

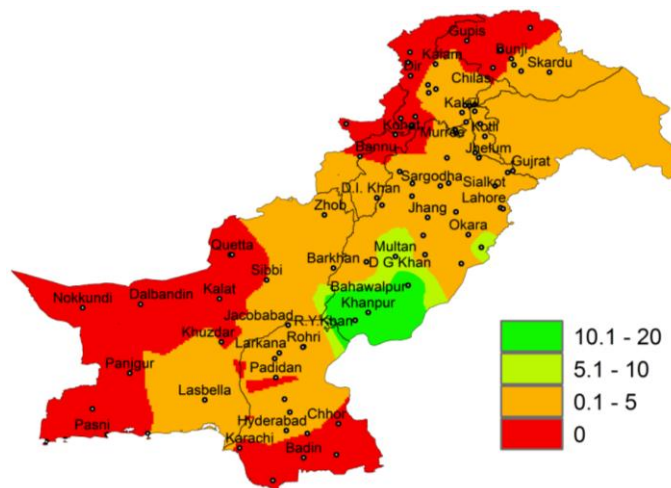
Weekly Weather and Crop Bulletin for Pakistan

NATIONAL AGROMET CENTRE
PAKISTAN METEOROLOGICAL
DEPARTMENT SECTOR H-8/2,
ISLAMABAD.

Phone: +92-51-9250299

Email: dirnamc@yahoo.com

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



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

Below normal night temperatures were observed in most parts of the country however above normal night time temperatures recorded in Gilgit-Baltistan during the previous week.

Province wise distribution of rainfall reported as follows:

- Light rainfall (with isolated moderate spells) reported from scattered places of Punjab while from a few parts of Kashmir during previous week.
- Light rainfall occurred at isolated places in KP, Sindh, Baluchistan and Gilgit-Baltistan.

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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 to 10th December, 2017)

Punjab

Light rainfall (with isolated moderate rainfalls) reported from Punjab during the week. Weekly maximum and minimum temperatures recorded as 24.1°C & 5.6°C respectively. For the recent week on average 69.1 growing degree days were accumulated by the end of the last week. Average relative humidity recorded as 60% and wind speed in the morning/evening recorded as 0.6/1.0 knots. During the previous week the highest amount of rainfall was recorded as 19.9 mm at R.Y Khan & lowest minimum temperature was recorded as 1.5°C at Joharabad.

Balochistan

Light rainfall reported from Balochistan during the week. Weekly maximum and minimum temperatures recorded as 20.9°C & 2.5°C respectively. For the recent week on average 42.1 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 34% and wind speed in the morning/evening recorded as 2.9/5.4 knots. During the previous week the highest amount of rainfall was recorded as 3 mm at Barkhan & lowest minimum temperature was recorded as -12.0°C at Kalat.

Khyber Pakhtunkhwa

Light rainfall reported from Khyber Pakhtunkhwa during the week. Weekly maximum and minimum temperatures recorded as 19.5°C & 2.2°C respectively. For the recent week on average 40.9 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 52% and wind speed in the morning/evening recorded as 1.0/2.4 knots. During the previous week the highest amount of rainfall was recorded as 2.4 mm at Malamjabba & lowest minimum temperature was recorded as -6°C at Kalam.

Gilgit-Baltistan and Azad Jammu & Kashmir

Light rainfall reported from Kashmir and Gilgit-Baltistan during the week. Weekly maximum and minimum temperatures recorded as 16.4°C & 1.0°C respectively. For the recent week on average 25.6 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 50% and wind speed in the morning/evening recorded as 0.4/1.4 knots. During the previous week the highest amount of rainfall was recorded as 2.2 mm at Rawalakot & lowest minimum temperature was recorded as -6.7°C at Skardu.

Sindh

Light rainfall reported from Sindh during the week. Weekly maximum and minimum temperatures recorded as 25.9°C & 9.0°C respectively. For the recent week, on average 86.5 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 46% and wind speed in the morning/evening recorded as 2.0/5.0 knots. During the previous week the highest amount of rainfall was recorded as 3 mm & lowest minimum temperature was recorded as 3°C at Larkana.

Past Weather for Major Agricultural Plains (4th to 10th December, 2017)

Rawalpindi (Potohar region)

Dry weather reported from Rawalpindi during the week; however, cloudiness in the morning/evening recorded as 1.0/1.0 Oktas while average relative humidity observed as 71%. Mean night time temperature recorded as 3.9°C & for the recent week 60.1 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.1/1.0 knots.

Faisalabad (Central Punjab)

Rainfall reported as 2.2 mm from Faisalabad during the week; however, cloudiness in the morning/evening recorded as 0.6/0.0 Oktas while average relative humidity observed as 59%. Mean night time temperature recorded as 4.6°C & for the recent week 69.4 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.5 knots.

Tandojam (Lower Sindh)

Dry weather reported from Tandojam during the week; however, cloudiness in the morning/evening recorded as 1.1/0.2 Oktas while average relative humidity observed as 57%. Mean night time temperature recorded as 7.3°C & for the recent week 75.5 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.6/2.5 knots.

Usta Muhammad (Eastern Balochistan)

Rainfall reported as *trace* (not measureable) from Usta Muhammad during the week; however, cloudiness in the morning/evening recorded 1.1/1.3 Oktas while average relative humidity observed as 63.5%. Mean night time temperature recorded as 6.8°C & for the recent week 71.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.7/1.7 knots.

Quetta (Northern Baluchistan)

Dry weather reported from Quetta during the week; however, cloudiness in the morning/evening recorded as 0.6/1.4 Oktas while average relative humidity observed as 29%. Mean night time

temperature recorded as -2.3°C & for the recent week 5.1 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 2.3/2.5 knots.

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

Multan

Rainfall reported as 9.7 mm from Multan during the week; however, cloudiness in the morning/evening recorded as 1.0/2.7 Oktas while average relative humidity observed as 74%. Mean night time temperature recorded as 7.0°C & for the recent week 75.4 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.9/2.0 knots.

Lahore

Rainfall reported as *trace* (not measureable) reported from Lahore during the week; however, cloudiness in the morning/evening recorded as 1.4/2.5 Oktas while average relative humidity observed as 50%. Mean night time temperature recorded as 8.3°C & for the recent week 79.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.7 knots.

Zhob

Rainfall reported as *trace* (not measureable) from Zhob during the week; however, cloudiness in the morning/evening recorded as 0.3/0.8 Oktas while average relative humidity observed as 31%. Mean night time temperature recorded as 0.3°C & for the recent week 21.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.6/4.8 knots.

Murree

Dry weather reported from Murree during the week; however, cloudiness in the morning/evening recorded as 1.1/1.7 Oktas while average relative humidity observed as 42%. Mean night time temperature recorded as 4.1°C & for the recent week 33.1 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 2.6/1.3 knots.

D.I. Khan

Rainfall reported as trace (not measureable) from D.I. Khan during the week; however, cloudiness in the morning/evening recorded as 0.4/0.5 Oktas while average relative humidity observed as 47%. Mean night time temperature recorded as 6.1°C & for the recent week 78.5 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.4/1.0 knots.

Peshawar

Dry weather reported from Peshawar during the week; however, cloudiness in the morning/evening recorded as 1.7/1.2 Oktas while average relative humidity observed as 70%. Mean night time temperature recorded as 4.6°C & for the recent week 62.1 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/2.3 knots.

Kalam

Dry weather from Kalam during the week; however, cloudiness in the morning/evening recorded as 1.9/2.7 Oktas while average relative humidity observed as 62%. Mean night time temperature recorded as -3.8°C & for the recent week 6.4 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.0 knots.

Gilgit

Dry weather reported from Gilgit during the week; However, cloudiness in the morning/evening recorded as 2.6/3.8 Oktas while average relative humidity observed as 63%. Mean night time temperature recorded as -3.3°C & for the recent week 12.4 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.0 knots.

Skardu

Dry weather reported from Skardu during the week; However, cloudiness in the morning/evening recorded as 3.4/4.3 Oktas while average relative humidity observed as 59%. Mean night time temperature recorded as -4.5°C & for the recent week *** growing degree days accumulated by the end of last week. 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*); good condition, *Germination Stage*

Lower Sindh (Tandojam)

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

Wheat (*Sindh*); good condition, *3rd leave stage*

Northern Baluchistan (Quetta)

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

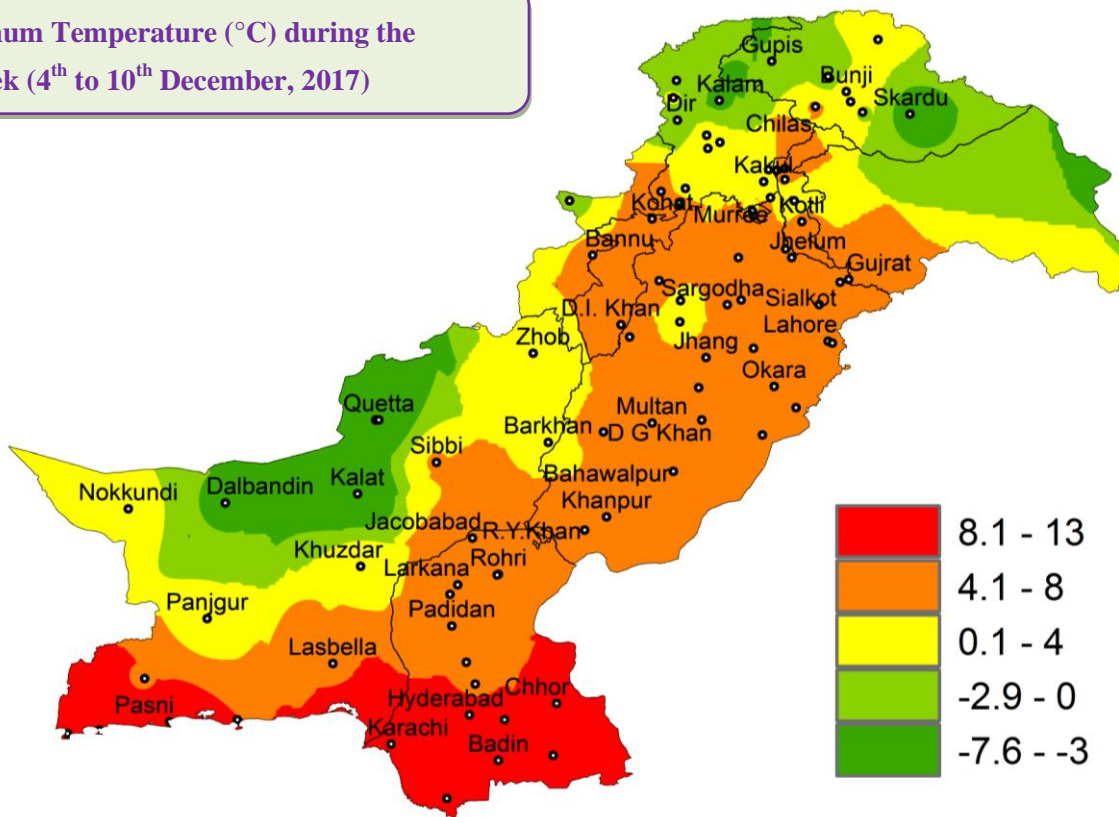
Eastern Baluchistan (Usta Muhammad)

There are presently two crops grown in the fields of RAMC Usta Muhammad.

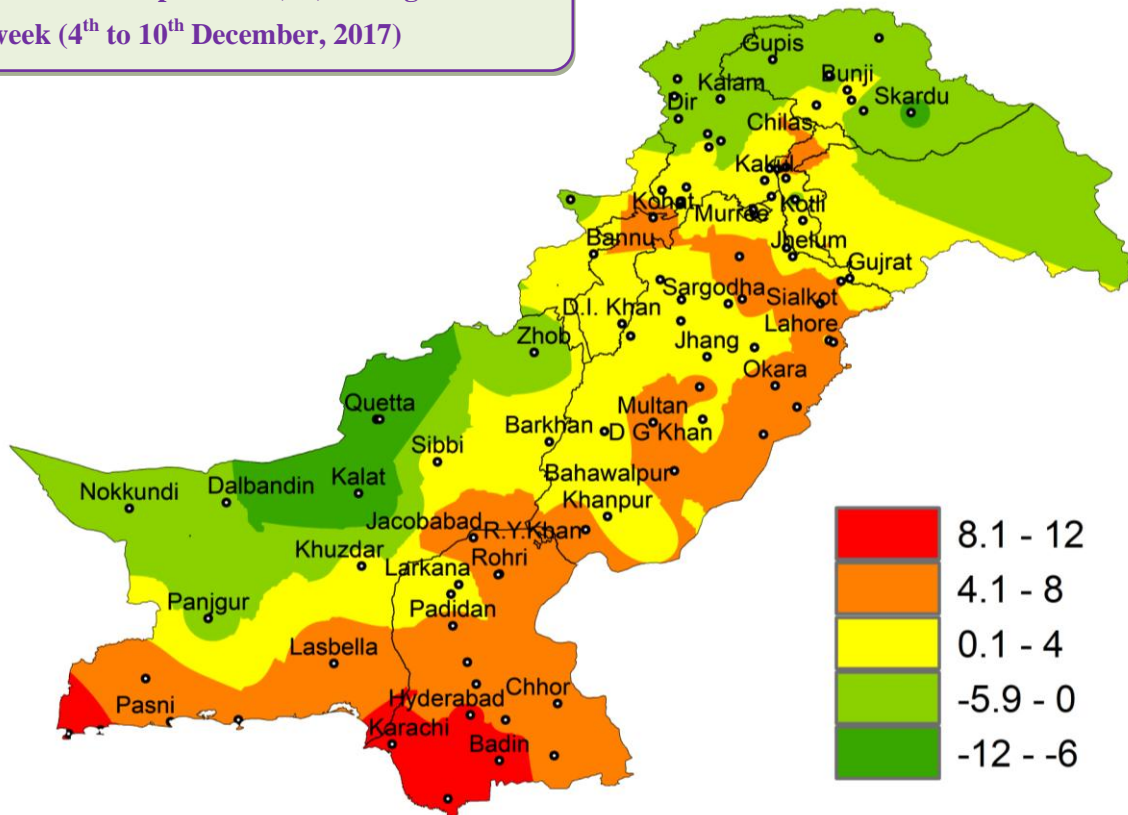
Rice; Harvesting Completed

Wheat (*Galaxy*); good condition, *2nd Leave stage*

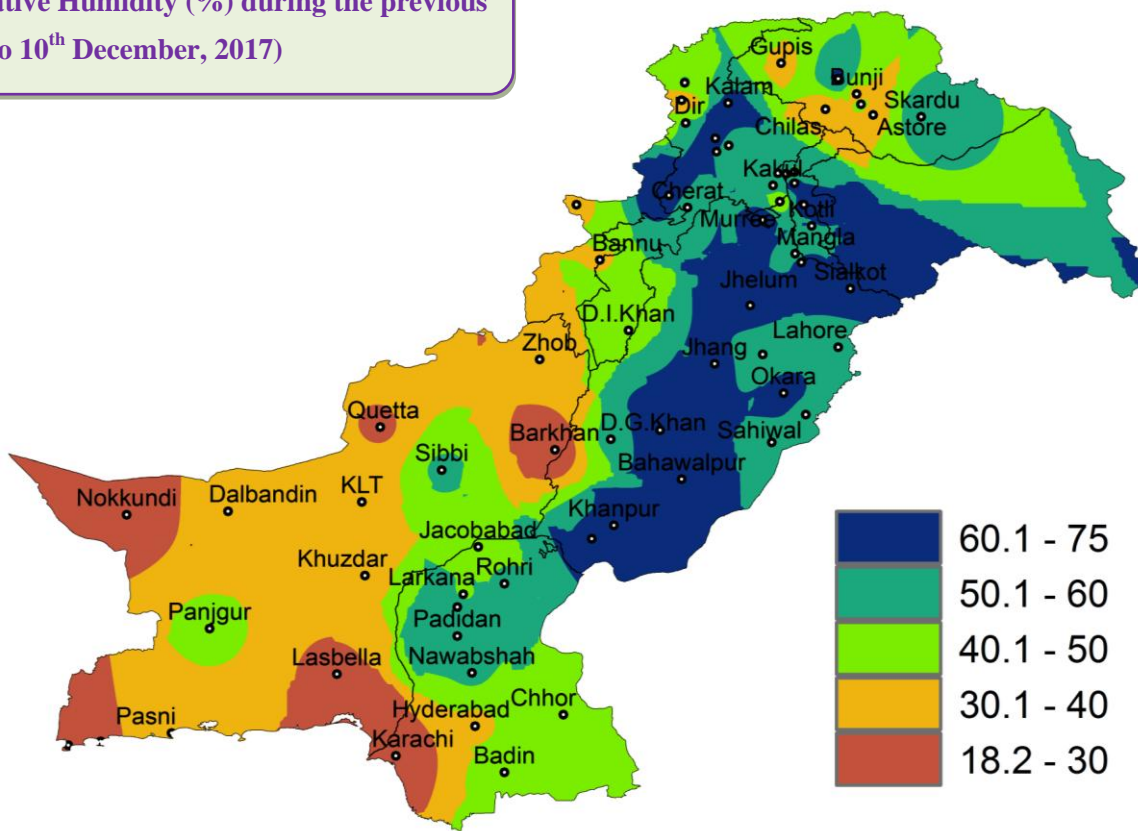
Mean Minimum Temperature (°C) during the Previous week (4th to 10th December, 2017)



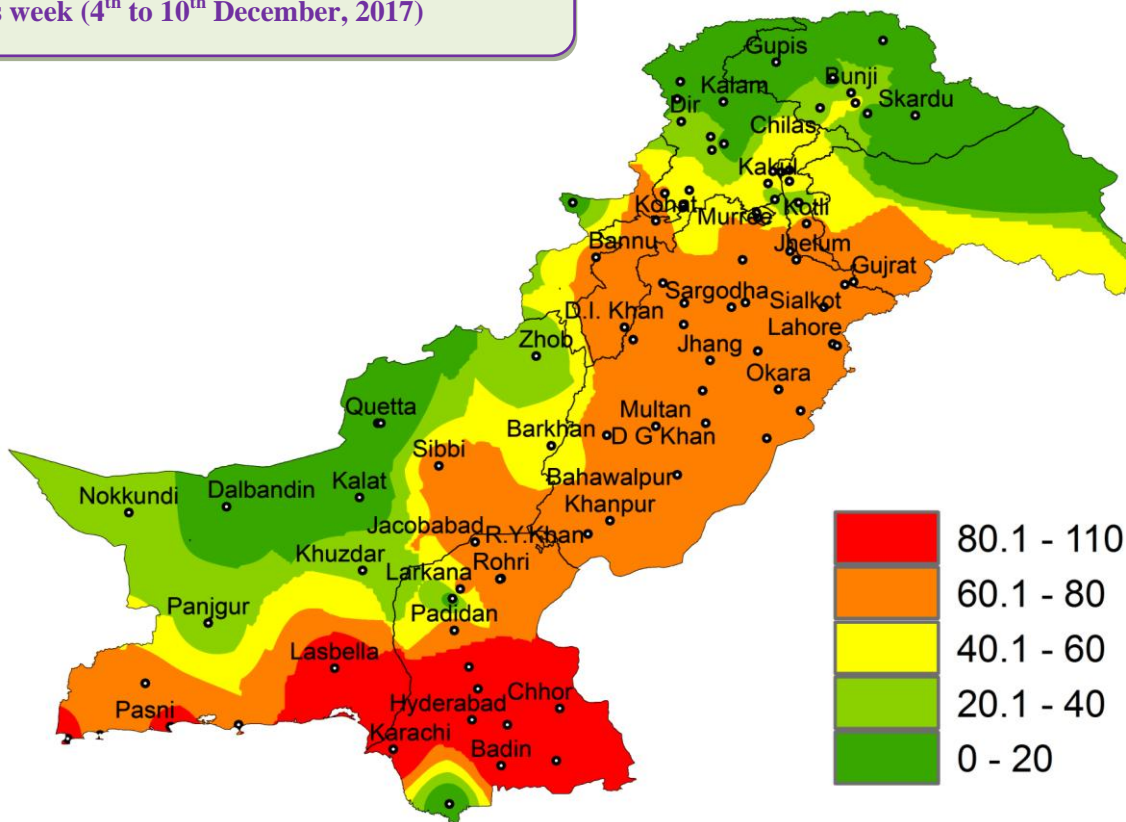
Lowest Minimum Temperature (°C) during the Previous week (4th to 10th December, 2017)



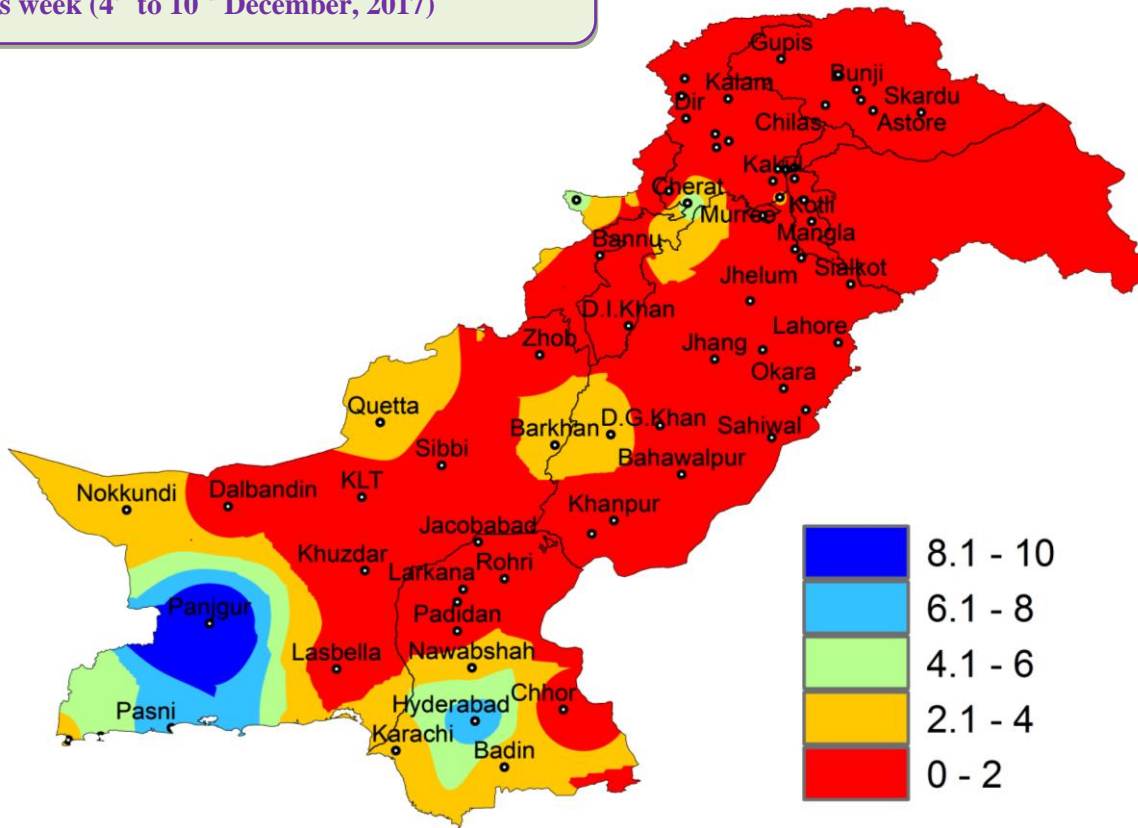
Mean Relative Humidity (%) during the previous week (4th to 10th December, 2017)



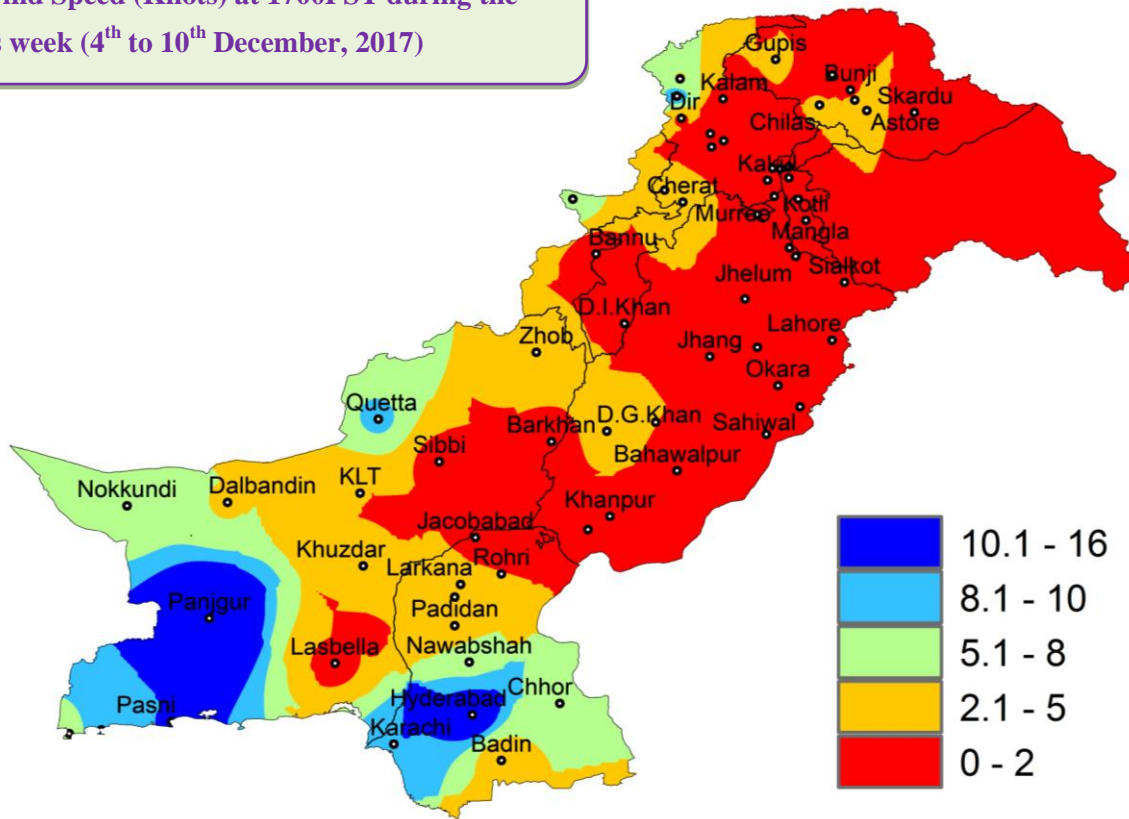
Total Growing Degree Days accumulated during the previous week (4th to 10th December, 2017)



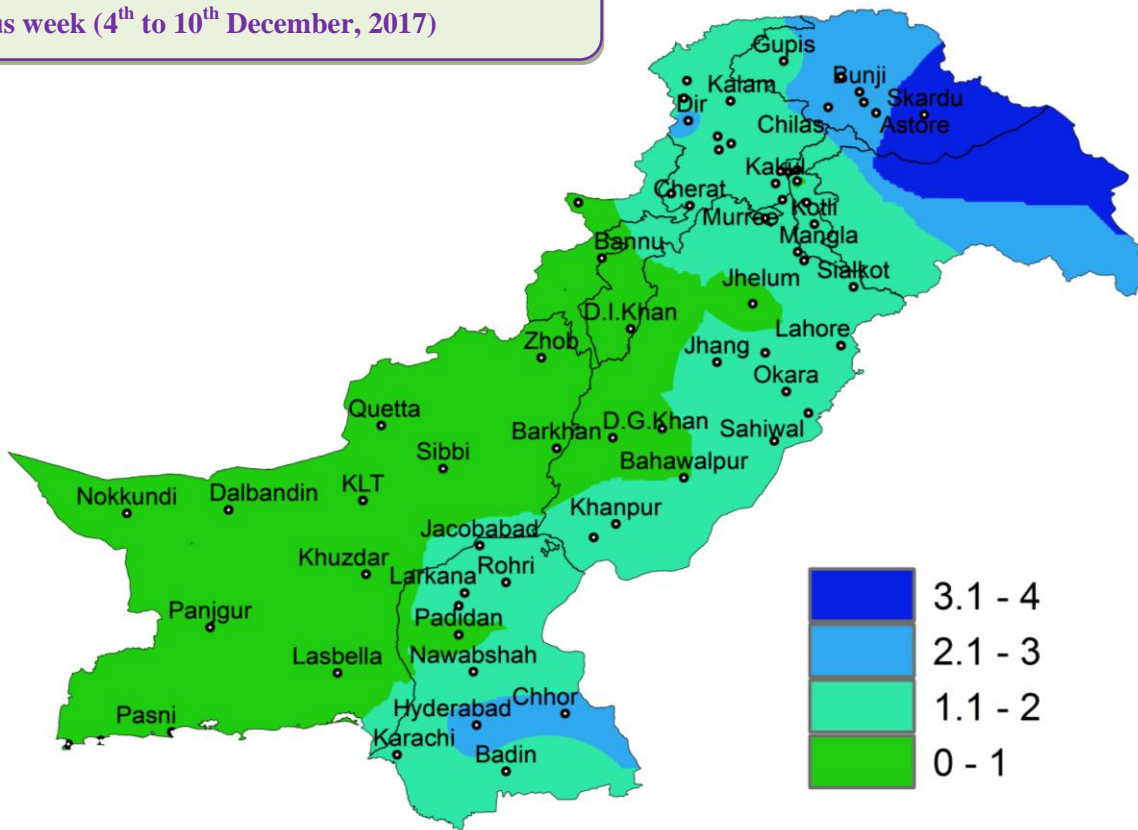
Mean Wind Speed (Knots) at 0800PST during the previous week (4th to 10rd December, 2017)



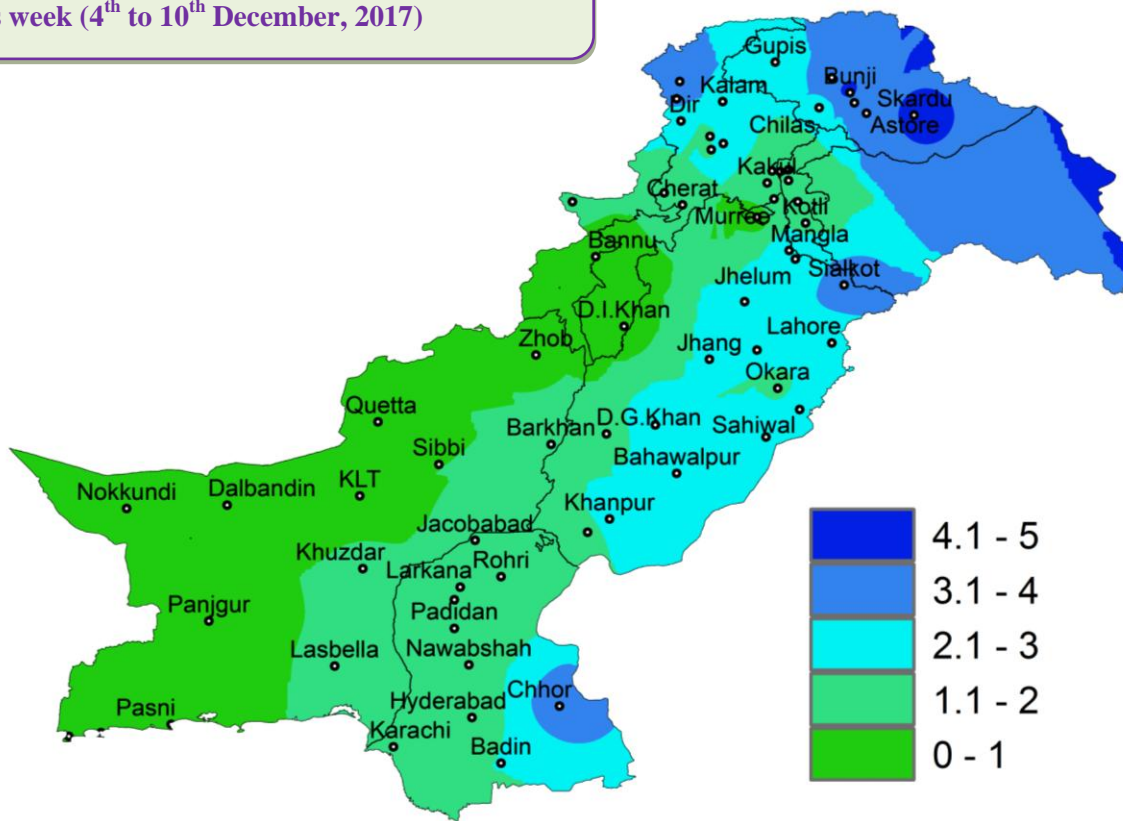
Mean Wind Speed (Knots) at 1700PST during the previous week (4th to 10th December, 2017)



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



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



Weekly Weather Advisory for Farmers
(11th to 17th December, 2017)

A westerly wave is prevailing in the country and may persist over upper and central parts of the country till Wednesday.

MONDAY
11-12-2017

Rain-thunderstorm with snowfall over the hills is expected at scattered places in upper Punjab, Islamabad, Kashmir and Gilgit-Baltistan while at isolated places in upper Khyber Pakhtunkhwa, upper FATA, south Punjab, northeast Balochistan and Sindh. Cold and dry weather is expected elsewhere in the country.

TUESDAY
12-12-2017

Rain-thunderstorm with snowfall over the hills is expected at scattered places in upper Punjab, Islamabad, Kashmir and Gilgit-Baltistan while at isolated places in upper Khyber Pakhtunkhwa, upper FATA, south Punjab, northeast Balochistan and Sindh. Cold and dry weather is expected elsewhere in the country.

WEDNESDAY
13-12-2017

Rain-thunderstorm with snowfall over the hills is expected at scattered places in Malakand, Hazara divisions, Gilgit-Baltistan and Kashmir, while at isolated places in Rawalpindi, Gujranwala, Mardan, Peshawar divisions and Islamabad. Cold and dry weather is expected elsewhere in the country.

THURSDAY
14-12-2017

Rain-thunderstorm with snowfall over the hills is expected at scattered places in Malakand, Hazara divisions, Gilgit-Baltistan and Kashmir, while at isolated places in Rawalpindi, Gujranwala, Mardan,

Peshawar divisions and Islamabad. Cold and dry weather is expected elsewhere in the country.

FRIDAY
15-12-2017

Mainly cold and dry weather is expected in most parts of the country. However, rain-thunderstorm is expected at isolated places in Malakand, Hazara, Rawalpindi, Gujranwala divisions, Gilgit-Baltistan and Kashmir.

SATURDAY
16-12-2017

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

SUNDAY
17-12-2017

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

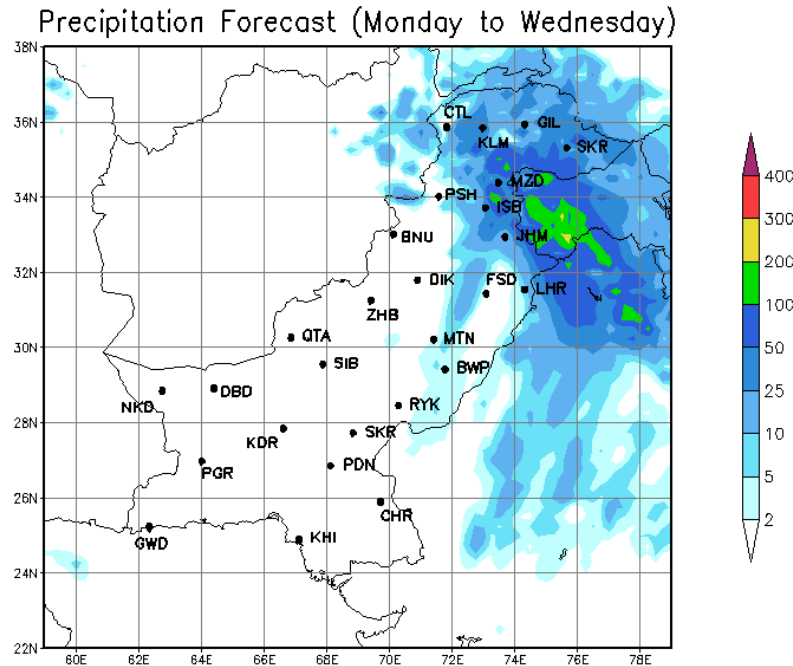
ADVISES FOR FARMERS

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

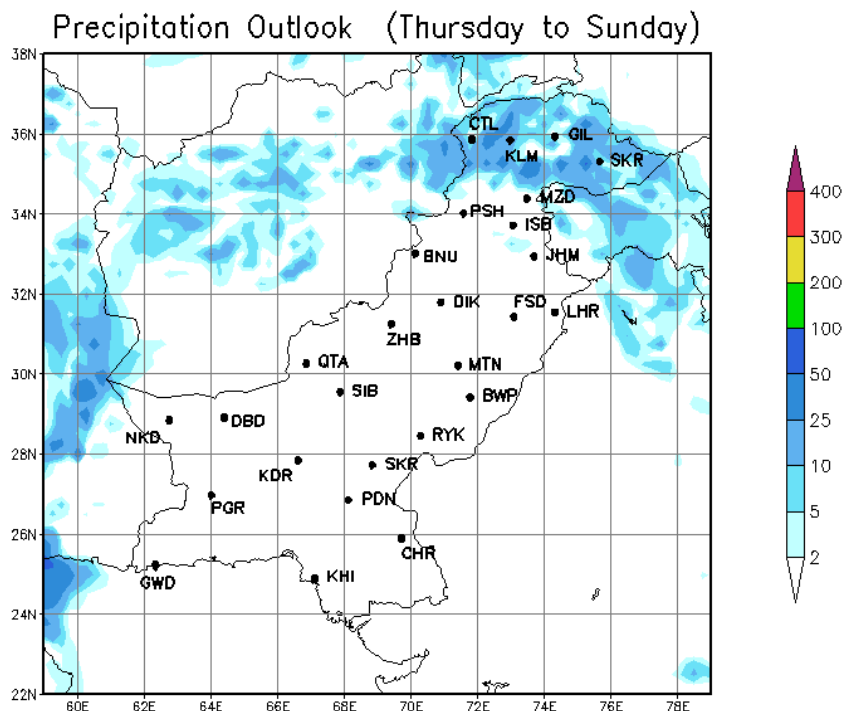
- Necessary precautionary measures may be taken to protect crops/nurseries from effects of severe weather.
- Farmers are advised to complete sowing the late varieties of Rabi crops to utilize the available moisture.

Weather Outlook from 11th to 17th December, 2017

The outlook for the period 11th to 13th December, 2017 shows that moderate to heavy rainfall (with isolated very heavy downpours over a few places in Kashmir) is expected in most parts of the Gilgit-Baltistan and Kashmir. While light to moderate rainfall is expected at scattered place in upper KP and Punjab.



The outlook for the period 14th to 17th December, 2017 shows that cold and dry weather is expected in most parts of the country however light rainfall is expected at scattered places in G.B, Kashmir and upper KP.



National Weather Data of Selected Cities (4th to 10th 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	-0.5	-2.0	4.7	34	1.00	3.0	3.2	1.1	3.3
Badin	13.1	12.0	101.2	48	0.00	1.8	2.0	2.7	2.3
Bahawalnagar	7.6	5.5	80.1	58	0.01	1.6	2.7	0.0	2.0
Bahawalpur	6.7	4.2	76.3	61	12.50	1.0	2.3	0.0	0.3
Balakot	2.2	1.1	50.3	56	0.01	1.6	1.5	0.3	0.0
Bannu	5.0	4.0	64.0	40	0.00	0.7	0.5	0.9	0.3
Barkhan	3.1	2.0	46.8	21	3.00	0.0	1.2	2.3	0.3
Bunji	2.9	1.4	30.8	36	0.00	2.3	4.3	0.3	1.7
Cherat	5.0	4.0	37.5	51	0.00	1.4	1.2	5.1	4.0
Chhor	9.6	6.3	99.8	46	0.00	2.0	3.5	0.9	5.7
Chilas	4.4	3.5	39.1	32	0.00	2.1	2.5	1.1	2.3
Chitral	-1.6	-3.0	2.8	52	0.00	1.3	3.3	1.7	4.7
D.G.Khan	4.4	3.2	67.4	51	2.40	0.7	1.5	3.1	3.7
D.I.Khan	6.1	3.5	78.5	47	0.01	0.4	0.5	1.4	1.0
Dalbandin	-3.8	-6.0	7.3	34	0.00	0.9	0.0	0.9	4.7
Dir	-2.9	-4.5	22.8	51	0.00	2.1	2.3	0.0	1.3
Drosh	0.6	-1.0	20.7	28	0.00	1.9	3.2	0.0	10.3
Faisalabad	4.6	2.0	69.4	59	2.20	6.0	0.0	0.0	0.5
Gari dopatta	4.0	3.3	51.4	66	0.80	0.9	2.0	0.3	1.3
Gawader	9.1	8.0	67.9	30	0.00	0.0	0.0	5.7	8.8
Gilgit	-3.3	-5.0	12.4	63	0.00	2.6	3.8	0.0	0.0
Gupis	-2.9	-4.0	***	38	0.00	1.9	2.0	1.4	2.3

Hyderabad	12.6	9.0	95.3	37	0.00	2.3	1.5	7.4	13.0
Islamabad	2.9	2.0	54.4	68	0.00	1.3	0.7	0.0	0.0
Jacobabad	7.6	6.0	76.0	46	0.10	1.1	1.5	0.9	0.7
Jhang	4.7	2.7	71.3	64	2.00	1.3	2.0	0.3	0.3
Jhelum	5.0	3.9	67.4	64	0.01	1.7	2.3	0.0	0.0
Jiwani	11.7	10.0	88.1	26	0.00	0.4	0.3	3.1	7.3
Kakul	2.0	1.0	40.5	54	0.01	1.6	1.0	0.0	0.3
Kalam	-3.8	-6.0	6.4	62	0.00	1.9	2.7	0.0	0.0
Kalat	-7.6	-12.0	***	35	0.00	0.3	0.0	0.3	2.0
Karachi	12.5	8.6	106.9	18	0.00	1.1	1.5	2.9	10.0
Khanpur	5.1	3.0	71.5	64	13.60	1.3	2.8	0.0	1.0
Khuzdar	2.0	1.0	39.9	36	0.00	0.0	1.3	0.0	2.3
Kotli	5.1	4.0	68.9	60	2.00	2.0	1.8	0.0	0.0
Lahore	8.3	6.8	79.8	50	0.60	1.4	2.5	0.0	0.7
Larkana	6.2	3.0	74.7	48	3.00	1.4	1.5	1.7	3.3
Lasbella	7.9	6.0	92.0	27	0.01	0.6	1.2	1.4	1.3
Lower Dir	0.9	-0.5	35.4	71	0.00	1.6	1.8	0.3	2.0
M.B Din	6.1	5.0	67.4	66	0.00	0.7	2.0	0.0	0.3
Malam Jabba	0.2	-1.0	***	52	2.40	2.0	3.0	0.0	0.0
Mangla	5.0	3.8	68.1	54	0.01	1.9	2.5	0.0	0.0
Mir Khani	1.6	0.5	53.4	43	0.00	2.7	3.0	0.6	2.2
Moinjodaro	4.4	3.0	***	56	0.00	1.3	1.2	1.7	4.7
Multan(PBO)	7.0	4.8	75.4	74	9.70	1.0	2.7	0.9	2.0
Murree	4.1	2.2	33.1	42	0.00	1.1	1.7	2.6	1.3
Muzaffarabad	4.2	4.0	51.3	55	0.01	1.4	1.2	0.0	0.0
Nawabshah	7.8	7.0	83.7	51	0.00	1.7	1.7	3.9	7.7

Nokkundi	1.3	-1.5	31.0	23	0.00	0.5	0.0	2.3	6.3
Okara	7.0	5.8	75.7	65	3.00	1.1	1.8	0.0	0.7
Padidan	7.4	5.0	77.8	54	0.00	0.4	1.0	0.9	2.3
Panjgur	0.7	-1.0	29.3	43	0.00	0.0	0.0	10.6	15.7
Parachinar	-1.7	-2.5	12.2	38	0.00	0.8	1.3	4.3	7.5
Pasni	11.4	8.0	86.3	34	0.00	0.4	0.0	7.1	10.2
Pattan	5.5	5.0	61.5	47	0.00	1.1	1.3	0.3	0.0
Peshawar	4.6	3.5	62.1	70	0.00	1.7	1.2	0.0	2.3
Quetta	-2.3	-6.2	5.1	29	0.00	0.6	1.4	2.3	2.5
Rahim Yar Khan	6.6	5.2	77.5	61	19.90	1.6	1.3	0.6	1.3
Rawalakot	0.9	-1.0	27.0	64	2.20	1.9	1.3	0.0	0.3
Rawalpindi	3.9	2.7	60.1	72	0.00	1.0	1.0	0.1	1.0
Rohri	8.7	7.0	79.9	51	0.00	1.3	1.0	0.9	2.0
Sahiwal	7.2	6.0	73.3	56	8.00	1.3	2.5	1.1	2.0
Saidu Sharif	2.2	0.7	40.8	60	0.00	1.9	1.8	0.0	0.0
Sialkot	5.4	4.3	74.4	70	2.00	1.1	3.5	0.0	0.0
Sibbi	4.4	2.0	74.0	52	0.00	0.0	1.0	0.6	0.7
Skardu	-4.5	-6.7	***	59	0.00	3.4	4.3	0.0	0.0
Tandojam	7.3	5.0	75.5	57	0.00	1.1	0.2	0.6	2.5
Usta. M	6.8	5.5	71.8	64	Trace*	1.1	1.3	1.7	1.7
Zhob	0.3	-2.0	21.8	31	0.01	0.3	0.8	1.6	4.8

*** 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)