0	4.4	0.0	2.4
Jiwani	29.5	32.5	157.9	74	0.00	6.2	2.4	2.7	8.4
Kakul	25.3	29.5	116.5	76	4.00	1.3	4.2	0.0	0.4
Kalam	20.4	27.0	70.3	65	0.00	0.8	4.4	0.0	2.4
Kalat	22.1	30.0	78.8	24	0.00	0.0	0.0	0.0	0.0
Karachi	30.7	34.0	166.0	72	0.00	4.3	6.2	9.0	11.2
Khanpur	37.9	38.5	188.9	72	0.00	0.0	0.0	1.0	0.0
Khuzdar	32.2	37.5	158.9	30	0.00	0.0	2.6	0.0	3.6
Kotli	33.1	34.2	161.4	72	6.00	3.5	3.6	1.3	2.8
Lahore	34.6	36.0	172.0	69	24.21	2.2	3.6	0.7	3.2
Larkana	34.2	39.0	179.4	64	0.00	0.0	0.6	3.0	2.8
Lasbella	33.0	38.0	173.4	65	0.00	3.2	1.0	0.0	4.0
Lower Dir	31.4	38.0	148.9	61	1.00	2.3	3.8	0.3	2.0
M.B Din	34.8	36.5	170.5	75	9.02	3.5	4.6	1.0	3.2
Malam Jabba	16.8	21.0	62.5	70	20.00	3.0	5.6	0.0	0.0
Mangla	33.8	35.8	168.7	78	30.30	4.8	4.8	1.3	3.6
Mir Khani	27.4	33.0	123.0	50	4.60	0.0	4.0	0.3	4.4
Moinjodaro	33.3	38.0	173.1	44	0.00	0.0	0.6	3.2	3.6
Multan(PBO)	36.9	38.1	190.1	62	0.00	1.2	1.8	6.3	7.2
Murree	21.8	23.5	90.1	87	23.02	2.8	8.0	0.7	1.2
Muzaffarabad	33.9	35.0	154.7	67	23.50	2.2	2.8	0.0	0.4
Nawabshah	33.4	38.0	172.5	64	0.00	0.0	0.6	5.7	8.0

Nokkundi	35.5	41.0	179.3	12	0.00	0.0	0.0	3.0	2.8
Okara	37.3	38.5	186.2	68	2.81	1.0	4.0	0.4	0.8
Padidan	33.5	39.0	171.9	67	0.00	0.0	1.2	2.0	2.0
Panjgur	31.9	38.5	152.8	28	0.00	0.5	0.4	0.0	11.2
Parachinar	22.3	26.5	98.7	71	9.00	3.8	4.8	3.0	3.0
Pasni	30.3	33.5	160.1	82	0.00	3.2	2.4	0.0	8.2
Pattan	30.6	37.5	145.8	55	2.00	1.2	3.2	0.7	1.2
Peshawar	31.7	36.4	160.4	73	3.01	1.3	5.8	0.3	4.0
Quetta	32.1	33.0	127.3	26	0.00	0.1	1.6	2.2	3.8
Rahim Yar Khan	38.6	40.2	191.5	63	0.00	0.0	0.0	2.0	0.8
Rawalakot	26.6	27.0	106.6	77	25.80	2.8	5.6	0.0	0.8
Rawalpindi	34.0	34.8	167.3	75	24.50	3.7	4.4	0.3	1.4
Rohri	34.5	39.0	***	58	0.00	1.2	0.0	1.3	0.8
Sahiwal	36.5	37.5	178.5	72	1.00	1.5	3.8	2.3	2.8
Saidu Sharif	27.9	33.5	126.7	67	2.51	1.8	3.4	0.0	0.8
Sialkot	32.8	34.4	164.7	74	9.80	4.2	4.8	5.0	7.2
Sibbi	33.9	40.0	170.8	65	0.00	0.7	2.0	0.7	2.4
Skardu	27.4	29.7	95.8	57	11.60	3.2	5.0	0.0	0.6
Tandojam	35.9	36.5	172.8	71	0.00	1.7	0.0	1.4	2.9
Usta.M	37.3	37.7	191.4	76	0.00	0.0	0.0	1.4	2.0
Zhob	29.1	35.5	128.9	44	2.00	0.0	2.4	2.6	9.0

*** Shows that data was not available.

Findings of AgMIP Pakistan, University of Agriculture, Faisalabad

1. 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).
2. There would be significant variability in rainfall patterns (about 25% increase in summer & 12% decrease in winter during 2040-2069).
3. Climate Change will affect the crop yields negatively (about 17% for rice and 14 % for wheat).
4. If there will be no adaptation to Climate Change, majority of farmers would be the economic losers.
5. 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)