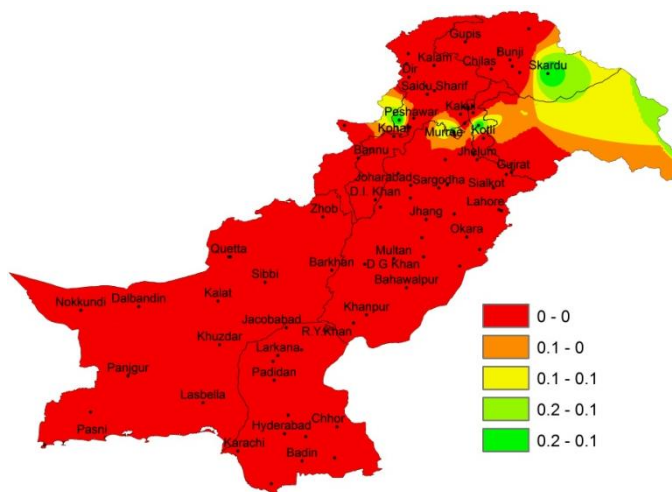


# Weekly Weather and Crop Bulletin for Pakistan

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Rainfall Distribution (mm) during the

Previous Week (from 28<sup>th</sup> November to 4<sup>th</sup> December, 2016)

## Contents

Highlights of past weather (General)	1-2
Past weather for Agri Plains	3-4
Crop progress	4
Min Temperature maps	5
R.H and GDD	6
Wind speed maps	7
Cloudiness maps	8
Farmers advisory	9
Weather Outlook	10
National data for selected stations	11-13
AgMIP findings	14

## Highlights of Past Weather (from 28<sup>th</sup> November to 4<sup>th</sup> December, 2016)

Slightly above normal night temperatures reported from most parts of the country.

Province wise distribution of rainfall reported as follows:

- Light rainfall reported from isolated places of Khyber Pakhtunkhwa, Punjab, Gilgit-Baltistan and Azad Jammu & Kashmir.
- Whereas, dry weather was reported from the rest of the country.

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

**Editor-in-Chief: Dr. Azmat Hayat Khan (Director)**

**Editor: Asma Jawad Hashmi (Deputy Director)**

## Past Weather of Provinces (from 28<sup>th</sup> November to 4<sup>th</sup> December, 2016)

### Punjab

Light rainfall was reported from a single station Islamabad as 0.1mm during the week. Weekly maximum and minimum temperatures recorded as 27.0°C & 9.5°C respectively. For the present season on average 92.9 growing degree days were accumulated by the end of the last week. Average relative humidity recorded as 63% and wind speed in the morning/evening recorded as 0.5/0.6 Knots. During the previous week the lowest minimum temperature was recorded as 4.4°C at Islamabad.

### Sindh

Dry weather reported from Sindh during the week. Weekly maximum and minimum temperatures recorded as 30.8°C & 13.6°C respectively. For the present season, on average 120.4 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 58% and wind speed in the morning/evening recorded as 1.1/1.7 Knots. During the previous week the lowest minimum temperature recorded as 6.8°C at Mithi.

### Khyber Pakhtunkhwa

Light rainfall was reported from a single station Peshawar as 0.1mm during the week. Weekly maximum and minimum temperatures recorded as 21.7°C & 5.9°C respectively. For the present season on average 61.6 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 0.9/1.5 Knots. During the previous week the lowest minimum temperature recorded as -1.5°C at Kalam.

### Balochistan

Dry weather reported in Balochistan during the week. Weekly maximum and minimum temperatures recorded as 26.8°C & 8.4°C respectively. For the present season on average 88.2 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 45% and wind speed in the morning/evening recorded as 1.3/3.1 Knots. During the previous week the lowest minimum temperature was recorded as -4.0°C at Kalat.

### Gilgit-Baltistan and Azad Jammu & Kashmir

Light rainfall was reported from isolated places (Rawalakot and Skardu = 0.1mm) in Gilgit-Baltistan & Kashmir regions during the week. Weekly maximum and minimum temperatures recorded as 17.2°C & 2.3°C respectively. For the present season on average 33.1 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 51% and wind speed in the morning/evening recorded as 0.7/0.5 Knots. During the previous week the lowest minimum temperature recorded as -5.7°C at Skardu.

**Past Weather for Major Agricultural Plains  
(from 28<sup>th</sup> November to 4<sup>th</sup> December, 2016)**

**Rawalpindi (Potohar region)**

Dry weather was reported during the week; cloudiness in the morning/evening recorded as 1.6/1.9 Oktas while, average relative humidity observed as 67%. Mean night time temperature recorded as 6.8°C & for the present season 77.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.2/0.3 Knots.

**Faisalabad (Central Punjab)**

Dry weather was reported during the week; however cloudiness in the morning/evening recorded as 0.6/0.4 Oktas while, average relative humidity observed as 61%. Mean night time temperature recorded as 8.8°C & for the present season 95.7 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.2/0.0 Knots.

**Tandojam (Lower Sindh)**

Dry weather was reported during the week; however cloudiness in the morning/evening recorded as 0.0/0.0 Oktas while, average relative humidity observed as 68%. Mean night time temperature recorded as 12.5°C & for the present season 115.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.8/0.3 Knots.

**Quetta (Northern Baluchistan)**

Dry weather was reported during the week; however cloudiness in the morning/evening recorded as 0.1/0.7 Oktas while, average relative humidity observed as 38%. Mean night time temperature recorded as 3.3°C & for the present season 43.6 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.6/2.4 Knots.

**Usta Muhammad (Eastern Balochistan)**

Dry weather was reported during the week; however cloudiness in the morning/evening recorded 0.0/0.0 Oktas while, average relative humidity observed as 59%. Mean night time temperature recorded as 11.8°C & for the present season 111.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.0 Knots.

**Past Weather for Sub-Regional Agricultural  
Plains (from 28<sup>th</sup> November to 4<sup>th</sup> December,  
2016)**

**Multan**

Dry weather was reported during the week; however cloudiness in the morning/evening recorded as 0.4/0.3 Oktas while, average relative humidity observed as 64%. Mean night time temperature recorded as 12.0°C & for the present season 102.6 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 was reported during the week; however cloudiness in the morning/evening recorded as 1.3/1.7 Oktas while, average relative humidity observed as 63%. Mean night time temperature recorded as 10.6°C & for the present season 93.9 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.3/0.6 Knots.

**Zhob**

Dry weather was reported during the week; however cloudiness in the morning/evening recorded as 0.3/0.0 Oktas while, average relative humidity observed as 38%. Mean night time temperature recorded as 4.6°C & for the present season 63.5 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 2.9/3.6 Knots.

**D.I. Khan**

Dry weather was reported during the week; cloudiness in the morning/evening recorded as 2.9/0.0 Oktas while, average relative humidity observed as 71%. Mean night time temperature recorded as 9.8°C & for the present season 96.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.6/0.3 Knots.

**Peshawar**

Rainfall was reported 0.1mm during the week; cloudiness in the morning/evening recorded as 2.9/3.0 Oktas while, average relative humidity observed as 59%. Mean night time temperature recorded as 7.6°C & for the present season 90.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.3 Knots.

**Murree**

Dry weather was reported during the week; cloudiness in the morning/evening recorded as 1.4/1.7 Oktas while, average relative humidity observed as 40%. Mean night time temperature recorded as 9.0°C & for the present season 61.4 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.7/1.7 Knots.

**Kalam**

Dry weather was reported during the week, cloudiness in the morning/evening recorded as 2.9/3.4 Oktas while, average relative humidity observed as 46%. Mean night time temperature recorded as -0.4°C & for the present season 22.0 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 was reported during the week, cloudiness in the morning/evening recorded as 4.6/6.1 Oktas while, average relative humidity observed as 62%. Mean night time temperature recorded as 0.1°C & for the present season 27.5 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.0 Knots.

**Skardu**

Rainfall was reported 0.1mm during the week; cloudiness in the morning/evening recorded as 4.4/5.0 Oktas while, average relative humidity observed as 61%. Mean night time temperature recorded as -3.4°C by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.3 Knots.

**Crop Situation for Major Agricultural Plains  
(Based on data from Regional Agromet Centres)****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.

**Wheat:** Good condition at *Emergence* stage.

**Lower Sindh (Tandojam)**

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

**Wheat (Imdad):** Good condition at 3<sup>rd</sup> leaf stage.

**Northern Balochistan (Quetta)**

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

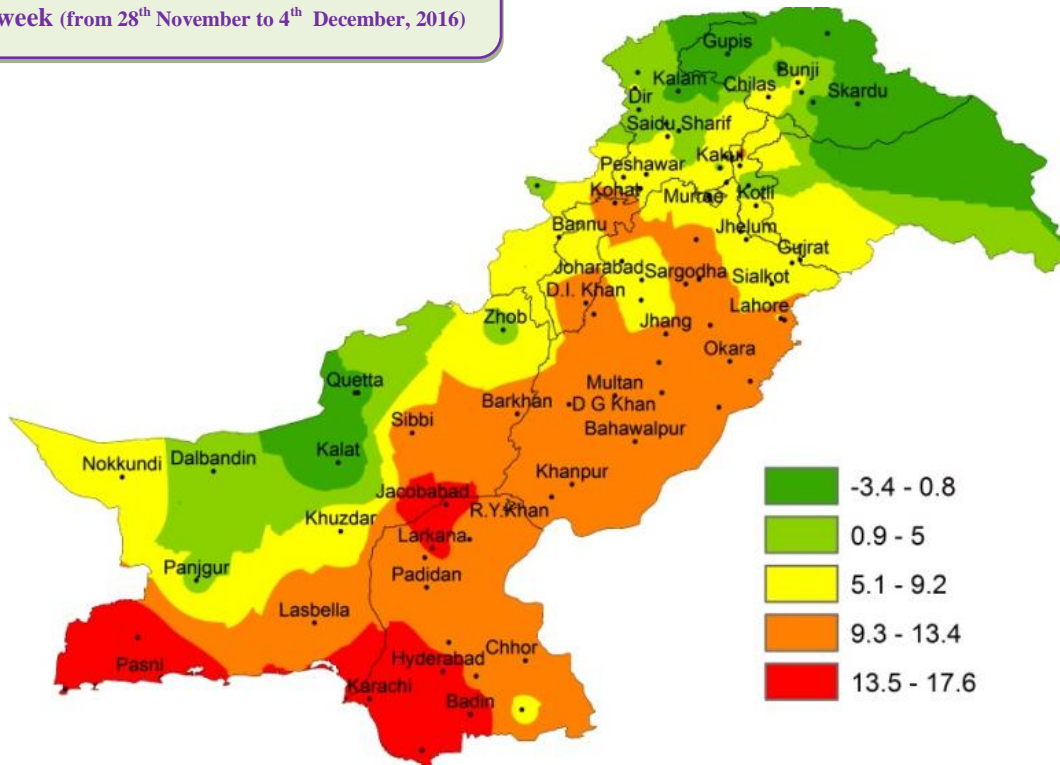
**Wheat:** Good condition at *Emergence* stage.

**Eastern Balochistan (Usta Muhammad)**

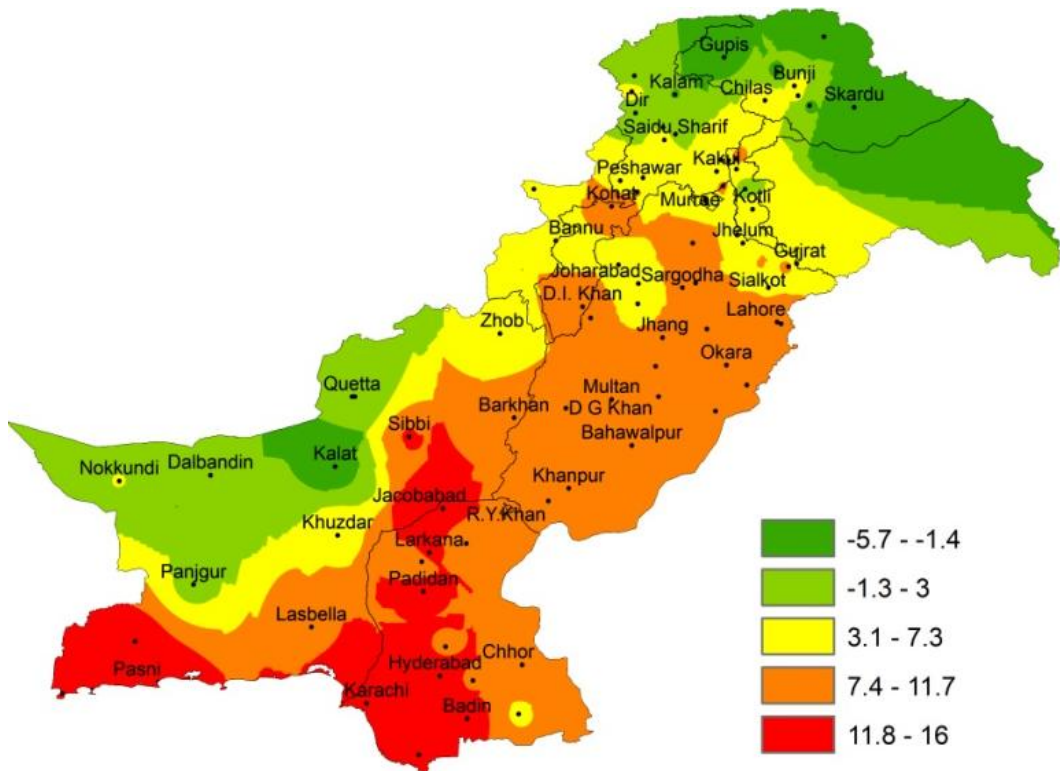
There is presently one crop (irrigated conditions) grown in the fields of RAMC Usta Muhammad.

**Wheat:** Good condition at 2<sup>nd</sup> leaf stage.

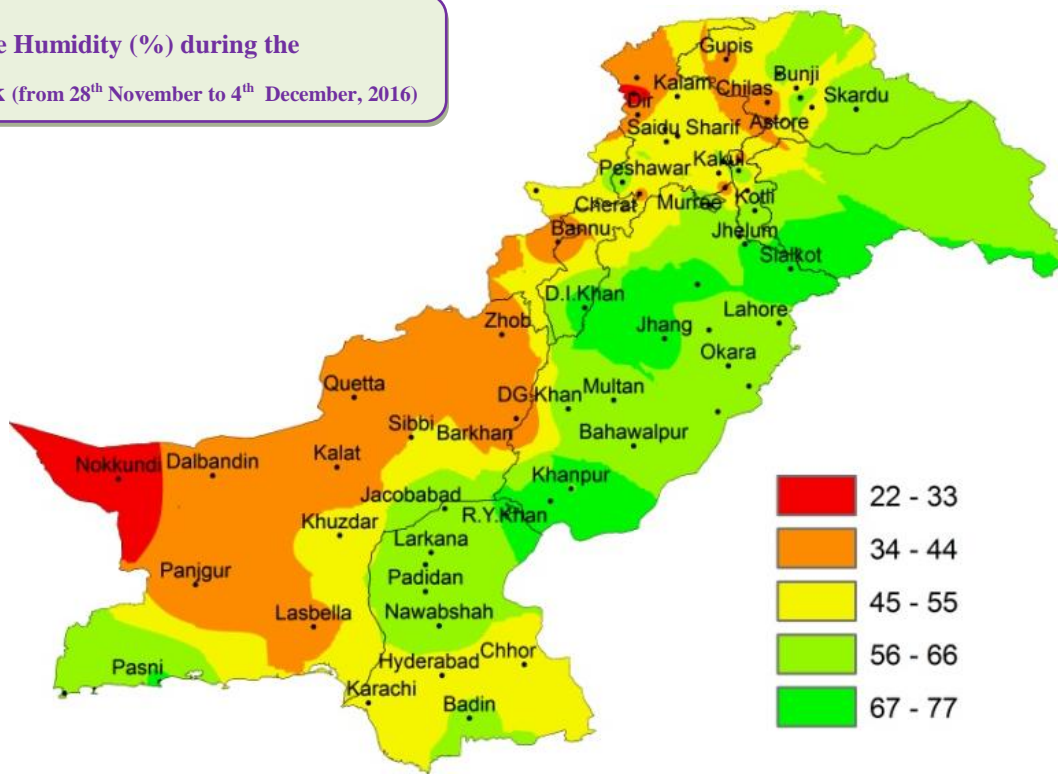
Mean lowest Temperature (°C) during the Previous week (from 28<sup>th</sup> November to 4<sup>th</sup> December, 2016)



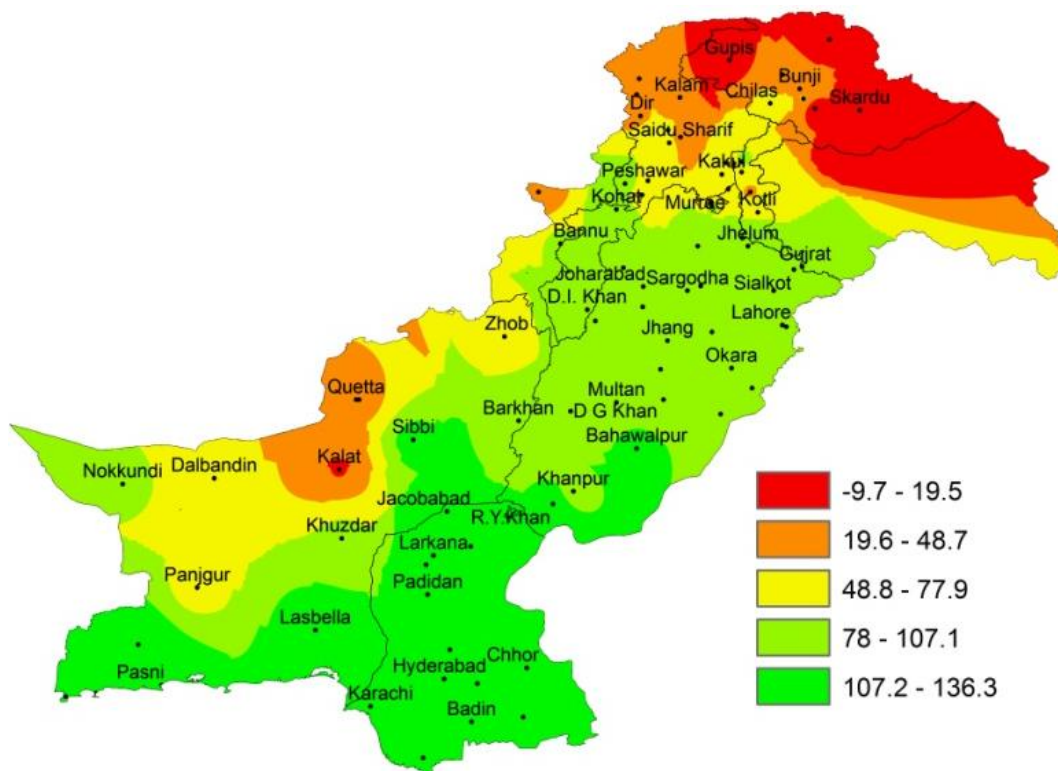
Lowest Minimum Temperature (°C) during the Previous week (from 28<sup>th</sup> November to 4<sup>th</sup> December, 2016)



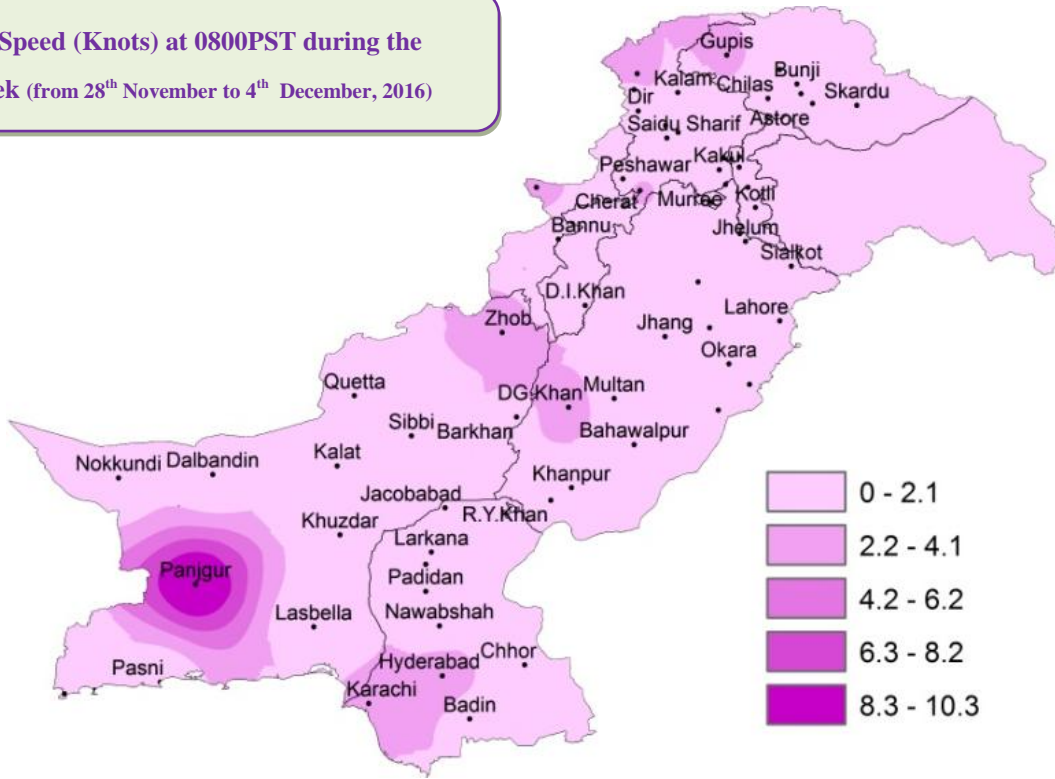
Mean Relative Humidity (%) during the Previous week (from 28<sup>th</sup> November to 4<sup>th</sup> December, 2016)



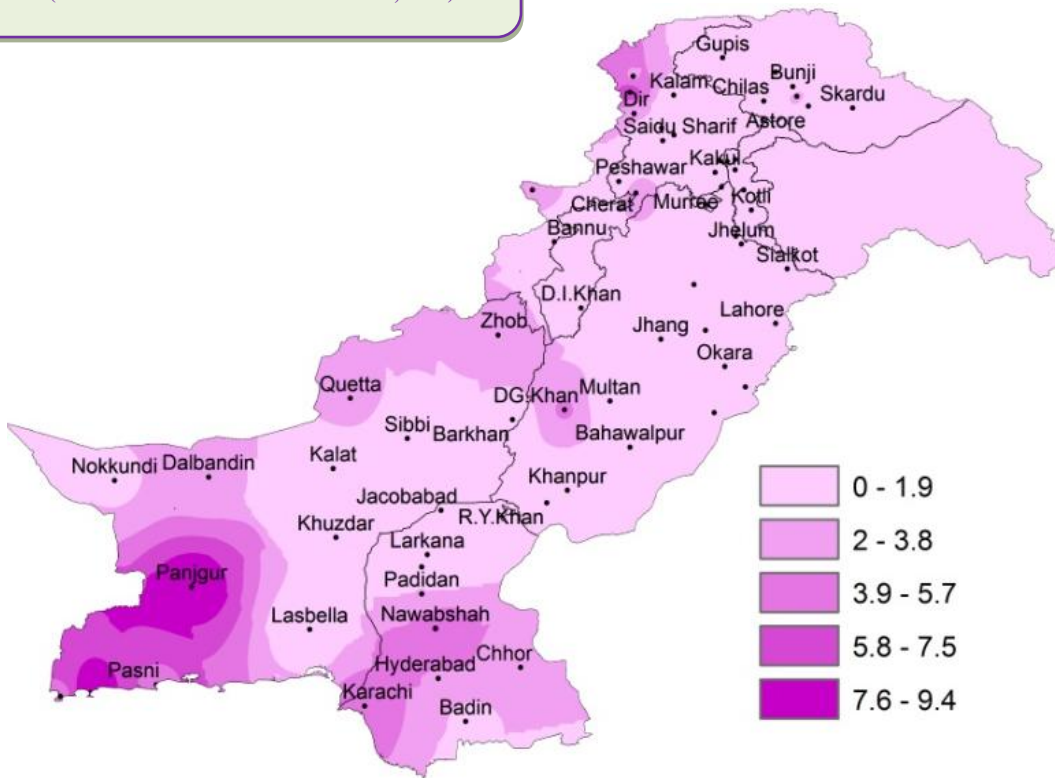
Total Growing Degree Days accumulated during the Previous week (from 28<sup>th</sup> November to 4<sup>th</sup> December, 2016)



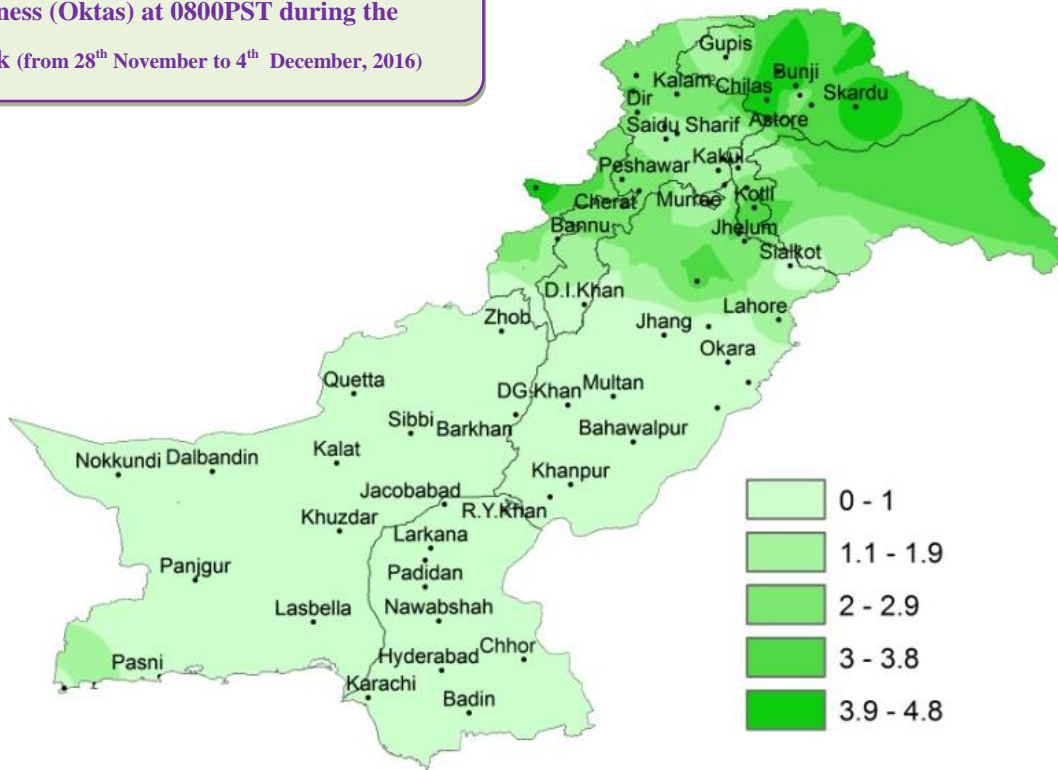
Mean Wind Speed (Knots) at 0800PST during the Previous week (from 28<sup>th</sup> November to 4<sup>th</sup> December, 2016)



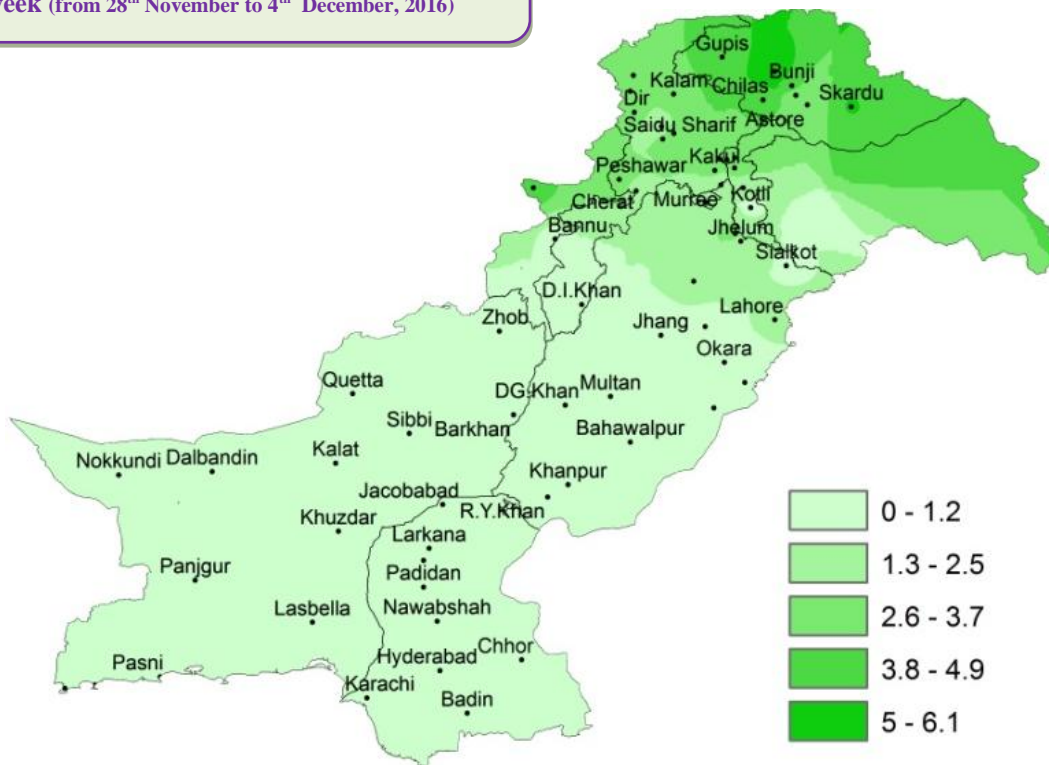
Mean Wind Speed (Knots) at 1200PST during the Previous week (from 28<sup>th</sup> November to 4<sup>th</sup> December, 2016)



Mean Cloudiness (Oktas) at 0800PST during the Previous week (from 28<sup>th</sup> November to 4<sup>th</sup> December, 2016)



Mean Cloudiness (Oktas) at 1200 PST during the Previous week (from 28<sup>th</sup> November to 4<sup>th</sup> December, 2016)





**Weekly Weather Advisory for Farmers****(From 5<sup>th</sup> to 11<sup>th</sup> December, 2016)**

Continental winds would prevail over most parts of the country. A fresh westerly wave is likely to enter upper parts of the country on Friday (night) and likely to persist during next 48 hours.

**MONDAY  
05-12-2016**

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

**TUESDAY  
06-12-2016**

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

**WEDNESDAY  
07-12-2016**

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

**THURSDAY  
08-12-2016**

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

**FRIDAY  
09-12-2016**

Mainly cold and dry weather is expected in most parts of the country. However, rain-thunderstorm with snowfall over the hills is expected at isolated places in Malakand division and Gilgit-Baltistan. Foggy conditions are likely to prevail over plain

areas of Punjab and upper Sindh during morning hours.

**SATURDAY  
10-12-2016**

Mainly cold and dry weather is expected in most parts of the country. However, rain-thunderstorm with snowfall over the hills is expected at isolated places in Malakand, Hazara, Peshawar, Rawalpindi, Gujranwala divisions, FATA, Kashmir & Gilgit-Baltistan. Foggy conditions are likely to prevail over plain areas of Punjab and upper Sindh during morning hours.

**SUNDAY  
11-12-2016**

Rain-thunderstorm with snowfall over the hills is expected at scattered places in Malakand, Hazara, Peshawar, Rawalpindi, Gujranwala, Lahore divisions, Islamabad, FATA, Kashmir and Gilgit-Baltistan. Foggy conditions are likely to prevail over plain areas of Punjab and upper Sindh during morning hours. Cold and dry weather elsewhere in the country.

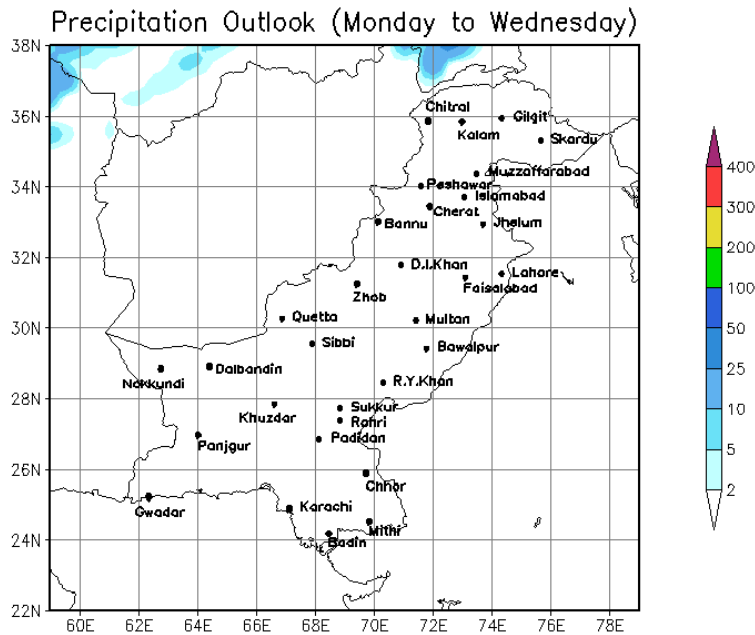
**ADVISES FOR CROPS**

During the last two months mainly dry weather has been reported for most of the agricultural plains of the country and is likely to prevail by mid of December. Keeping in view the present and expected dry atmospheric soil conditions following advises are suggested for farming community especially for rainfed areas of KP and Punjab.

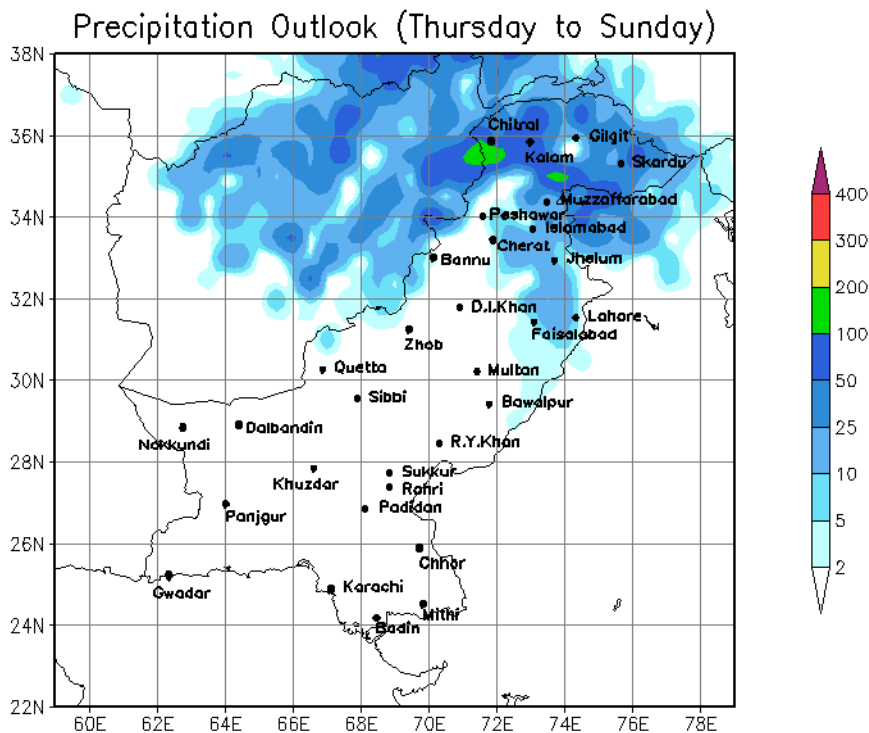
- Farmers of rainfed areas obtaining water through tube wells are advised to schedule the irrigation as per crop requirement.
- In areas like Potohar region and adjoining areas of KP where rain water storages are available. Farmers are advised to irrigate crops by using available irrigation methods like sprinkler irrigation etc.
- Farmers are advised to complete sowing of wheat crop. Late varieties may be cultivated in early December but seed should be specially treated before sowing in consultation with Agricultural offices in the specified regions.
- Farmers are advised to cultivate winter vegetables in time.

## Weather Outlook from 5<sup>th</sup> to 11<sup>th</sup> December, 2016

The outlook from 5<sup>th</sup> to 7<sup>th</sup> December, 2016 shows that dry weather is expected in most parts of the country.



The outlook from 8<sup>th</sup> to 11<sup>th</sup> December, 2016 shows that light to moderate rainfall is expected in Kashmir & Gilgit-Baltistan, upper KB and isolated places in upper and central Punjab.



**National Weather Data of Selected Cities**  
**(Weekly Data from 28<sup>th</sup> November to 4<sup>th</sup> December, 2016)**

Stations	Maximum/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	-0.9	-2.5	-1.8	49	0.0	3.4	3.0	0.6	0.9
Badin	16.3	14.5	131.0	57	0.0	0.0	0.0	1.4	1.4
Bahawalnagar	10.1	7.9	103.7	56	0.0	0.0	0.0	0.0	0.6
Bahawalpur	11.9	11.1	110.0	66	0.0	0.0	0.0	0.0	0.0
Balakot	5.7	4.4	66.4	58	0.0	1.7	3.6	1.0	0.0
Bannu	7.0	6.0	82.9	39	0.0	1.7	0.9	0.3	0.0
Barkhan	10.5	9.5	93.5	34	0.0	0.0	0.0	1.4	0.6
Bunji	5.9	4.4	44.7	43	0.0	4.9	4.6	0.6	0.3
Cherat	9.4	7.5	62.8	43	0.0	2.4	2.1	2.6	2.9
Chhor	11.1	9.5	117.8	53	0.0	0.1	0.0	0.3	2.0
Chilas	6.9	6.5	58.6	34	0.0	4.3	4.3	0.3	0.6
Chitral	3.2	1.0	42.2	44	0.0	2.0	3.0	3.7	3.4
D.I.Khan	9.8	9.0	96.8	71	0.0	0.9	0.0	0.6	0.3
Dalbandin	2.6	0.0	65.0	41	0.0	0.0	0.4	0.0	2.3
DG.Khan	10.8	10.0	99.6	60	0.0	0.0	0.0	3.7	4.0
Dir	0.7	0.0	47.3	43	0.0	2.1	3.0	0.0	2.0
Drosh	5.4	4.6	47.0	22	0.0	3.1	3.7	1.4	7.1
Faisalabad	8.8	7.5	95.7	61	0.0	0.6	0.4	0.2	0.0
Garidopatta	5.4	4.8	60.0	67	0.0	1.4	3.0	0.0	0.3
Gawader	16.7	16.0	129.8	59	0.0	1.4	0.6	0.6	9.4
Gilgit	0.1	-2.5	27.5	62	0.0	4.4	6.1	0.0	0.0
Gupis	-1.6	-3.0	3.0	43	0.0	1.1	4.1	2.9	1.7

Hyderabad	16.3	15.0	130.1	51	0.0	0.0	0.0	3.1	3.7
Islamabad	5.6	4.4	71.4	67	0.1	1.4	1.9	0.0	0.0
Jacobabad	13.6	13.0	113.0	64	0.0	0.6	0.0	0.0	0.0
Jhang	9.3	8.5	101.2	69	0.0	0.0	0.0	0.0	0.0
Jhelum	8.5	7.2	85.5	72	0.0	2.6	2.0	0.0	0.0
Jiwani	17.6	14.0	130.8	60	0.0	0.9	0.9	0.9	4.9
Kakul	4.6	4.0	55.0	47	0.0	1.9	2.6	0.0	0.3
Kalam	-0.4	-1.5	22.0	46	0.0	2.9	3.4	0.0	0.0
Kalat	-2.9	-4.0	18.3	38	0.0	0.0	0.0	0.0	0.6
Karachi	16.3	15.5	136.4	49	0.0	0.9	0.0	2.6	4.9
Khanpur	10.6	9.7	105.1	66	0.0	0.0	0.0	0.0	0.0
Khuzdar	7.7	6.0	85.3	46	0.0	0.0	0.0	0.0	0.9
Kotli	7.1	6.0	76.7	62	0.0	3.1	0.9	0.9	0.3
Lahore	10.6	10.0	93.9	63	0.0	1.3	1.7	0.3	0.6
Larkana	14.5	13.0	120.0	58	0.0	0.0	0.6	0.6	0.3
Lasbella	12.0	11.0	126.3	43	0.0	0.0	0.0	0.0	0.0
Lower Dir	4.1	2.5	57.0	55	0.0	1.6	1.3	0.6	0.3
M.B Din	9.8	8.0	88.6	68	0.0	3.0	2.3	0.0	0.0
Malam Jabba	3.4	2.0	21.8	51	0.0	1.9	3.7	0.6	0.0
Mangla	7.7	6.1	85.5	54	0.0	3.0	2.9	1.4	0.6
Mir Khani	4.9	3.8	51.9	71	0.0	1.3	2.6	0.0	2.6
Moinjodaro	11.9	10.0	109.8	66	0.0	0.0	0.0	0.6	0.7
Multan	12.0	11.5	102.6	64	0.0	0.4	0.3	0.0	0.6
Murree	9.0	8.0	61.4	40	0.0	1.4	1.6	1.7	1.7
Muzaffarabad	6.7	5.5	65.7	55	0.0	1.4	2.4	0.6	0.3
Nokkundi	7.4	3.0	82.0	27	0.0	0.0	0.6	0.3	1.4

Okara	11.6	10.5	102.7	65	0.0	0.1	0.1	0.3	0.6
Padidan	13.1	12.5	113.5	61	0.0	0.3	0.4	0.6	2.0
Panjgur	4.4	1.5	64.5	34	0.0	0.0	0.3	10.3	9.1
Parachinar	4.3	4.0	20.5	47	0.0	4.4	4.4	3.0	3.0
Pasni	16.7	15.5	132.0	67	0.0	0.0	0.9	0.3	5.1
Pattan	10.6	9.0	89.0	35	0.0	0.7	3.0	1.7	1.4
Peshawar	7.6	6.5	90.0	59	0.1	2.9	3.0	0.0	0.3
Quetta	3.3	2.5	43.6	38	0.0	0.1	0.7	0.6	2.4
R.Y.Khan	11.7	10.8	110.7	73	0.0	0.0	0.0	1.0	0.6
RWP	6.8	6.0	77.0	67	0.0	1.6	1.9	0.2	0.3
Rawalakot	1.6	0.5	45.0	54	0.1	2.9	1.7	0.0	0.0
Sahiwal	9.4	8.0	95.0	63	0.0	0.3	0.0	0.0	0.6
Saidu Sharif	6.0	4.8	64.4	55	0.0	1.6	2.6	0.0	0.0
Sialkot	8.7	8.0	81.2	78	0.0	0.6	1.0	0.0	0.0
Sibbi	12.7	12.0	120.3	44	0.0	0.0	0.0	0.3	0.0
Skardu	-3.4	-5.7	-5.1	61	0.1	4.4	5.0	0.0	0.3
Tandojam	12.5	11.0	115.3	68	0.0	0.0	0.0	0.8	0.3
Usta.M	11.8	11.0	111.0	59	0.0	0.0	0.0	0.0	0.0
Zhob	4.6	4.0	63.5	38	0.0	0.3	0.0	2.9	3.6

\*\*\* 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)