

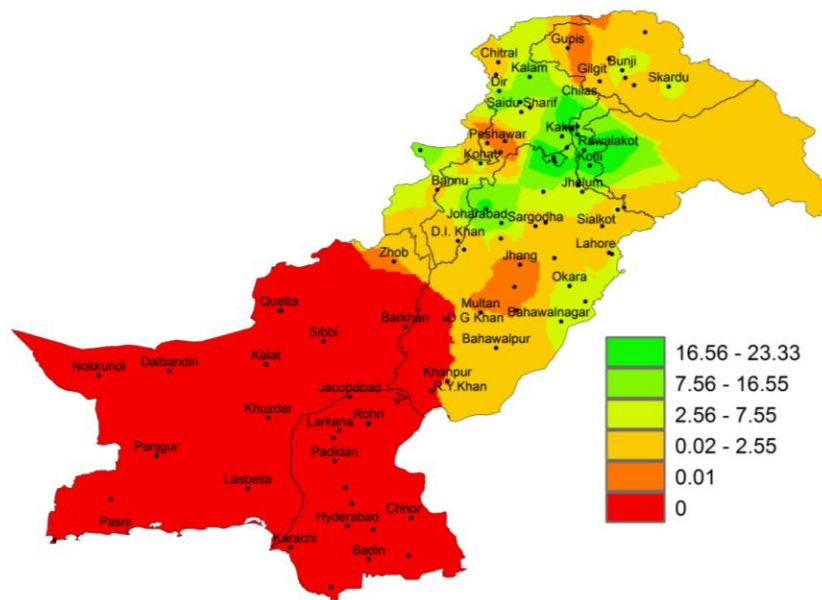
Weekly Weather and Crop Bulletin for Pakistan

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PAKISTAN METEOROLOGICAL
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**Rainfall Distribution (mm) during the Previous
Week (10th December to 16th December, 2018)**



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Highlights of Past Weather (10th December to 16th December, 2018)

Above normal night time temperatures were observed in Punjab, Sindh and Balochistan. However, mixed trend observed in Khyber Pakhtunkhwa, Gilgit-Baltistan and Azad Jammu & Kashmir during the week.

Province wise distribution of rainfall reported as follows:

- Light to moderate rainfall observed in Punjab, Khyber Pakhtunkhwa, Gilgit-Baltistan and Azad Jammu & Kashmir during the previous week.
- Dry weather observed in Balochistan and Sindh during the previous week.

Patron-in-Chief: Mr. Riaz Khan (Director General)

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Editor: Saeeda Saleh (Assistant Meteorologist)

Past Weather of Provinces (10th December to 16th December, 2018)

Punjab

Light to moderate rainfall observed in Punjab during the week. Weekly maximum and minimum temperatures recorded as 19.6°C & 8.9°C respectively. For the recent week on average 59.9 growing degree days were accumulated by the end of the last week. Average relative humidity recorded as 70% and wind speed in the morning/evening recorded as 0.6/1.4 Knots. During the previous week the highest amount of rainfall was recorded as 27.5 mm from Islamabad & the lowest minimum temperature was recorded as -2.0°C at Murree.

Baluchistan

Dry weather observed in Baluchistan during the week. Weekly maximum and minimum temperatures recorded as 21.4°C & 6.4°C respectively. For the recent week on average 66.1 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 1.2/2.6 Knots. During the previous week the lowest minimum temperature was recorded as -6.5°C at Quetta.

Khyber Pakhtunkhwa

Light to moderate rainfall observed in Khyber Pakhtunkhwa during the week. Weekly maximum and minimum temperatures recorded as 14.4°C & 1.8°C respectively. For the recent week on average 27.7 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 2.2/2.3 Knots. During the previous week the highest amount of rainfall was recorded as 19.00 mm at Balakot & the lowest minimum temperature was recorded as -11.0°C at Kalam.

Gilgit-Baltistan and Azad Jammu & Kashmir

Light to moderate rainfall observed in Gilgit-Baltistan & Kashmir during the week. Weekly maximum and minimum temperatures recorded as 10.6°C & -0.4°C respectively. For the recent week on average 25.0 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 59% and wind speed in the morning/evening recorded as 1.1/0.7 Knots. During the previous week the highest amount of rainfall was recorded as 23.4 mm from Kotli & the lowest minimum temperature was recorded as -10.6°C at Skardu.

Sindh

Dry weather observed in Sindh during the week. Weekly maximum and minimum temperatures recorded as 24.5°C & 10.8°C respectively. For the recent week, on average 87.6 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 1.4/4.6 Knots. During the previous week lowest minimum temperature was recorded as 3.5°C at Moin-Jo-Daro.

Past Weather for Major Agricultural Plains (10th December to 16th December, 2018)

Rawalpindi (Potohar region)

Rainfall reported as 31.8 mm from Rawalpindi during the week; however, cloudiness in the morning/evening recorded as 4.7/3.6 Oktas while, average relative humidity observed as 81%. Mean night time temperature recorded as 3.6°C & for the recent week 38.5 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 2.5/1.9 Knots.

Faisalabad (Central Punjab)

Dry weather reported from Faisalabad during the week; however, cloudiness in the morning/evening recorded as 1.4/1.3 Oktas while, average relative humidity observed as 73%. Mean night time temperature recorded as 7.3°C & for the recent week 64.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.8/0.5 Knots.

Tandojam (Lower Sindh)

Dry weather reported from Tandojam during the week; however, clear sky was observed in the morning/evening while, average relative humidity observed as 69%. Mean night time temperature recorded as 10.3°C & for the recent week 84.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.8/0.5 Knots.

Usta Muhammad (Eastern Baluchistan)

Dry weather reported from Usta Muhammad during the week; however, cloudiness in the morning/evening recorded as 1.0/1.1 Oktas while, average relative humidity observed as 72%. Mean night time temperature recorded as 11.2°C & for the recent week 85.9 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.3/0.5 Knots.

Quetta (Northern Baluchistan)

Rainfall reported as 0.4 mm from Quetta during the week; however, cloudiness in the morning/evening

recorded as 0.3/2.9 Oktas while, average relative humidity observed as 32%. Mean night time temperature recorded as -0.3°C & for the recent week 8.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.2/2.6 Knots.

Past Weather for Sub-Regional Agricultural Plains (10th December to 16th December, 2018)

Multan

Dry weather reported from Multan during the week; however, clear sky was observed in the morning/evening while, average relative humidity observed as 70%. Mean night time temperature recorded as 7.5°C & for the recent week 64.0 growing degree days accumulated by the end of last week. Calm weather recorded in the morning/evening.

Lahore

Rainfall reported as 5.01 mm from Lahore during the week; however, cloudiness in the morning/evening recorded as 1.4/1.6 Oktas while, average relative humidity observed as 70%. Mean night time temperature recorded as 8.5°C & for the recent week 66.5 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.2/1.2 Knots.

Zhob

Dry weather reported from Zhob during the week; however, cloudiness in the morning/evening recorded as 0.0/0.5 Oktas while, average relative humidity observed as 51%. Mean night time temperature recorded as 2.2°C & for the recent week 27.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.0/5.0 Knots.

Murree

Rainfall reported as 11.9 mm from Murree during the week; however, cloudiness in the morning/evening recorded as 0.0/2.2 Oktas while, average relative humidity observed as 72%. Mean night time temperature recorded as -0.6°C by the end of last week. Wind speed recorded in the morning/evening as 1.6/2.0 Knots.

D.I. Khan

Rainfall reported as 0.02 mm from D.I. Khan during the week; however, clear sky was observed in the morning/evening while, average relative humidity observed as 82%. Mean night time temperature recorded as 7.1°C & for the recent week 64.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.2/0.8 Knots.

Peshawar

Rainfall reported as 0.01 mm from Peshawar during the week; however, cloudiness in the morning/evening recorded as 0.0/0.4 Oktas while, average relative humidity observed as 74%. Mean night time temperature recorded as 4.8°C & for the recent week 49.2 growing degree days accumulated by the end of last week. Calm weather recorded in the morning/evening.

Kalam

Rainfall reported as 11.0 mm from Kalam during the week; however, cloudiness in the morning/evening recorded as 0.0/1.0 Oktas while, average relative humidity observed as 71%. Mean night time temperature recorded as -7.7°C by the end of last week. Calm weather recorded in the morning/evening.

Gilgit

Rainfall reported as 0.02 mm from Gilgit during the week; However, cloudiness in the morning/evening recorded as 4.0/2.4 Oktas while, average relative humidity observed as 57%. Mean night time temperature recorded as -0.8°C & for the recent week 6.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 2.0/0.0 Knots.

Skardu

Rainfall reported as 2.9 mm from Skardu during the week; however, cloudiness in the morning/evening recorded as 4.6/2.8 Oktas while, average relative humidity observed as 65%. Mean night time temperature recorded as -6.1°C by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.4 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)

Presently wheat crop is grown in the fields of RAMC Faisalabad.

Wheat: *Very Good, 3rd Leaf stage.*

Lower Sindh (Tandojam)

Presently wheat crop is sown in the fields of RAMC Faisalabad.

Wheat (TJ-83): *Good, Tillering stage.*

Northern Baluchistan (Quetta)

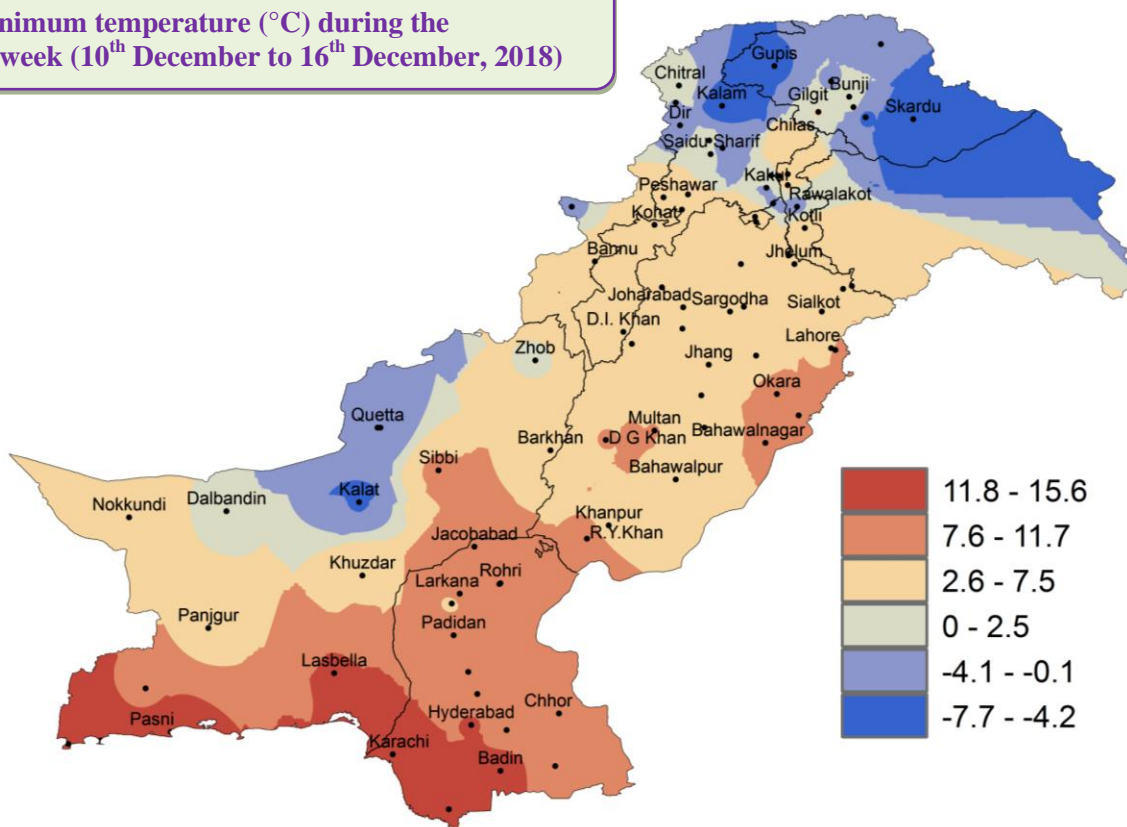
There is presently no crop grown in the fields of RAMC Quetta.

Eastern Baluchistan (Usta Muhammad)

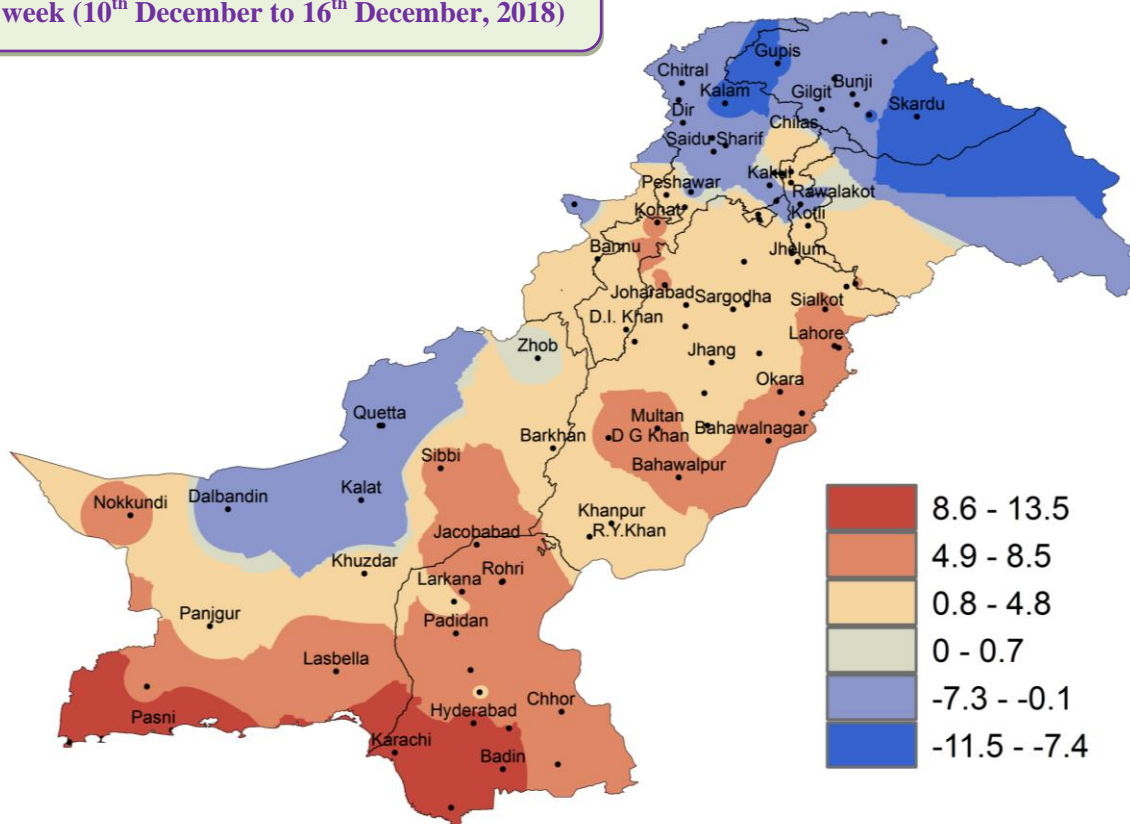
Presently wheat crop is sown in the fields of RAMC Usta Muhammad.

Wheat: *Good, Emergence stage.*

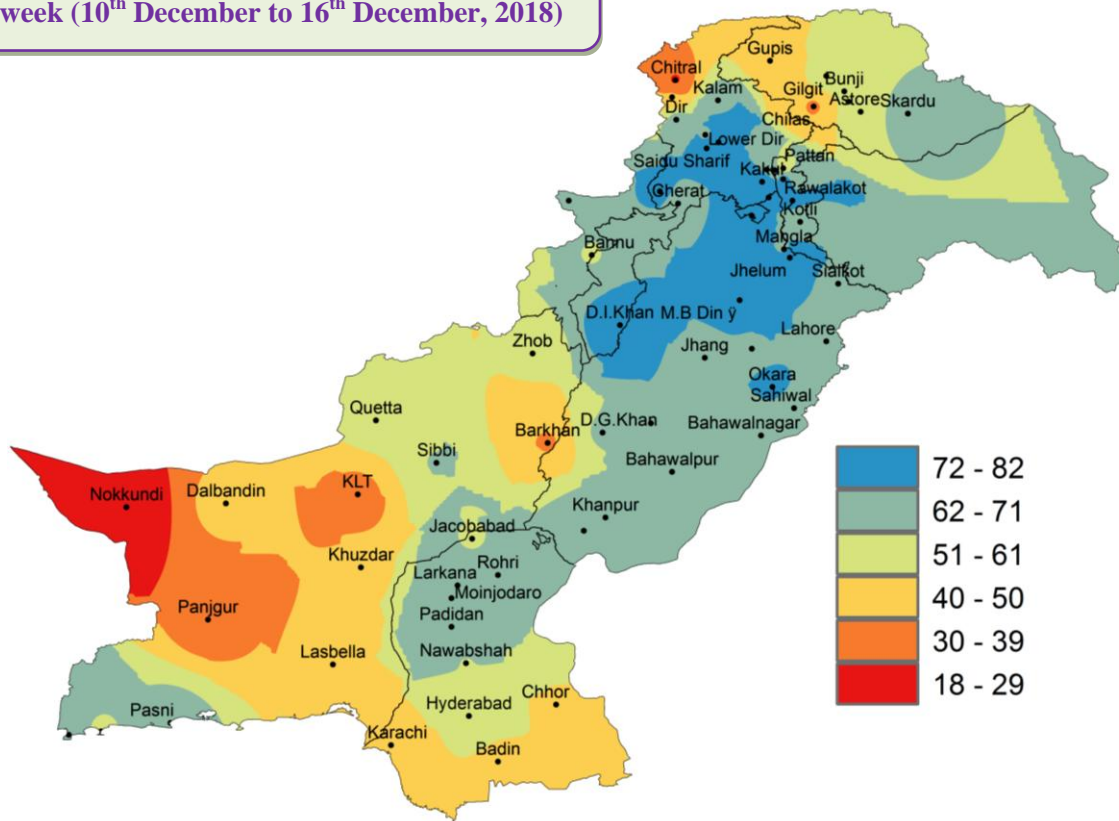
**Mean Minimum temperature (°C) during the
Previous week (10th December to 16th December, 2018)**



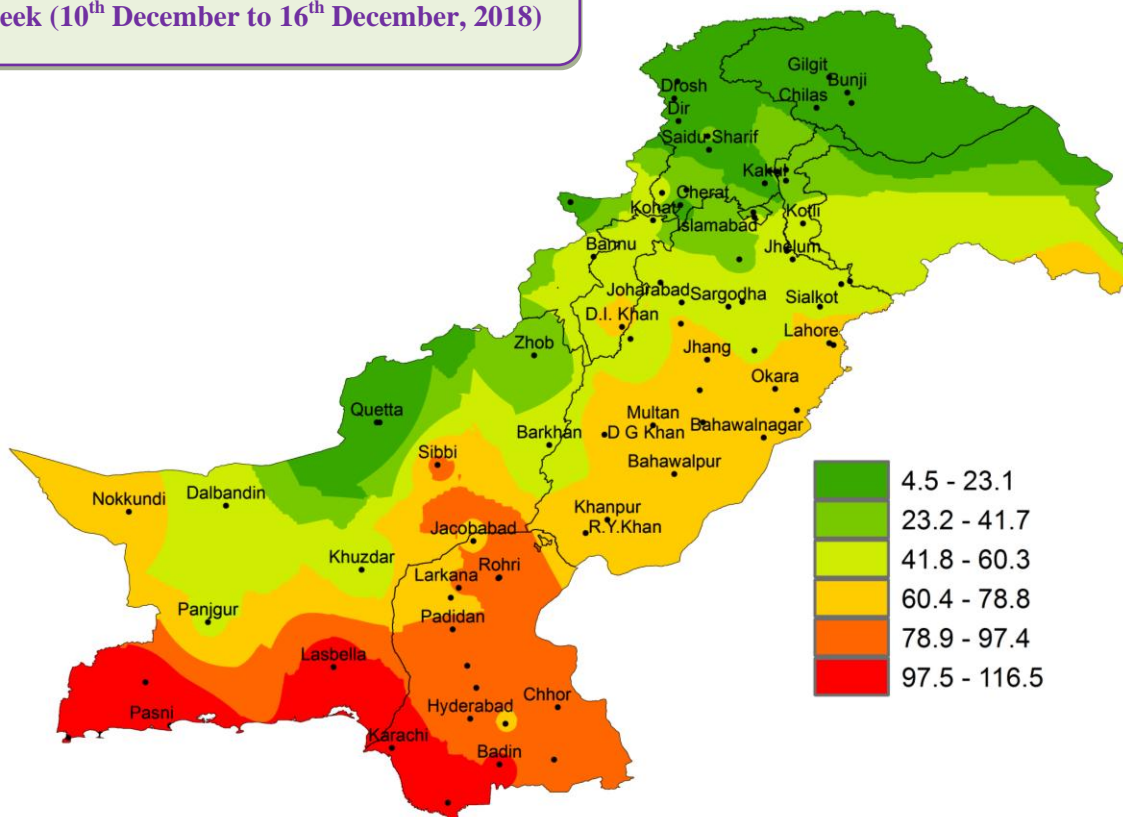
**Lowest Minimum Temperature (°C) during the
Previous week (10th December to 16th December, 2018)**



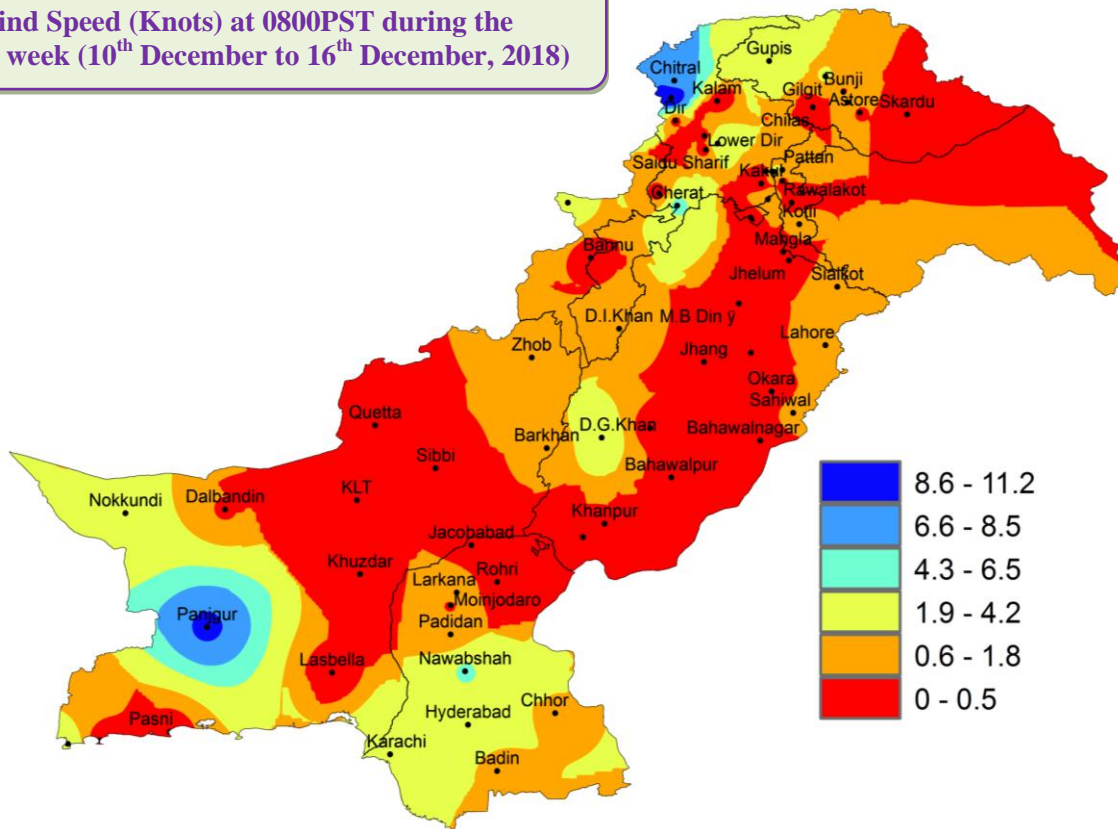
**Mean Relative Humidity (%) during the
Previous week (10th December to 16th December, 2018)**



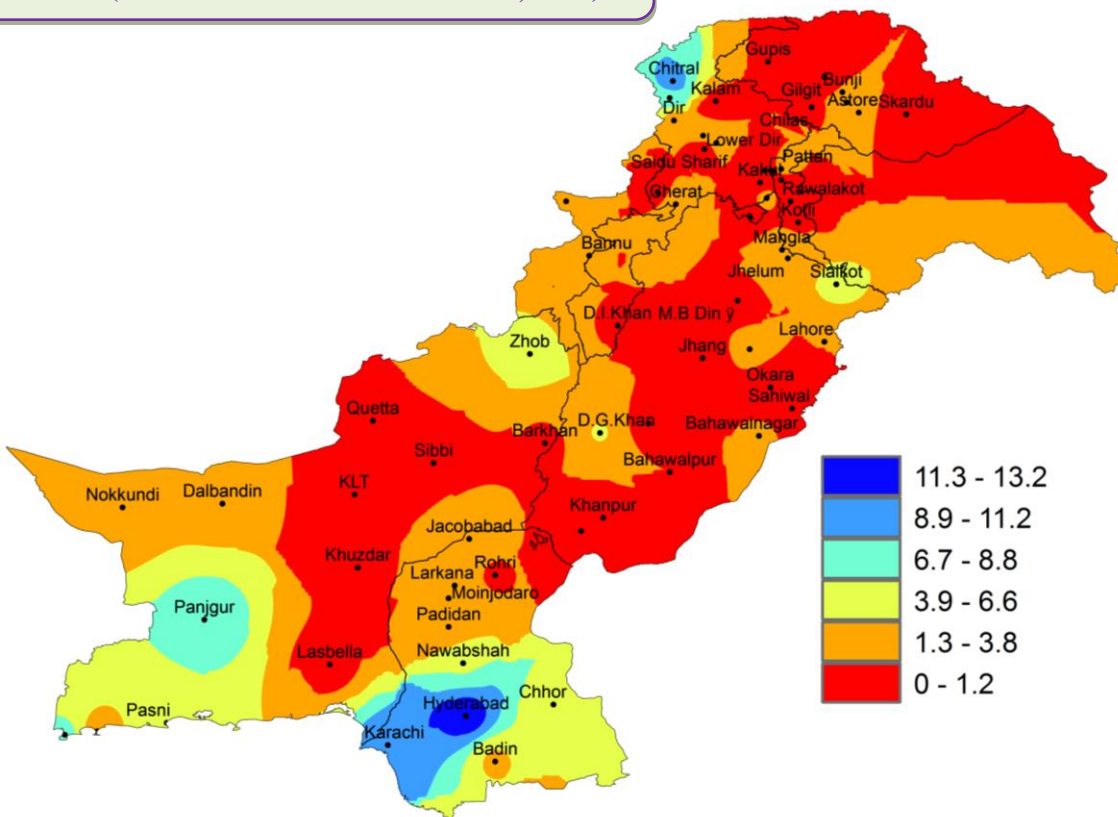
**Total Growing Degree Days accumulated during the
Previous week (10th December to 16th December, 2018)**



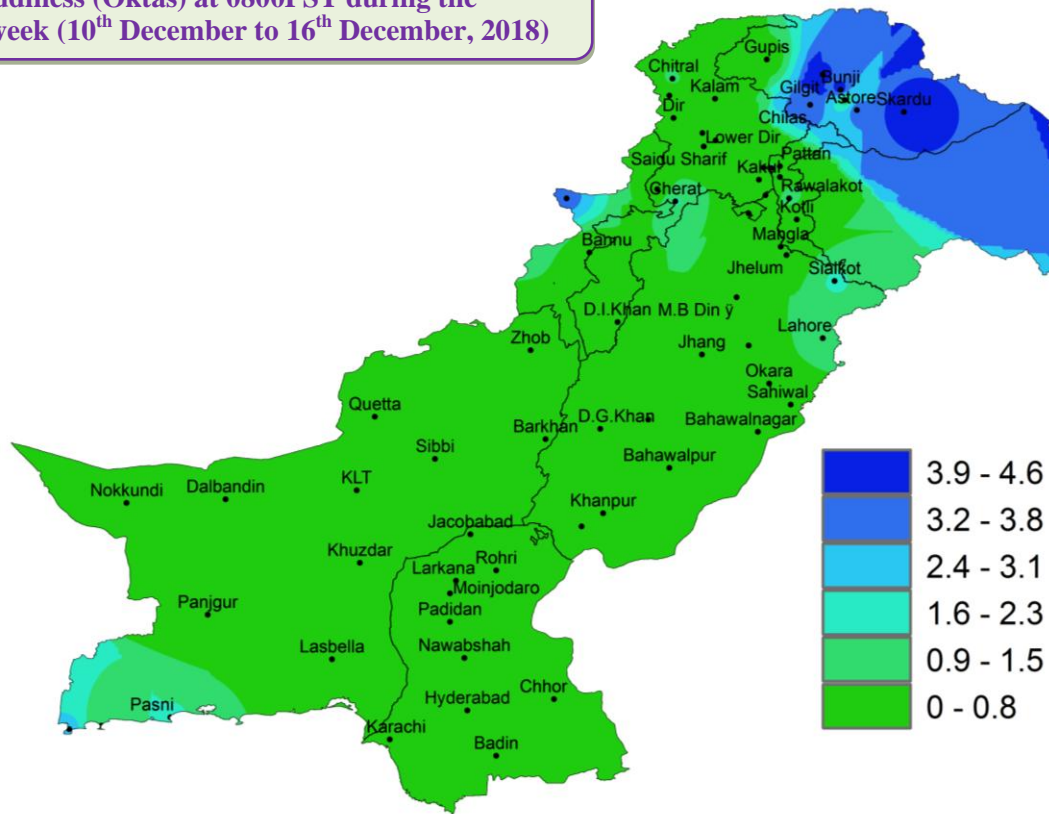
Mean Wind Speed (Knots) at 0800PST during the Previous week (10th December to 16th December, 2018)



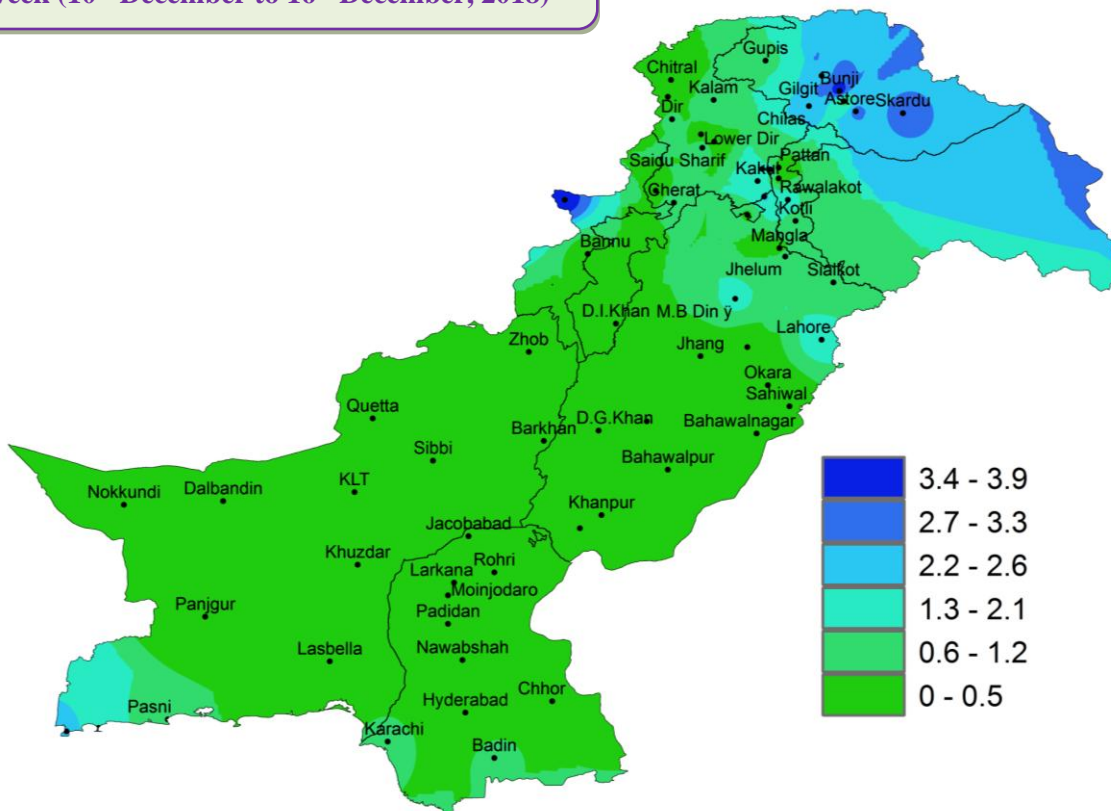
Mean Wind Speed (Knots) at 1700PST during the Previous week (10th December to 16th December, 2018)



Mean Cloudiness (Oktas) at 0800PST during the
Previous week (10th December to 16th December, 2018)



Mean Cloudiness (Oktas) at 1700PST during the
Previous week (10th December to 16th December, 2018)



Weekly Weather Advisory for Farmers
(17th December to 23rd December, 2018)

Continental air is likely to prevail over most parts of the country during next few days.

MONDAY**17-12-2018**

Mainly cold and dry weather is expected in most parts of the country during next few days. Very cold weather is expected in northern parts of the country and frost is also expected in upper parts of the country during morning hours. Dense/Shallow foggy conditions are likely to continue in few central and southern parts of Punjab during morning/night hours.

TUESDAY**18-12-2018**

Mainly cold and dry weather is expected in most parts of the country during next few days. Very cold weather is expected in northern parts of the country and frost is also expected in upper parts of the country during morning hours. Dense/Shallow foggy conditions are likely to continue in few central and southern parts of Punjab during morning/night hours.

WEDNESDAY**19-12-2018**

Mainly very cold and dry weather is expected in northern areas, while cold and dry in other parts of the country. Shallow foggy conditions are likely to prevail in few central and southern parts of Punjab.

THURSDAY**20-12-2018**

Mainly very cold and dry weather is expected in northern areas, while cold and dry in other parts of the country. Shallow foggy conditions are likely to prevail in few central and southern parts of Punjab.

FRIDAY**21-12-2018**

Mainly very cold and dry weather is expected in northern areas, while cold and dry in other parts of the country. Shallow foggy conditions are likely to prevail in few central and southern parts of Punjab.

SATURDAY**22-12-2018**

Mainly very cold and dry weather is expected in northern areas, while cold and dry in other parts of the country. Shallow foggy conditions are likely to prevail in few central and southern parts of Punjab.

SUNDAY**23-12-2018**

Mainly very cold and dry weather is expected in most parts of the country. However, rain-thunderstorm is expected in Malakand division and Gilgit-Baltistan.

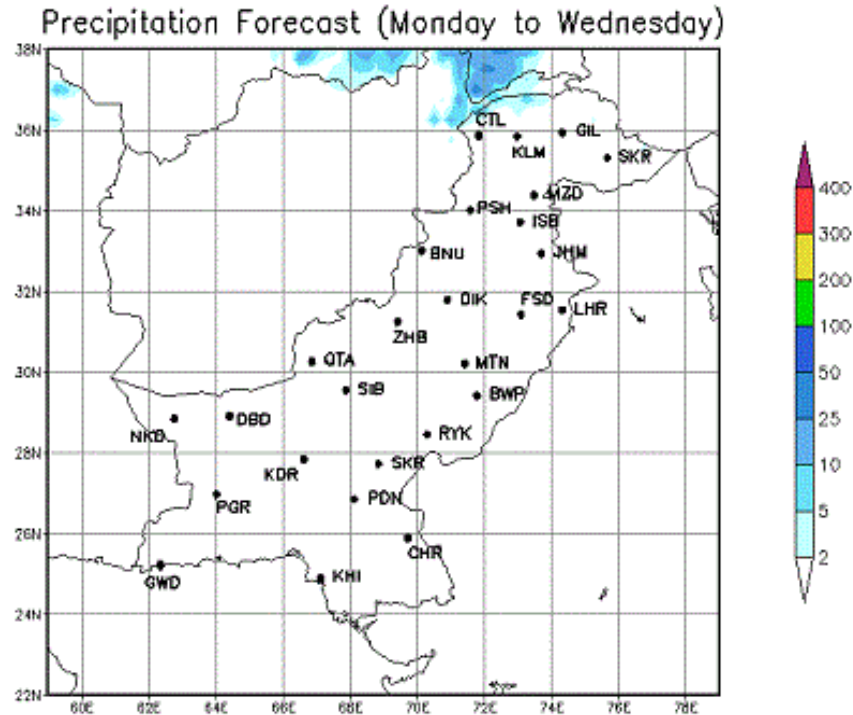
ADVISES FOR FARMERS

During the last week, light rainfall occurred at scattered places in GB and upper KP, while cold and dry weather prevailed in rest parts. This may continue with almost the same pattern in coming days as well. Keeping in view the expected weather conditions following advises are suggested for farming community.

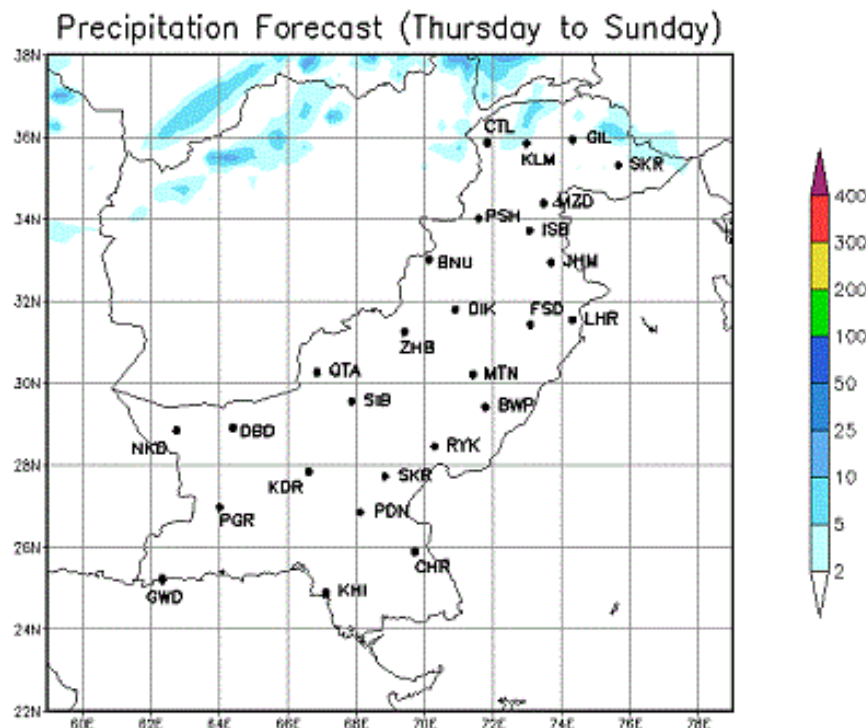
- Farmers are advised to use ensured and certified seed for the sowing of Rabi crops in accordance with the proper moisture conditions.
- Store cotton crop in proper and dry place because the cost of good and clean quality cotton is high than that of the filthy one.
- Protect your nurseries from frost.

Weather Outlook from (17th December to 23rd December, 2018)

The outlook from 17th December to 19th December, 2018 shows that light rain is expected in extreme northern parts of KP. However, dry weather may prevail in the rest of country.



The outlook from 20th December to 23rd December, 2018 shows that dry weather may prevail in the country. However, light rainfall is expected at isolated places in eastern GB and northern KP.



National Weather Data of Selected Cities (Weekly Data from 10th December to 16th December, 2018)

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	-5.5	-8.5	***	59	0.00	3.6	2.8	0.4	1.2
Badin	13.4	10.0	100.8	49	0.00	0.0	0.6	1.2	3.2
Bahawalnagar	7.6	6.0	68.3	64	3.00	0.0	0.0	0.0	1.5
Bahawalpur	7.4	5.1	63.5	66	2.00	0.0	0.0	0.0	1.2
Balakot	1.4	0.0	22.9	69	19.00	0.0	1.2	0.0	0.0
Bannu	5.8	4.0	55.9	60	2.00	0.0	0.0	0.0	1.2
Barkhan	4.7	3.0	43.0	39	0.00	0.0	0.0	0.8	0.5
Bunji	2.0	-1.4	9.4	52	8.00	4.4	4.0	0.4	1.2
Cherat	3.3	2.5	13.0	68	0.00	1.6	0.6	4.8	3.2
Chhor	8.6	5.5	93.3	50	0.00	0.0	0.4	1.6	4.8
Chilas	2.6	-1.0	21.8	38	0.00	3.6	2.2	0.0	0.8
Chitral	2.3	-0.5	14.3	28	1.70	0.8	0.0	7.6	10.0
D.G.Khan	7.6	5.1	67.6	62	0.00	0.4	0.4	3.2	4.0
D.I.Khan	7.1	4.0	64.0	82	0.02	0.0	0.0	1.2	0.8
Dalbandin	0.9	-2.0	44.0	44	0.00	0.0	0.0	0.4	2.4
Dir	-1.6	-3.5	7.5	65	8.00	0.6	0.6	0.0	2.0
Drosh	-0.2	-1.7	4.5	40	1.40	0.6	0.0	11.2	8.4
Faisalabad	7.3	3.5	64.8	73	0.00	1.4	1.3	0.8	0.5
Garidopatta	2.7	1.0	29.5	77	16.81	0.6	0.4	0.0	0.0
Gawader	14.1	12.0	102.0	59	0.00	0.8	1.3	0.0	2.5
Gilgit	-0.8	-5.0	6.3	57	0.02	4.0	2.4	2.0	0.0
Gupis	-5.7	-8.0	***	42	0.00	0.0	1.0	4.0	0.8

Hyderabad	12.2	10.0	92.3	54	0.00	0.4	0.0	4.0	13.2
Islamabad	3.6	1.0	37.1	77	20.40	0.0	0.4	0.0	0.0
Jacobabad	9.7	6.5	78.3	60	0.00	0.0	0.0	0.0	2.8
Jhang	6.4	3.5	64.4	66	0.00	0.0	0.0	0.0	0.0
Jhelum	6.2	3.6	56.7	76	3.30	0.0	0.6	0.0	2.0
Jiwani	15.6	13.0	116.0	70	0.00	2.6	2.6	2.8	7.6
Kakul	-0.4	-1.5	5.3	81	8.01	0.0	1.4	0.0	0.0
Kalam	-7.7	-11.0	***	71	11.00	0.0	1.0	0.0	0.0
Kalat	-4.5	-6.0	***	35	0.00	0.0	0.0	0.0	0.4
Karachi	13.9	10.0	108.7	43	0.00	0.0	0.6	4.0	10.4
Khanpur	7.0	3.5	68.0	64	0.00	0.0	0.0	0.4	0.0
Khuzdar	6.9	2.0	52.5	41	0.00	0.0	0.0	0.0	0.0
Kotli	6.1	3.5	52.6	68	23.40	0.0	1.0	1.0	0.8
Lahore	8.5	5.8	66.5	70	5.01	1.4	1.6	1.2	1.2
Larkana	9.6	6.0	82.0	69	0.00	0.0	0.0	1.2	3.0
Lasbella	11.9	7.8	106.1	45	0.00	0.0	0.0	0.0	0.0
Lower Dir	1.3	0.0	25.8	70	10.00	0.6	0.4	0.0	2.0
M.B Din	7.3	4.5	58.6	82	2.00	0.6	1.4	0.0	0.4
Malam Jabba	-2.9	-4.5	***	75	6.00	0.2	0.4	4.4	2.0
Mangla	5.8	3.6	55.9	70	7.00	0.6	0.4	0.0	2.4
Mir Khani	0.3	-1.6	13.7	52	1.20	0.8	0.6	1.2	2.2
Moinjodaro	6.7	3.0	71.5	66	0.00	0.0	0.0	0.4	2.0
Multan (PBO)	7.5	5.4	64.0	70	0.00	0.0	0.0	0.0	0.0
Murree	-0.6	-2.0	***	72	11.90	0.0	2.2	1.6	2.0
Muzaffarabad	3.1	2.0	30.4	65	20.00	1.2	1.6	2.4	0.0
Nawabshah	9.4	8.0	85.5	61	0.00	0.0	0.0	4.4	6.4

Nokkundi	6.4	5.5	67.8	18	0.00	0.0	0.0	2.0	1.6
Okara	8.1	5.0	66.4	73	3.00	0.0	0.0	0.0	0.0
Padidan	10.2	7.0	83.0	67	0.00	0.0	0.0	0.8	1.6
Panjgur	4.9	3.0	57.3	30	0.00	0.0	0.0	8.8	8.8
Parachinar	-1.0	-2.0	6.8	61	11.00	3.4	3.6	3.0	3.0
Pasni	15.2	12.5	114.5	69	0.00	1.6	0.6	0.0	5.0
Pattan	4.8	3.0	37.5	53	13.00	0.0	0.0	1.8	2.8
Peshawar	4.8	2.0	49.8	74	0.01	0.0	0.4	0.0	0.0
Quetta	-0.3	-3.2	8.0	32	0.40	0.3	2.9	0.2	2.6
Rahim Yar Khan	8.2	4.4	74.6	71	0.00	0.0	0.0	0.0	0.0
Rawalakot	-1.5	-3.0	***	73	19.71	1.0	1.4	0.0	0.0
Rawalpindi	3.6	1.5	38.5	81	31.80	4.7	3.6	2.5	1.9
Rohri	9.7	5.0	80.8	65	0.00	0.0	0.0	0.0	0.8
Sahiwal	8.4	5.0	67.0	68	4.00	0.0	0.0	0.8	0.8
Saidu Sharif	1.0	-0.5	17.6	75	5.00	0.0	0.6	0.0	0.0
Sialkot	7.3	4.0	59.5	69	2.91	1.6	0.6	1.6	4.6
Sibbi	8.9	7.0	81.8	61	0.00	0.0	0.0	0.0	0.0
Skardu	-6.1	-11.5	***	65	2.90	4.6	2.8	0.0	0.4
Tandojam	10.3	7.0	84.0	69	0.00	0.0	0.0	0.8	1.2
Usta.M	11.2	10.4	85.9	72	0.00	1.0	1.1	0.3	0.5
Zhob	2.2	0.0	27.0	51	0.00	0.0	0.5	1.0	5.0

*** 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)