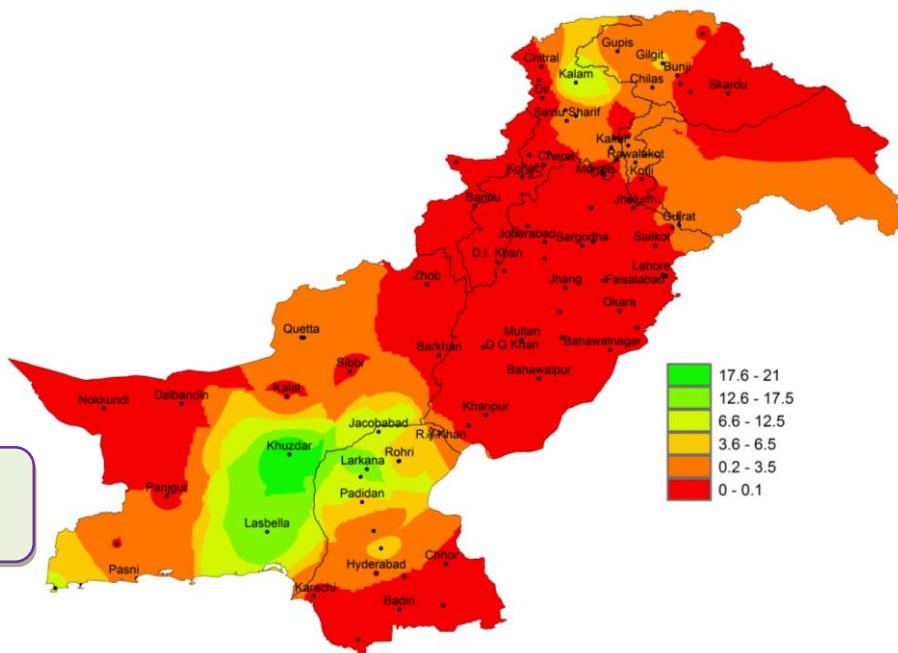


Weekly Weather and Crop Bulletin for Pakistan

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Rainfall Distribution (mm) during the previous
Week (18th to 24th December, 2017)

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Highlights of Past Weather (18th to 24th December, 2017)

Above normal night time temperatures were observed in most parts of the country however mix trend of night time temperatures recorded in Baluchistan and KP during the previous week.

Province wise distribution of rainfall reported as follows:

- Light rainfall (including traces) reported from scattered places of Gilgit-Baltistan, Kashmir, Punjab and Baluchistan while at a few places from Sindh during previous week.
- Light rainfall observed at isolated places in Khyber Pakhtunkhwa during the previous week.

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 (18th to 24th
December, 2017)**

Punjab

Light rainfall (traces) reported from Punjab during the week. Weekly maximum and minimum temperatures recorded as 23.9°C & 7.1°C respectively. For the recent week on average 73.4 growing degree days were accumulated by the end of the last week. Average relative humidity recorded as 62% and wind speed in the morning/evening recorded as 0.9/1.6 knots. During the previous week the highest amount of rainfall was recorded as 0.4 mm at Gujrat & lowest minimum temperature was recorded as 2.3°C at Islamabad.

Balochistan

Light rainfall reported from Balochistan during the week. Weekly maximum and minimum temperatures recorded as 22.5°C & 6.0°C respectively. For the recent week on average 65.3 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 49% and wind speed in the morning/evening recorded as 1.5/3.1 knots. During the previous week the highest amount of rainfall was recorded at 22.0 mm at Ormara & lowest minimum temperature was recorded as -7.0°C at Kalat.

Khyber Pakhtunkhwa

Light rainfall reported from Khyber Pakhtunkhwa during the week. Weekly maximum and minimum temperatures recorded as 17.5°C & 3.1°C respectively. For the recent week on average 44.3 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 60% and wind speed in the morning/evening recorded as 1.3/2.0 knots. During the previous week the highest amount of rainfall was recorded as 12.0 mm at Kalam & lowest minimum temperature was recorded as -6.5°C at Malamjabba.

Gilgit-Baltistan and Azad Jammu & Kashmir

Light rainfall reported from Kashmir and Gilgit-Baltistan during the week. Weekly maximum and minimum temperatures recorded as 12.4°C & 1.1°C respectively. For the recent week on average 35.3 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 61% and wind speed in the morning/evening recorded as 1.4/1.4 knots. During the previous week the highest amount of rainfall was recorded as 8.5 mm at Bagrote & lowest minimum temperature was recorded as -7.0°C at Astore.

Sindh

Light rainfall reported from Sindh during the week. Weekly maximum and minimum temperatures recorded as 25.8°C & 9.8°C respectively. For the recent week, on average 91 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 60% and wind speed in the morning/evening recorded as 1.7/3.2 knots. During the previous week the highest amount of rainfall was recorded as 16 mm at Larkana & lowest minimum temperature was recorded as 2.0°C at Moinjodaro.

Past Weather for Major Agricultural Plains
(18th to 24th December, 2017)

Rawalpindi (Potohar region)

Dry weather reported from Rawalpindi during the week; however, cloudiness in the morning/evening recorded as 2.7/2.1 Oktas while average relative humidity observed as 76%. Mean night time temperature recorded as 4.7°C & for the recent week 60.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.6 knots.

Faisalabad (Central Punjab)

Dry weather reported from Faisalabad during the week; however, cloudiness in the morning/evening recorded as 1.1/2.9 Oktas while average relative humidity observed as 64.5%. Mean night time temperature recorded as 6.0°C & for the recent week 50.4 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.2/0.5 knots.

Tandojam (Lower Sindh)

Dry weather reported from Tandojam during the week; however, cloudiness in the morning/evening recorded as 1.1/0.9 Oktas while average relative humidity observed as 62%. Mean night time temperature recorded as 8.7°C & for the recent week 86.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.5/3.2 knots.

Usta Muhammad (Eastern Balochistan)

Rainfall reported as 5.0 mm from Usta Muhammad during the week; however, cloudiness in the morning/evening recorded 2.3/2.1 Oktas while average relative humidity observed as 90%. Mean night time temperature recorded as 9.1°C & for the recent week 77.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.3 knots.

Quetta (Northern Baluchistan)

Rainfall reported as *trace* from Quetta during the week; however, cloudiness in the morning/evening recorded as 2.1/2.0 Oktas while average relative humidity observed as 37%. Mean night time temperature recorded as 2.0°C & for the recent

week 16.2 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.7/3.3 knots.

Past Weather for Sub-Regional Agricultural Plains (18th to 24th December, 2017)

Multan

Rainfall reported as *trace* (0.01 mm) from Multan during the week; however, cloudiness in the morning/evening recorded as 2.0/2.3 Oktas while average relative humidity observed as 69%. Mean night time temperature recorded as 8.4°C & for the recent week 76.6 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.6 knots.

Lahore

Dry weather reported from Lahore during the week; however, cloudiness in the morning/evening recorded as 1.0/2.9 Oktas while average relative humidity observed as 57%. Mean night time temperature recorded as 9.3°C & for the recent week 83 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/1.1 knots.

Zhob

Dry weather reported from Zhob during the week; however, cloudiness in the morning/evening recorded as 0.7/1.1 Oktas while average relative humidity observed as 38%. Mean night time temperature recorded as 3.1°C & for the recent week 37.5 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.7/5.6 knots.

Murree

Rainfall reported as *trace* (0.01 mm) reported from Murree during the week; however, cloudiness in the morning/evening recorded as 2.7/2.4 Oktas while average relative humidity observed as 43%. Mean night time temperature recorded as 5.0°C & for the recent week 31.1 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 3.0/1.4 knots.

D.I. Khan

Dry weather reported from D.I. Khan during the week; however, cloudiness in the morning/evening recorded as 0.5/1.1 Oktas while average relative

humidity observed as 58%. Mean night time temperature recorded as 7.1°C & for the recent week 80.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.7/0.6 knots.

Peshawar

Dry weather reported from Peshawar during the week; however, cloudiness in the morning/evening recorded as 3.7/1.6 Oktas while average relative humidity observed as 66%. Mean night time temperature recorded as 5.7°C & for the recent week 68.7 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.3/0.9 knots.

Kalam

Rainfall reported as 12 mm from Kalam during the week; however, cloudiness in the morning/evening recorded as 6.0/5.4 Oktas while average relative humidity observed as 82%. Mean night time temperature recorded as -2.9°C. Wind speed recorded in the morning/evening as 0.0/0.0 knots.

Gilgit

Rainfall reported as 4.4mm from Gilgit during the week; However, cloudiness in the morning/evening recorded as 6.7/6.1 Oktas while average relative humidity observed as 69%. Mean night time temperature recorded as -0.3°C & for the recent week 2.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/1.4 knots.

Skardu

Dry weather reported from Skardu during the week; However, cloudiness in the morning/evening recorded as 7.2/6.1 Oktas while average relative humidity observed as 73%. Mean night time temperature recorded as -3.2°C. Wind speed recorded in the morning/evening as 0.0/0.0 knots.

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

Potohar Region (Rawalpindi)

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

Central Punjab (Faisalabad)

There is presently one crop in the fields of RAMC Faisalabad.

Wheat (Galaxy); 3rd leaf Stage (Irrigated Conditions)

Lower Sindh (Tandojam)

There is presently one crop in the fields of RAMC Tandojam.

Wheat (Sindhu); Tillering stage

Northern Baluchistan (Quetta)

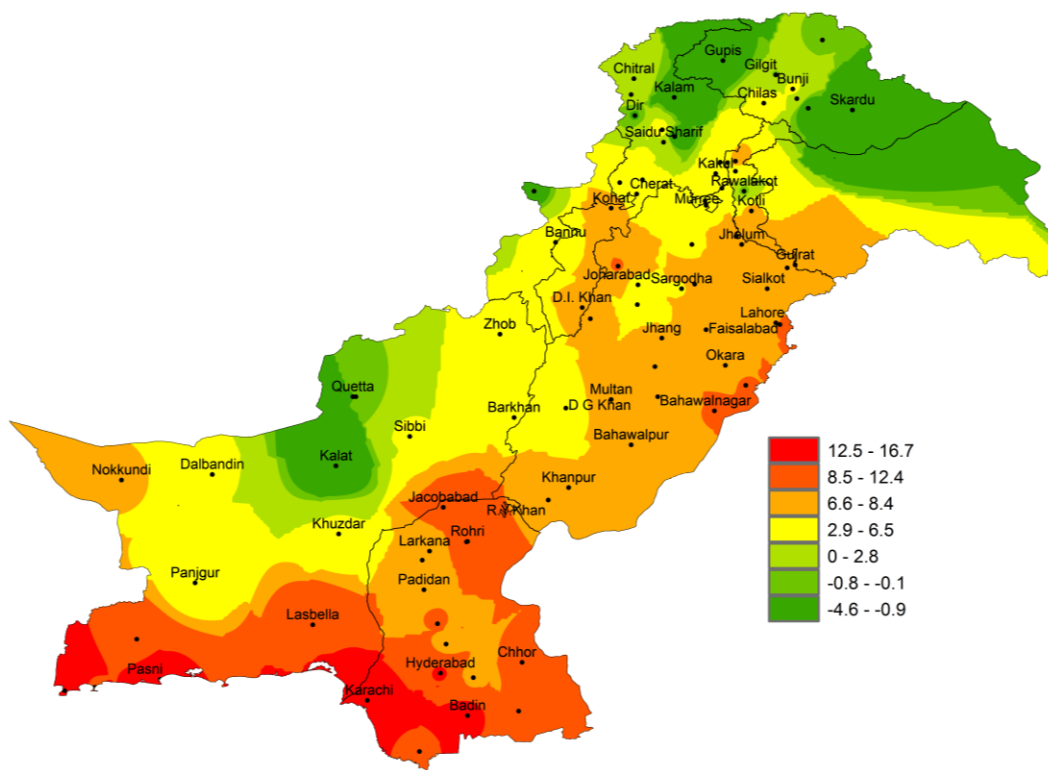
There is presently no crop grown in the fields of RAMC Quetta.

Eastern Baluchistan (Usta Muhammad)

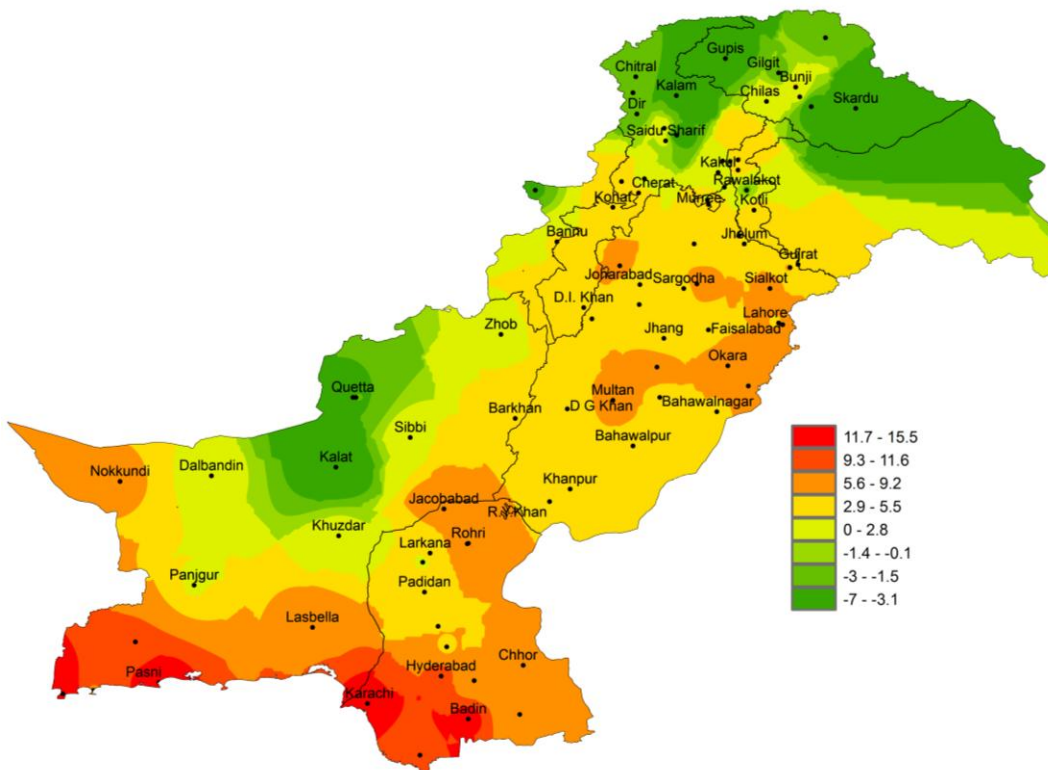
There is presently one crop grown in the fields of RAMC Usta Muhammad.

Wheat (Galaxy); 3rd leaf stage

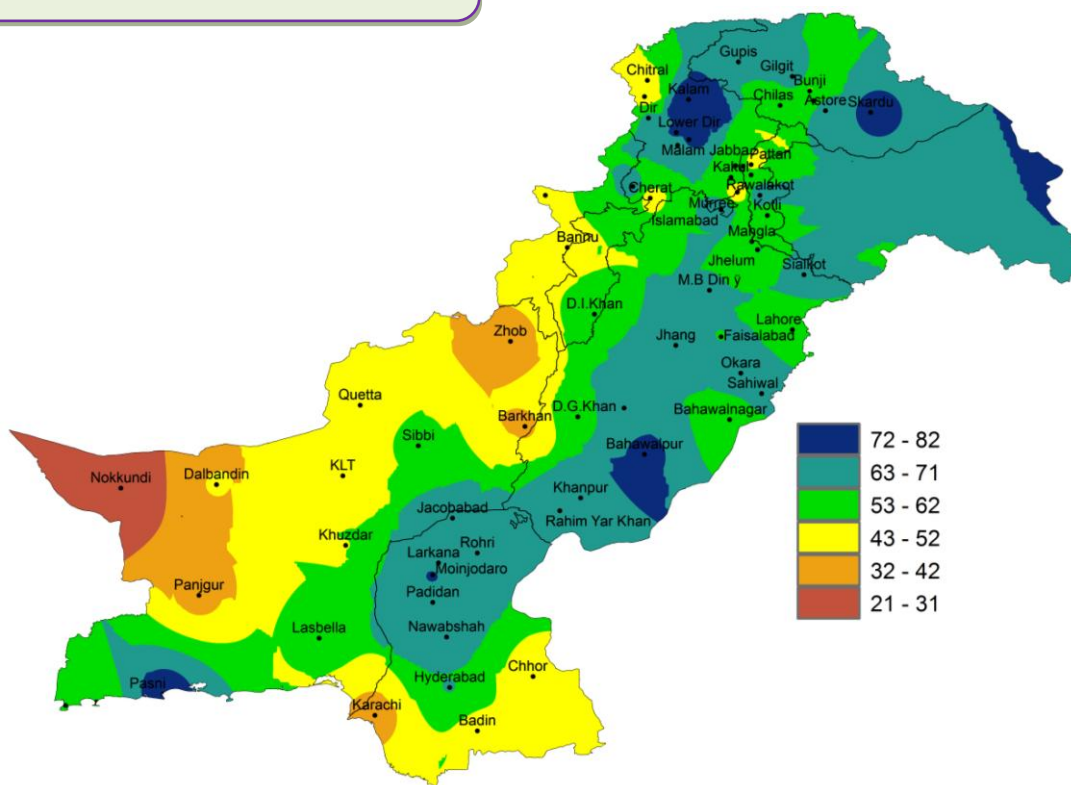
Mean Minimum Temperature (°C) during the Previous week (18th to 24th December, 2017)



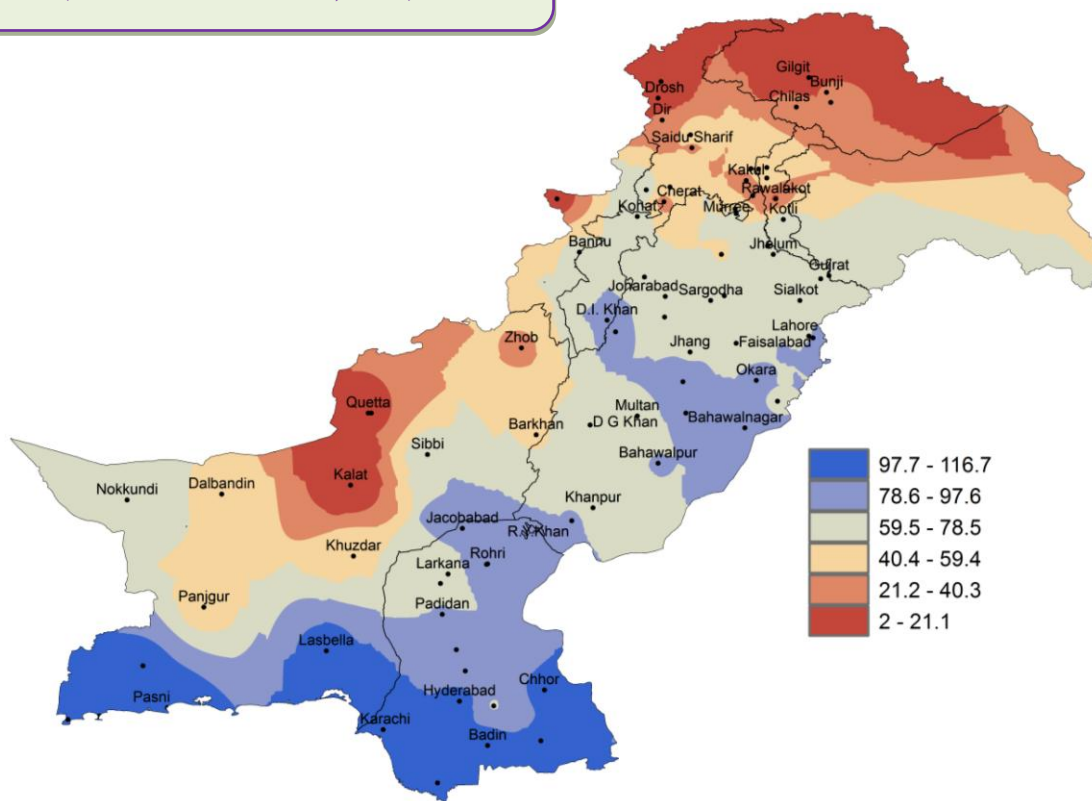
Lowest Minimum Temperature (°C) during the Previous week (18th to 24th December, 2017)



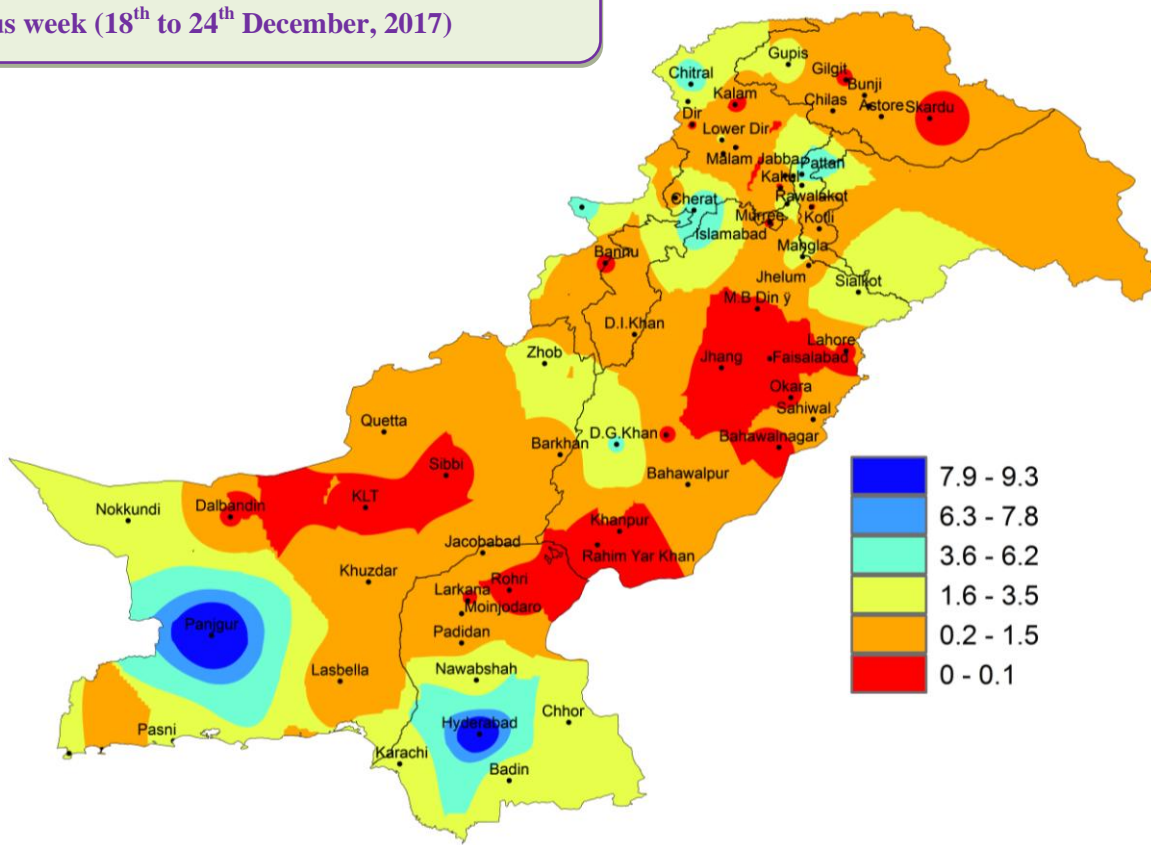
Mean Relative Humidity (%) during the previous week (18th to 24th December, 2017)



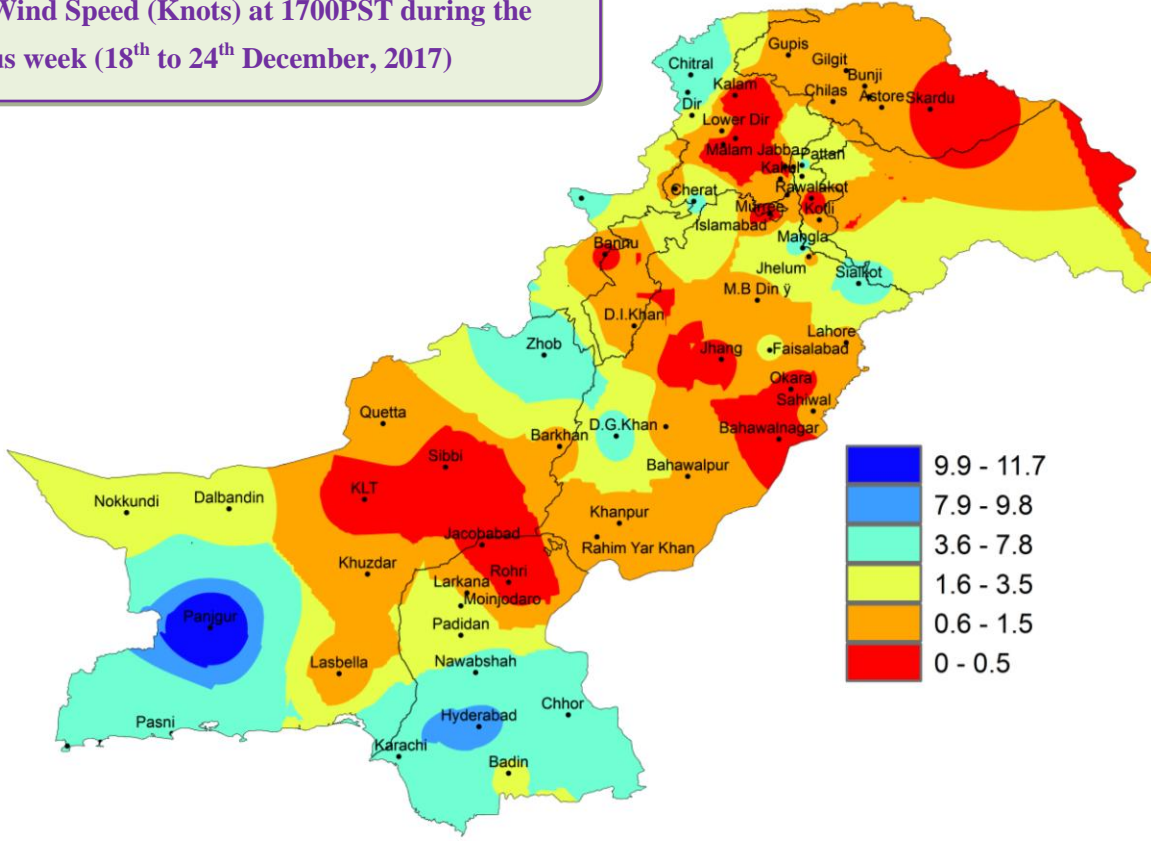
Total Growing Degree Days accumulated during the previous week (18th to 24th December, 2017)



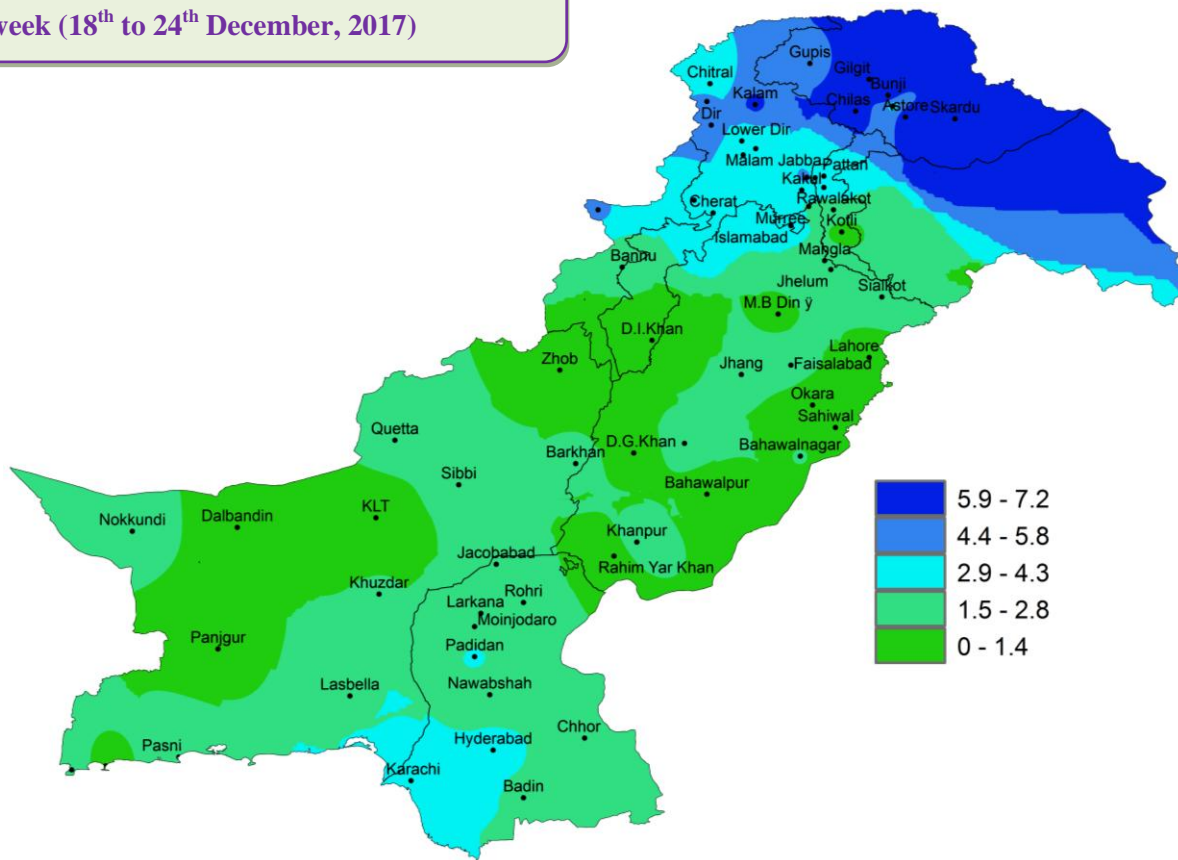
Mean Wind Speed (Knots) at 0800PST during the previous week (18th to 24th December, 2017)



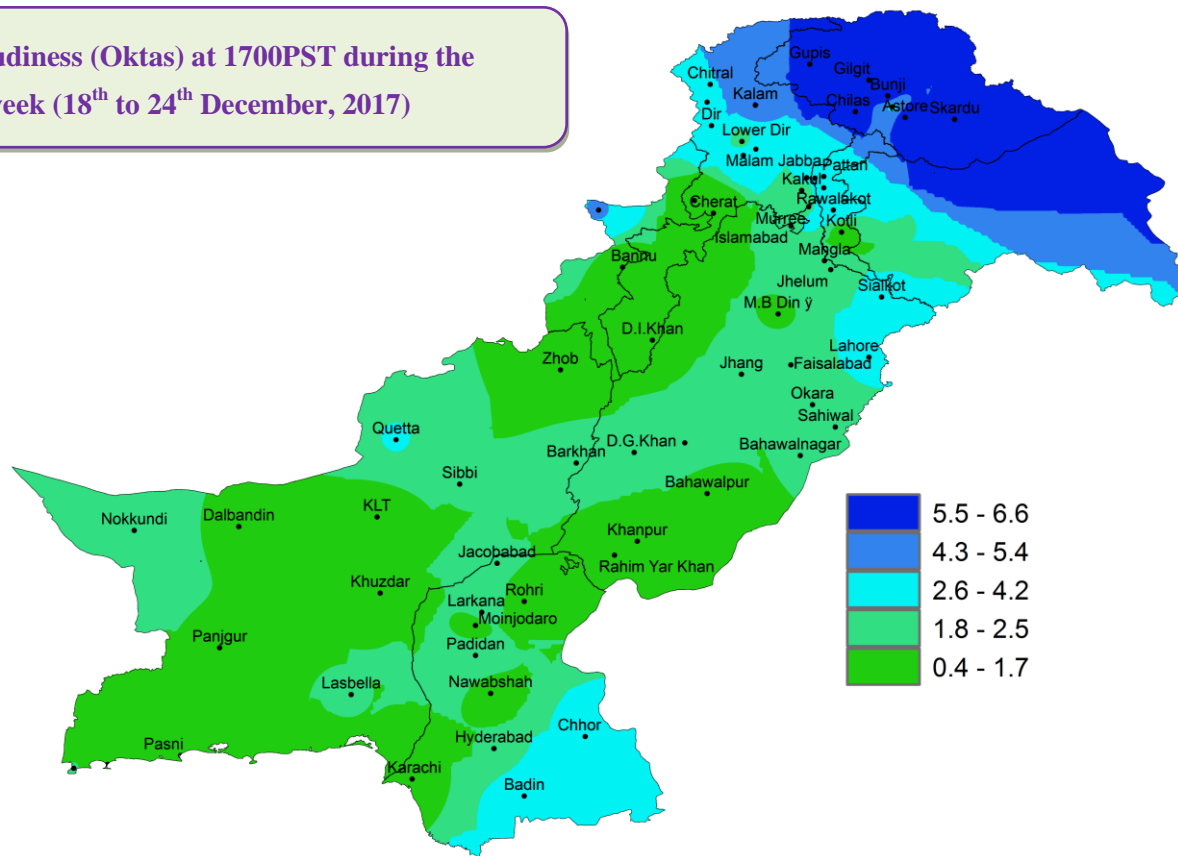
Mean Wind Speed (Knots) at 1700PST during the previous week (18th to 24th December, 2017)



Mean Cloudiness (Oktas) at 0800PST during the previous week (18th to 24th December, 2017)



Mean Cloudiness (Oktas) at 1700PST during the previous week (18th to 24th December, 2017)



Weekly Weather Advisory for Farmers
(25th to 31th December, 2017)

Continental air is likely to prevail over most parts of the country.

MONDAY
25-12-2017

Mainly cold and dry weather is expected in most parts of the country. However, light rain with light snowfall over the hills is expected at a few places in Gilgit-Baltistan. Dense foggy conditions are likely to prevail over few plain areas of Punjab and upper Sindh during night and morning hours.

TUESDAY
26-12-2017

Mainly cold and dry weather is expected in most parts of the country. However, light rain with light snowfall over the hills is expected at isolated places in Malakand division and Gilgit-Baltistan. Dense foggy conditions are likely to prevail over few plain areas of Punjab and upper Sindh during night and morning hours.

WEDNESDAY
27-12-2017

Mainly cold and dry weather is expected in most parts of the country. However, light rain with light snowfall over the hills is expected at isolated places in Malakand division and Gilgit-Baltistan. Dense foggy conditions are likely to prevail over few plain areas of Punjab and upper Sindh during night and morning hours.

THURSDAY
28-12-2017

Mainly cold and dry weather is expected in most parts of the country. Foggy conditions are likely to prevail over few plain areas of Punjab and upper Sindh during night and morning hours.

FRIDAY
29-12-2017

Mainly cold and dry weather is expected in most parts of the country. Foggy conditions are likely to prevail over few plain areas of Punjab and upper Sindh during night and morning hours.

SATURDAY
30-12-2017

Mainly cold and dry weather is expected in most parts of the country. Foggy conditions are likely to prevail over few plain areas of Punjab and upper Sindh during night and morning hours.

SUNDAY
31-12-2017

Mainly cold and dry weather is expected in most parts of the country. Foggy conditions are likely to prevail over few plain areas of Punjab and upper Sindh during night and morning hours.

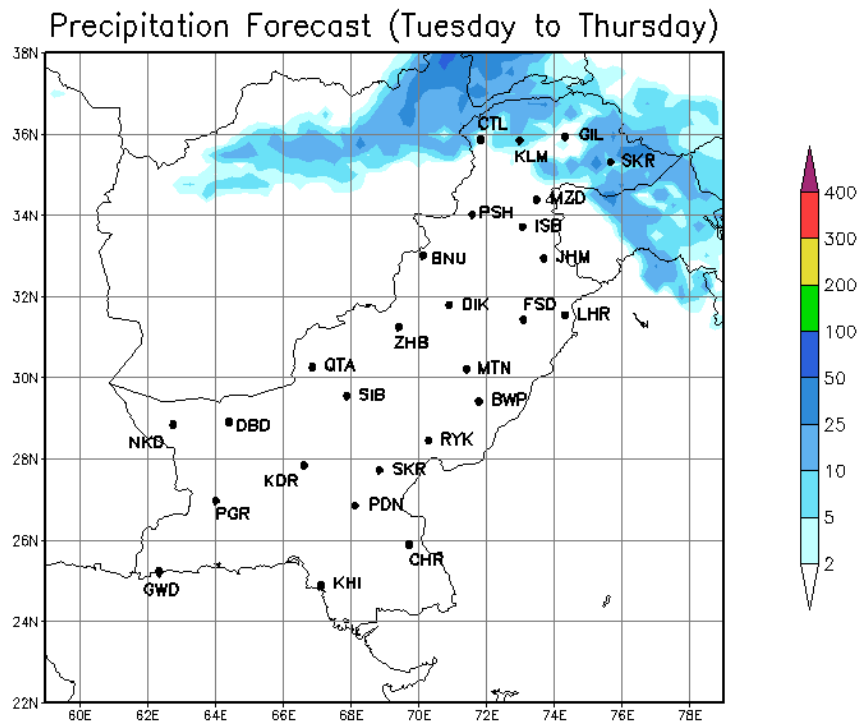
ADVISES FOR FARMERS

During the last week, light rainfall occurred in most parts of the country. In next week light rainfall is expected at upper parts of the country. Accordingly, following advises are suggested for the farming community.

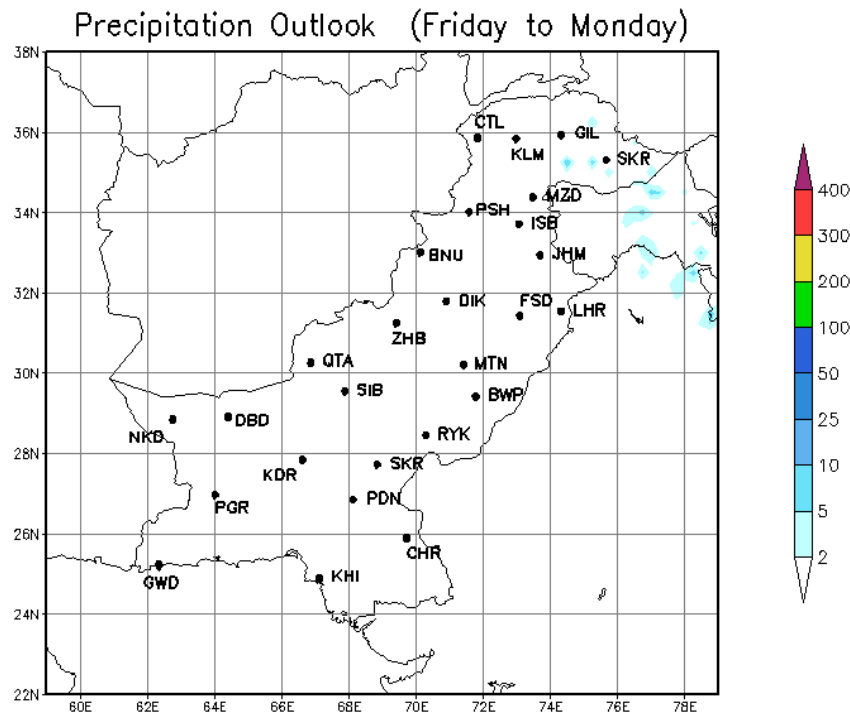
- Necessary precautionary measures may be taken to protect crops/nurseries from effects of extreme weather.
- Removal of weeds from the fields may be ensured.

Weather Outlook from 26th December, 2017 to 1st January, 2018

The outlook for the period 26th to 28th December, 2017 shows that light to moderate rainfall is expected in most parts of Upper K.P, Kashmir and Gilgit-Baltistan. While dry weather may prevail in rest parts of the country.



The outlook for the period 29th December, 2017 to 1st January, 2018 shows that dry weather is expected to prevail in most parts of the country however light rainfall is expected at a few places in Gilgit-Baltistan.



National Weather Data of Selected Cities (18th to 24th December, 2017)

Stations	Minimum Night time 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	Lowest							
Astore	-4.2	-7.0	**	70	0.00	6.5	6.1	0.7	1.1
Badin	14.1	13.0	109.3	49	0.00	2.7	3.6	1.7	2.9
Bahawalnagar	8.5	5.0	85.3	54	0.00	1.5	1.7	0.0	0.0
Bahawalpur	7.8	5.0	78.6	73	0.00	1.0	1.3	0.3	1.4
Balakot	4.1	1.8	41.9	62	0.01	4.7	3.0	0.0	0.4
Bannu	4.7	3.0	64.0	48	0.00	1.5	0.9	0.0	0.3
Barkhan	6.0	4.0	58.3	40	0.01	1.8	2.0	0.8	0.9
Bunji	3.7	3.3	24.3	51	0.02	7.3	6.7	1.0	1.4
Cherat	4.9	3.5	32.0	48	0.00	3.5	0.6	6.0	4.0
Chhor	9.3	7.5	102.1	47	0.00	1.8	3.1	1.7	4.9
Chilas	4.1	2.5	27.5	53	1.30	6.2	5.9	0.3	1.4
Chitral	1.5	-2.7	17.4	50	0.00	3.2	4.1	4.7	7.4
D.G.Khan	4.8	4.2	67.0	57	0.01	0.8	1.7	3.7	4.6
D.I.Khan	7.1	5.5	80.3	58	0.00	0.5	1.1	0.7	0.6
Dalbandin	3.4	1.0	56.0	42	0.00	1.2	1.4	0.0	2.0
Dir	-1.1	-3.0	23.6	63	0.00	5.0	3.7	0.0	2.0
Drosh	0.6	-2.3	12.8	47	0.00	4.8	4.1	1.7	6.9
Faisalabad	6.0	2.5	50.4	65	0.00	1.1	2.9	0.2	0.5
Gari dopatta	4.5	3.0	48.5	59	1.01	3.0	3.7	1.7	3.1
Gawader	12.0	9.0	106.5	57	6.00	0.7	0.4	1.0	6.0
Gilgit	-0.3	-3.0	2.8	69	4.42	6.7	6.1	0.0	1.4
Gupis	-3.7	-6.0	**	63	2.00	5.5	5.4	1.8	1.1

Hyderabad	12.9	11.0	109.4	62	0.00	3.2	1.7	9.3	9.4
Islamabad	4.8	2.3	56.5	70	0.01	3.0	2.4	0.0	0.3
Jacobabad	9.8	8.0	84.0	65	8.00	2.0	1.7	0.3	0.0
Jhang	6.5	4.5	78.1	66	0.00	1.7	2.0	0.0	0.3
Jhelum	6.9	4.4	74.7	63	0.00	2.3	2.1	0.7	0.6
Jiwani	16.7	15.5	116.8	55	7.00	2.7	1.7	2.0	6.0
Kakul	2.9	1.5	34.8	57	1.00	4.0	1.6	0.0	0.6
Kalam	-2.9	-4.5	**	82	12.00	6.0	5.4	0.0	0.0
Kalat	-4.3	-7.0	2.0	46	0.00	0.0	1.1	0.0	0.0
Karachi	14.2	12.5	115.2	38	0.00	3.4	1.1	1.6	7.7
Khanpur	6.7	4.1	76.5	70	0.00	2.2	1.6	0.0	0.6
Khuzdar	3.7	1.0	55.5	52	21.00	1.6	1.4	0.4	1.1
Kotli	7.7	5.0	75.2	58	0.00	0.8	1.0	1.3	0.6
Lahore	9.3	6.5	83.0	57	0.00	1.0	2.9	0.0	1.1
Larkana	7.0	3.2	71.9	68	16.00	1.7	2.1	0.0	1.1
Lasbella	12.1	8.0	105.4	56	17.00	2.7	1.7	0.7	0.6
Lower Dir	4.6	1.5	46.0	73	0.00	3.7	2.0	1.7	1.1
M.B Din	7.5	6.5	74.5	63	0.00	1.2	1.6	0.0	0.9
Malam Jabba	-4.8	-6.5	**	74	4.00	3.2	3.3	0.0	0.0
Mangla	7.5	4.7	76.6	52	0.00	2.5	2.1	2.3	5.4
Mir Khani	2.3	0.5	25.4	58	0.00	3.7	3.6	0.0	1.1
Moinjodaro	7.3	2.5	74.0	72	12.00	1.6	1.1	0.7	2.3
Multan(PBO)	8.4	6.3	76.6	69	0.01	2.0	2.3	0.0	0.6
Murree	5.0	2.5	31.1	43	0.01	2.7	2.4	3.0	1.4
Muzaffarabad	4.8	1.9	49.8	59	0.01	3.7	2.7	1.5	0.3
Nawabshah	8.6	5.5	86.3	65	1.00	2.0	1.4	2.7	5.1

Nokkundi	7.3	6.5	73.8	21	0.01	1.8	2.4	2.0	2.3
Okara	8.1	7.0	80.0	69	0.00	0.0	1.9	0.0	0.0
Padidan	8.3	5.5	79.8	70	4.50	3.0	2.3	1.3	1.7
Panjgur	2.9	2.5	49.0	39	0.00	0.7	1.6	9.3	11.7
Parachinar	-2.1	-3.5	12.7	50	0.00	4.5	4.3	4.0	5.0
Pasni	15.4	14.0	115.3	75	3.00	2.6	1.0	1.6	4.7
Pattan	8.4	6.0	54.5	44	0.00	3.7	3.1	6.7	4.3
Peshawar	5.7	4.3	68.7	66	0.00	3.7	1.6	0.3	0.9
Quetta	2.0	0.2	16.2	37	0.01	2.1	2.0	1.7	3.3
Rahim Yar Khan	7.5	4.6	79.3	69	0.01	0.5	1.3	0.0	1.4
Rawalakot	-0.8	-2.0	19.2	69	0.51	2.6	4.0	0.0	0.0
Rawalpindi	4.7	2.1	60.3	76	0.00	2.7	2.1	0.0	0.6
Rohri	9.9	9.0	92.5	63	2.01	2.0	1.4	0.0	0.0
Sahiwal	8.4	7.0	77.3	64	0.00	0.7	1.9	0.7	0.9
Saidu Sharif	2.9	0.5	39.1	61	0.00	4.3	3.1	1.0	0.0
Sialkot	7.1	5.7	69.7	64	0.01	1.8	2.9	3.5	4.4
Sibbi	3.6	2.0	74.0	54	0.00	2.2	1.7	0.0	0.3
Skardu	-3.2	-3.6	**	73	0.00	7.2	6.1	0.0	0.0
Tandojam	8.7	7.0	86.8	62	0.00	1.1	0.9	0.5	3.2
Usta. M	9.1	6.5	77.3	90	5.00	2.3	2.1	0.0	0.3
Zhob	3.1	2.0	37.5	38	0.00	0.7	1.1	1.7	5.6

*** Shows that data was not available.

*Trace shows not-measurable data

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)