

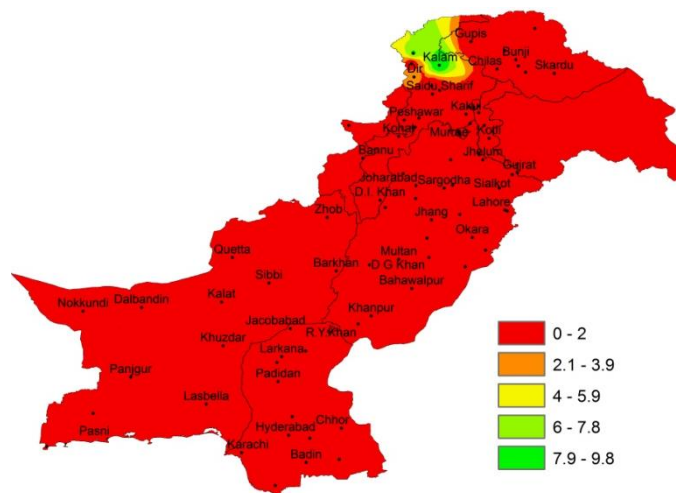
Weekly Weather and Crop Bulletin for Pakistan

**NATIONAL AGROMET CENTRE
PAKISTAN METEOROLOGICAL
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**Rainfall Distribution (mm) during the
Previous Week (from 21st to 27th November, 2016)**



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Highlights of Past Weather (from 21st to 27th November, 2016)

Slightly below normal night temperature was reported from western and northern parts of the country.

Province wise distribution of rainfall reported as follows:

- Light rainfall reported from isolated places of Khyber Pakhtunkhwa.
- 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 21st to 27th November, 2016)**Punjab**

Dry weather reported in Punjab during the week. Weekly maximum and minimum temperatures recorded as 26.8°C & 11.2°C respectively. For the present season on average 97.5 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 0.3/0.7 Knots. During the previous week the lowest minimum temperature was recorded as 5.0°C at Murree.

Sindh

Dry weather reported in Sindh during the week. Weekly maximum and minimum temperatures recorded as 30.6°C & 13.2°C respectively. For the present season, on average 119.0 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 0.7/1.6 Knots. During the previous week the lowest minimum temperature recorded as 7.8°C at Mithi.

Khyber Pakhtunkhwa

Light rainfall reported from isolated places of Khyber Pakhtunkhwa during the week. Weekly maximum and minimum temperatures recorded as 19.5°C & 7.4°C respectively. For the present season on average 59.2 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 0.5/3.9 Knots. During the previous week the lowest minimum temperature recorded as -1.0°C at Kalam.

Balochistan

Dry weather reported in Balochistan during the week. Weekly maximum and minimum temperatures recorded as 22.9°C & 7.9°C respectively. For the present season on average 72.9 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 40% and wind speed in the morning/evening recorded as 2.7/4.2 Knots. During the previous week the lowest minimum temperature was recorded as -5.0°C at Kalat.

Gilgit-Baltistan and Azad Jammu & Kashmir

Dry weather reported in Gilgit-Baltistan & Kashmir regions during the week. Weekly maximum and minimum temperatures recorded as 16.4°C & 4.6°C respectively. For the present season on average 38.5 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 54% and wind speed in the morning/evening recorded as 1.0/2.4 Knots. During the previous week the lowest minimum temperature recorded as -2.0°C at Hunza.

**Past Weather for Major Agricultural Plains
(from 21st to 27th November, 2016)****Rawalpindi (Potohar region)**

Dry weather was reported during the week; cloudiness in the morning/evening recorded as 5.7/4.3 Oktas while, average relative humidity observed as 74%. Mean night time temperature recorded as 9.7°C & for the present season 83.1 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 2.0/0.7 Oktas while, average relative humidity observed as 65%. Mean night time temperature recorded as 11.6°C & for the present season 106.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.3/0.6 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 61%. Mean night time temperature recorded as 12.0°C & for the present season 111.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.6/0.4 Knots.

Quetta (Northern Baluchistan)

Dry weather was reported during the week; however cloudiness in the morning/evening recorded as 2.3/3.7 Oktas while, average relative humidity observed as 41%. Mean night time temperature recorded as 1.8°C & for the present season 20.4 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.1/3.4 Knots.

Usta Muhammad (Eastern Balochistan)

Dry weather was reported during the week; however cloudiness in the morning/evening recorded 0.0/0.6 Oktas while, average relative humidity observed as 55%. Mean night time temperature recorded as 11.3°C & for the present season 107.4 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.3/0.6 Knots.

**Past Weather for Sub-Regional Agricultural
Plains (from 21st to 27th November, 2016)****Multan**

Dry weather was reported during the week; however cloudiness in the morning/evening recorded as 2.0/2.0 Oktas while, average relative humidity observed as 65%. Mean night time temperature recorded as 12.7°C & for the present season 103.5 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.0 Knots.

Lahore

Dry weather was reported during the week; however cloudiness in the morning/evening recorded as 3.6/3.9 Oktas while, average relative humidity observed as 58%. Mean night time temperature recorded as 12.8°C & for the present season 106.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.9/1.1 Knots.

Zhob

Dry weather was reported during the week; however cloudiness in the morning/evening recorded as 1.3/2.6 Oktas while, average relative humidity observed as 37%. Mean night time temperature recorded as 5.0°C & for the present season 55.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 2.9/2.7 Knots.

D.I. Khan

Dry weather was reported during the week; cloudiness in the morning/evening recorded as 2.4/3.9 Oktas while, average relative humidity observed as 67%. Mean night time temperature recorded as 11.4°C & for the present season 100.5 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.6/1.1 Knots.

Peshawar

Dry weather was reported during the week; cloudiness in the morning/evening recorded as 5.1/4.6 Oktas while, average relative humidity observed as 71%. Mean night time temperature recorded as 10.2°C & for the present season 84.2 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.3 Knots.

Murree

Rainfall was reported 9.8mm during the week; cloudiness in the morning/evening recorded as 6.7/5.6 Oktas while, average relative humidity observed as 70%. Mean night time temperature recorded as 1.9°C & for the present season 10.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.0 Knots.

Kalam

Dry weather was reported during the week, cloudiness in the morning/evening recorded as 0.0/0.9 Oktas while, average relative humidity observed as 51%. Mean night time temperature recorded as 0.5°C by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.6 Knots.

Gilgit

Dry weather was reported during the week, cloudiness in the morning/evening recorded as 5.9/5.7 Oktas while, average relative humidity observed as 63%. Mean night time temperature recorded as 3.5°C & for the present season 36.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.1 Knots.

Skardu

Dry weather was reported during the week; cloudiness in the morning/evening recorded as 6.6/6.3 Oktas while, average relative humidity observed as 56%. Mean night time temperature recorded as 1.6°C & for the present season 16.6 growing degree days accumulated 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 condition) grown in the fields of RAMC Faisalabad.

Wheat: it has been sowed on 24-11-2016.

Lower Sindh (Tandojam)

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

Wheat (Imdad): good condition at 3rd leaf stage.

Northern Balochistan (Quetta)

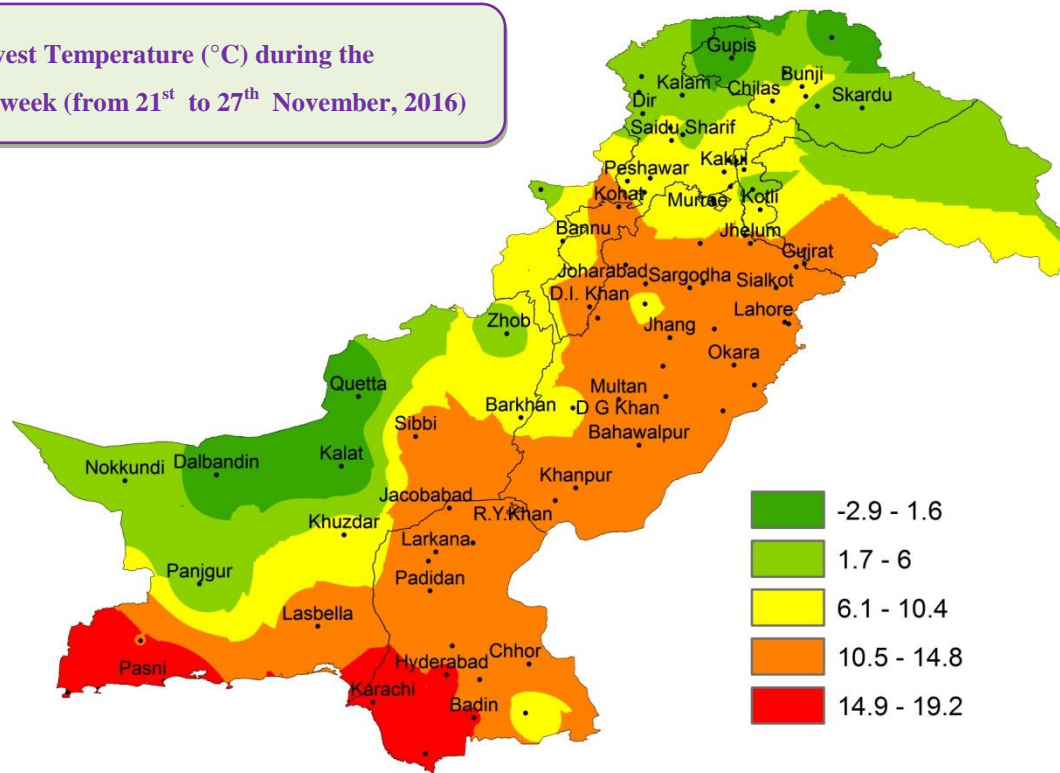
There is presently no crop grown in the fields of RAMC Quetta.

Eastern Balochistan (Usta Muhammad)

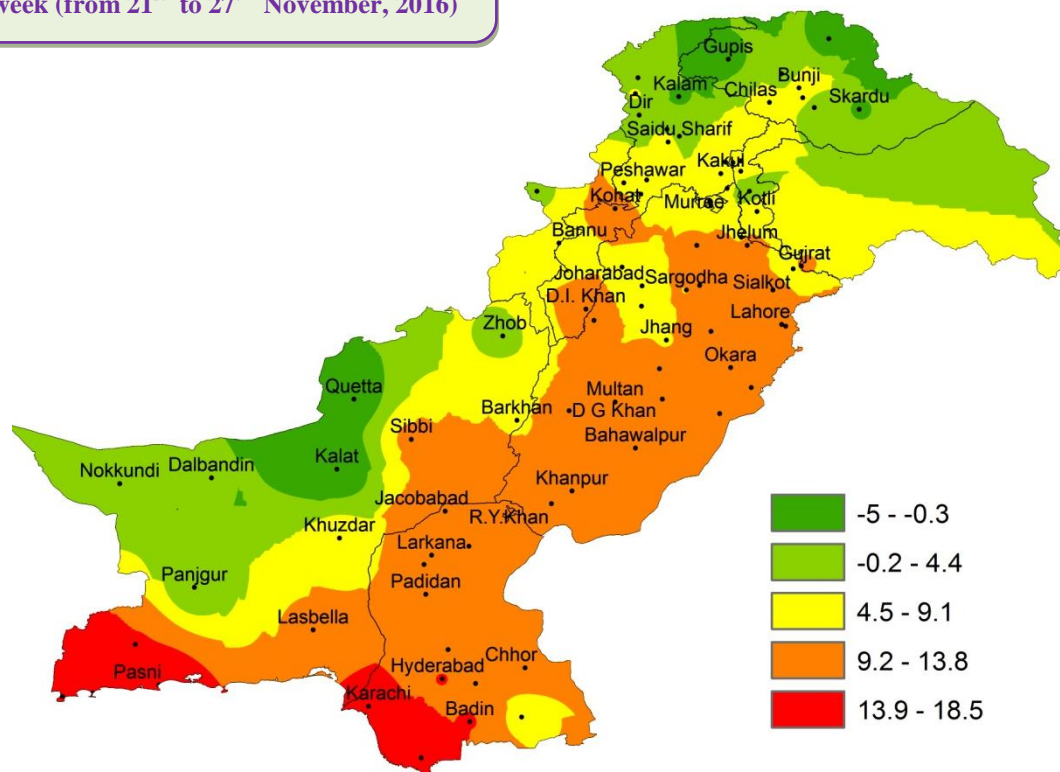
There is presently one crop (irrigated condition) grown in the fields of RAMC Usta Muhammad.

Rice: Good condition at *Harvesting* stage.

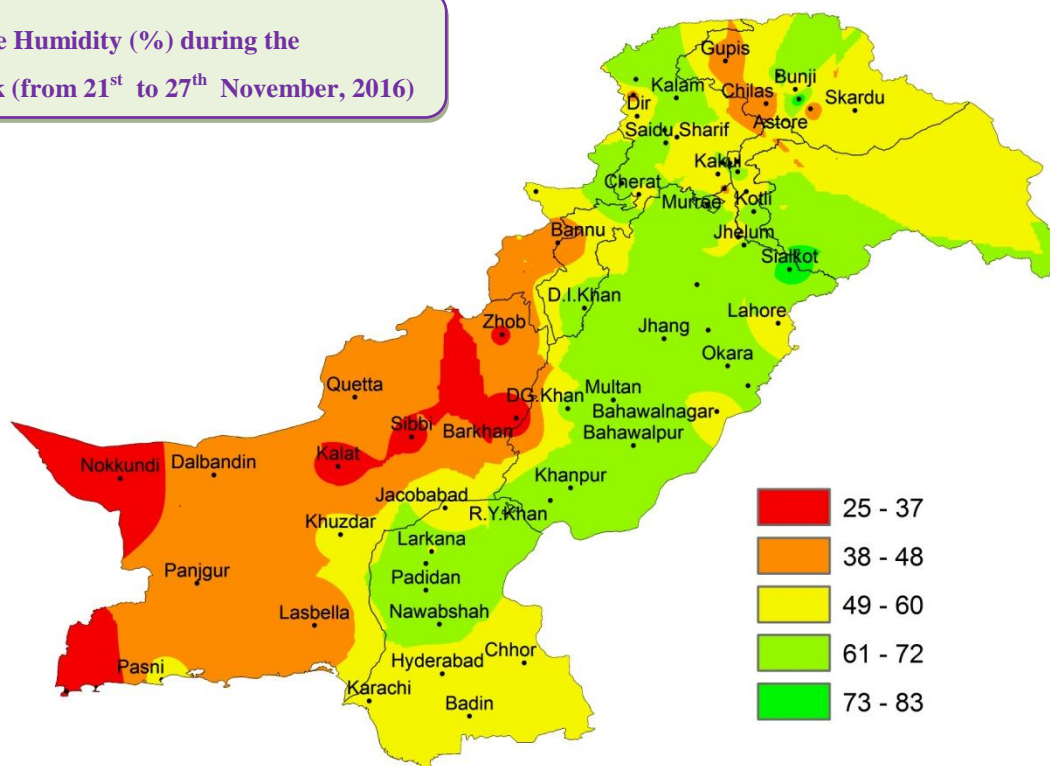
Mean lowest Temperature ($^{\circ}\text{C}$) during the
Previous week (from 21st to 27th November, 2016)



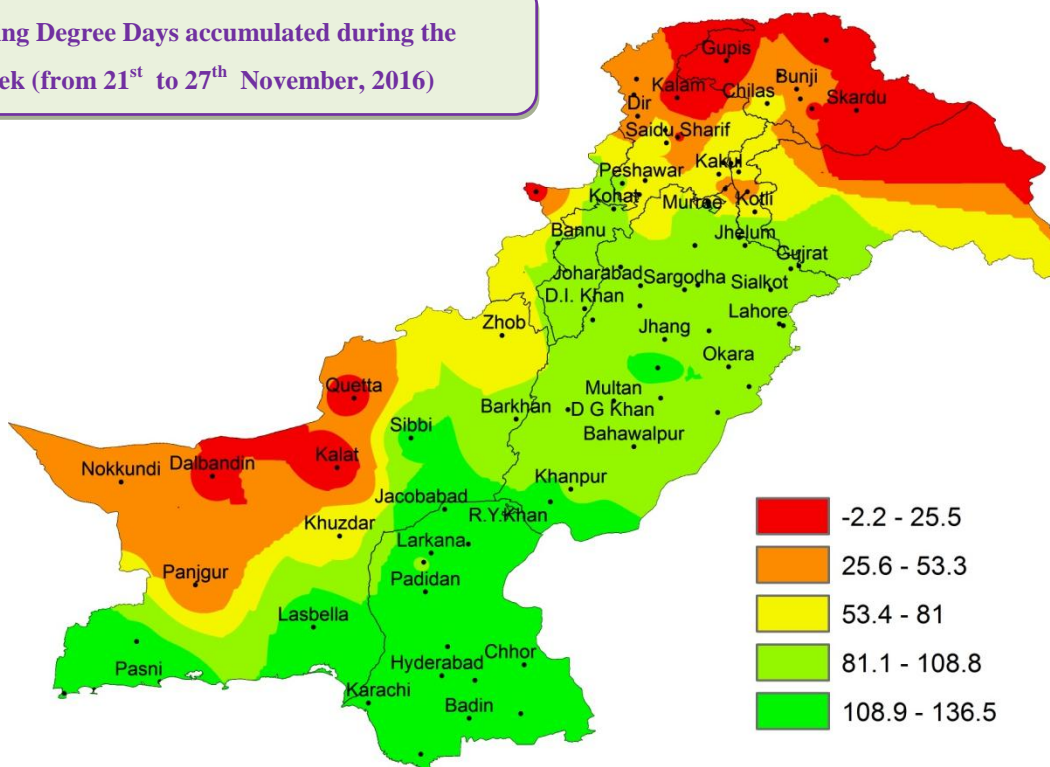
Lowest Minimum Temperature ($^{\circ}\text{C}$) during the
Previous week (from 21st to 27th November, 2016)



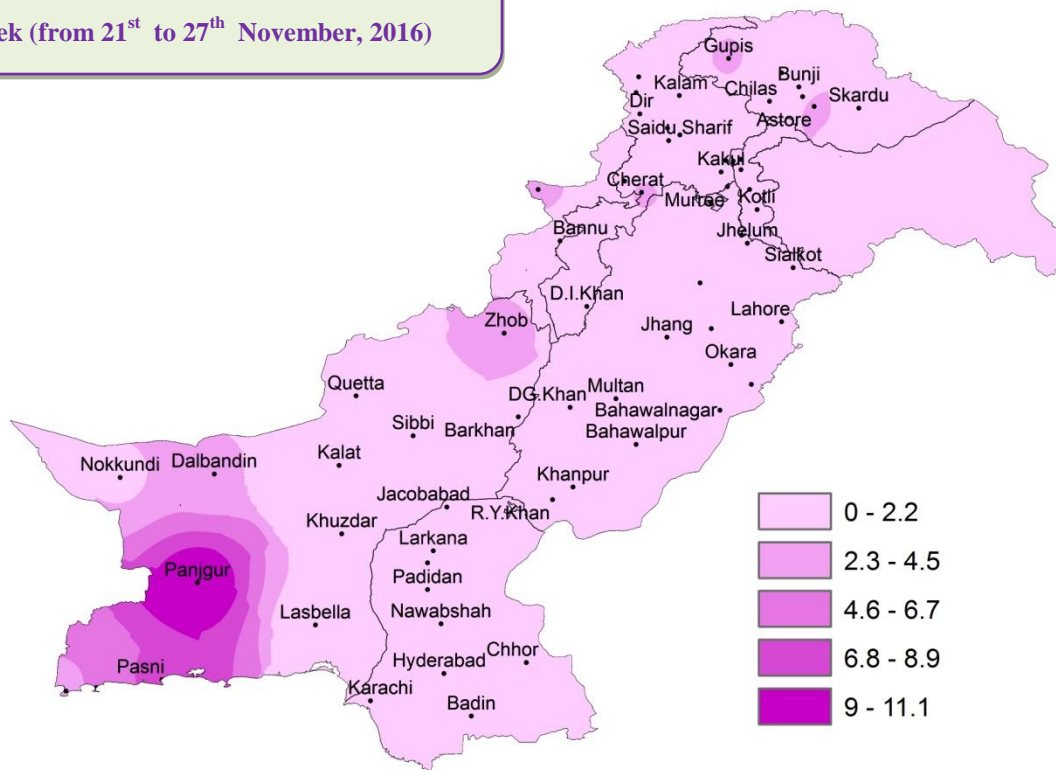
Mean Relative Humidity (%) during the
Previous week (from 21st to 27th November, 2016)



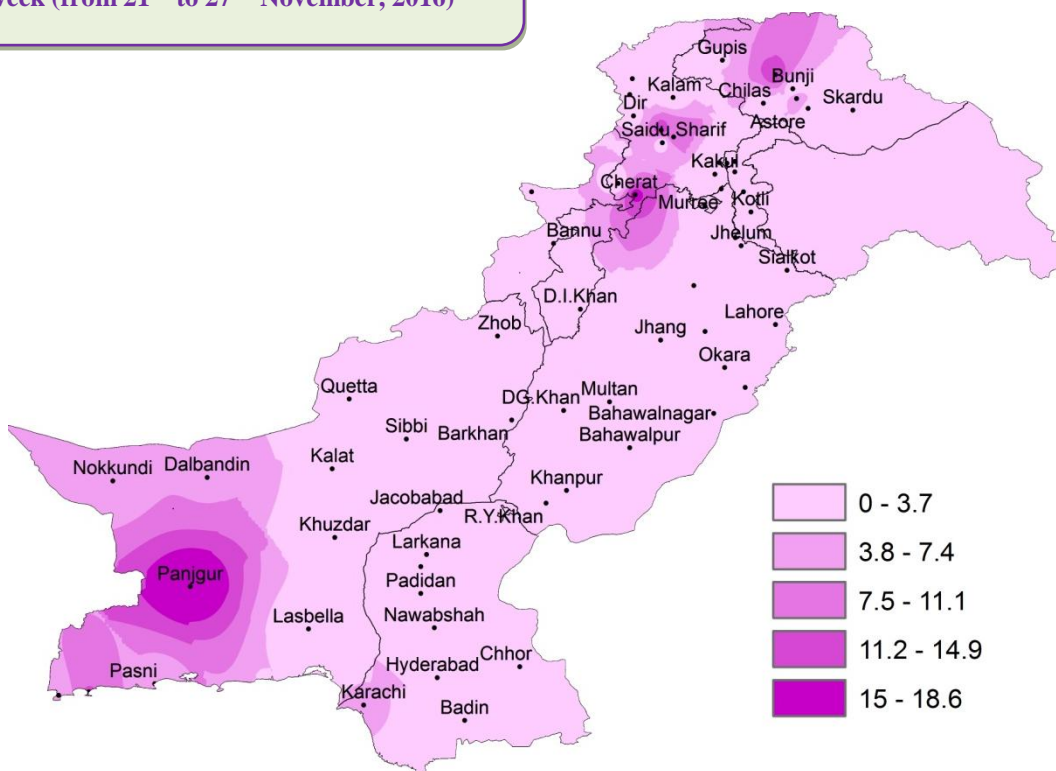
Total Growing Degree Days accumulated during the
Previous week (from 21st to 27th November, 2016)



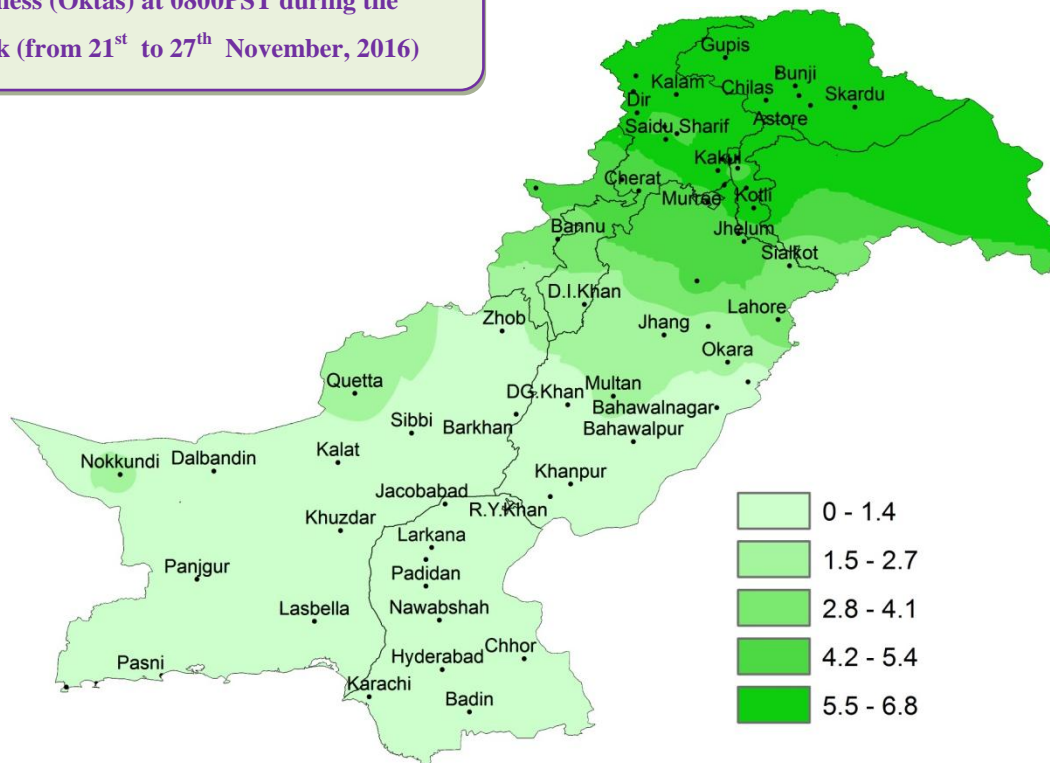
Mean Wind Speed (Knots) at 0800PST during the
Previous week (from 21st to 27th November, 2016)



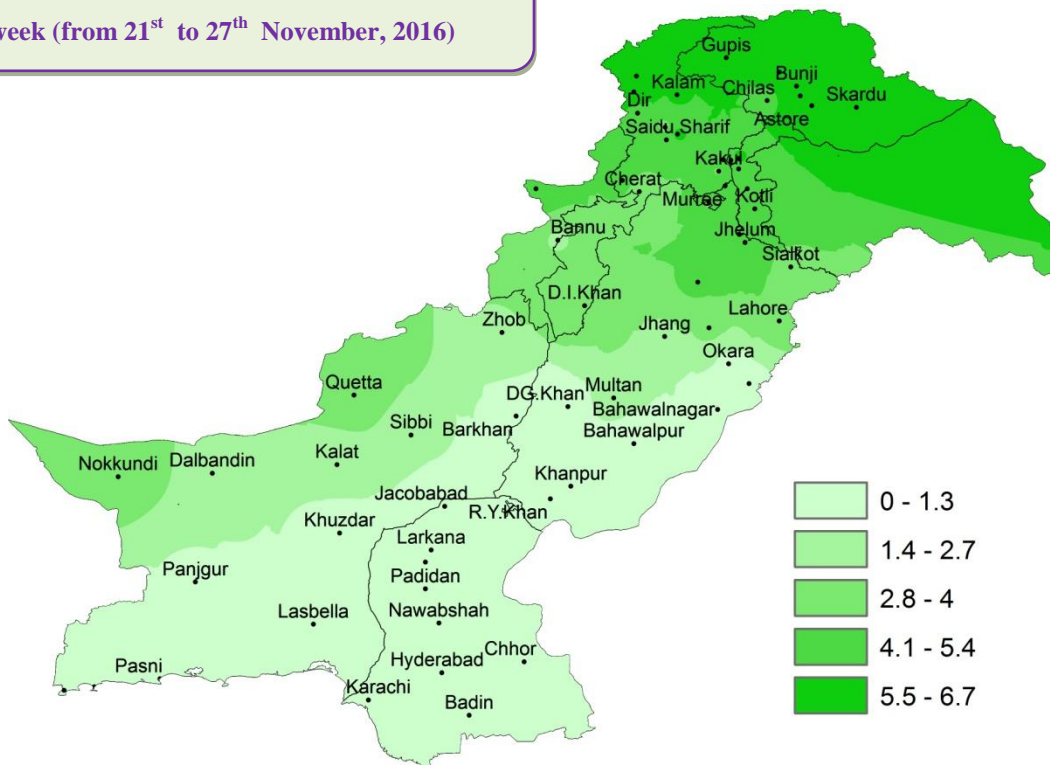
Mean Wind Speed (Knots) at 1200PST during the
Previous week (from 21st to 27th November, 2016)



Mean Cloudiness (Oktas) at 0800PST during the
Previous week (from 21st to 27th November, 2016)



Mean Cloudiness (Oktas) at 1200 PST during the
Previous week (from 21st to 27th November, 2016)



Weekly Weather Advisory for Farmers
(From 28th November to 4th December, 2016)

Continental winds are prevailing over most parts of the country. A shallow westerly wave is likely to enter upper parts of the country on Tuesday (evening/night) and likely to affect during next 24 hours.

MONDAY
14-11-2016

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

TUESDAY
15-11-2016

Mostly cloudy weather conditions would prevail over upper parts with chances of light rain and light snowfall over the mountains at isolated places in Malakand, Hazara divisions, Kashmir and Gilgit-Baltistan during evening/night. Shallow foggy conditions likely in plain areas of Punjab and upper Sindh during morning hours. Cold and dry weather elsewhere in the country.

WEDNESDAY
16-11-2016

Cloudy weather conditions would prevail over upper parts with chances of light rain and light snowfall over the mountains at isolated places in Malakand, Hazara divisions, Kashmir and Gilgit-Baltistan. Shallow foggy conditions likely in plain areas of Punjab and upper Sindh during morning hours. Cold and dry weather elsewhere in the country.

THURSDAY
17-11-2016

Mainly cold and dry weather is expected in most parts of the country. Shallow foggy conditions likely in plain areas of Punjab and upper Sindh during morning hours.

FRIDAY
18-11-2016

Mainly cold and dry weather is expected in most parts of the country. Shallow foggy conditions likely in plain areas of Punjab and upper Sindh during morning hours.

SATURDAY
19-11-2016

Mainly cold and dry weather is expected in most parts of the country. Shallow foggy conditions likely in plain areas of Punjab and upper Sindh during morning hours.

SUNDAY
20-11-2016

Mainly cold and dry weather is expected in most parts of the country. Shallow foggy conditions likely in plain areas of Punjab and upper Sindh during morning hours.

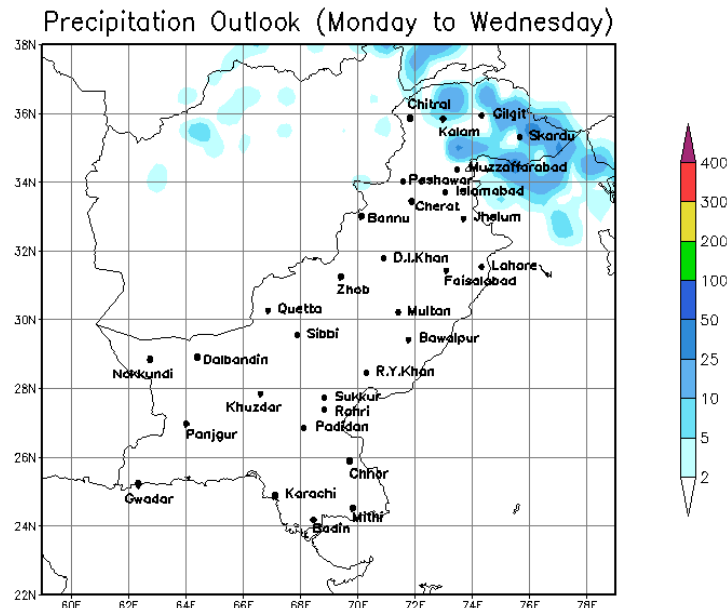
ADVISES FOR CROPS

During the last two months dry weather has been reported in most parts of 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 given to farming community especially for rainfed areas of KP and Punjab.

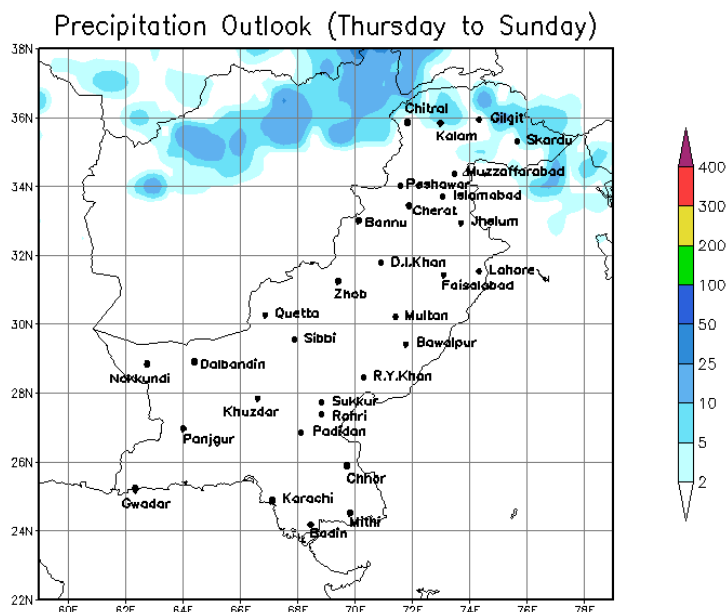
- Farmers of rainfed areas obtaining water through tube wells are advised to schedule the irrigation as per crop requirement.
- In areas like Potohar region and adjoining areas of KP where rain water storages are available. Farmers are advised to irrigate crops by using available irrigation methods like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

Weather Outlook from 28th November to 4th December, 2016

The outlook from 28th to 30th November, 2016 shows that dry weather is expected in most parts of the country. However, rainfall is expected at isolated places in north eastern KP, Gilgit-Baltistan and Kashmir.



The outlook from 1st to 4th December, 2016 shows that dry weather is expected in most parts of the country. However, rainfall is expected at isolated places in upper KP, Gilgit-Baltistan and Kashmir.



National Weather Data of Selected Cities
(Weekly Data from 21st to 27th November, 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	4.0	2.5	17.8	40	0.0	6.6	6.1	3.7	3.1
Badin	15.0	14.0	119.8	59	0.0	0.0	0.3	1.7	1.4
Bahawalnagar	11.7	11.0	108.0	58	0.0	0.0	0.4	0.0	1.4
Bahawalpur	12.4	11.8	107.6	69	0.0	0.4	0.4	0.0	0.0
Balakot	8.0	6.7	70.8	62	0.0	6.7	5.1	0.0	0.6
Bannu	8.7	6.5	83.8	43	0.0	3.0	2.6	0.6	0.9
Barkhan	10.3	9.0	87.3	32	0.0	0.3	0.7	2.0	0.6
Bunji	8.0	6.7	52.3	47	0.0	6.4	6.0	2.0	0.6
Cherat	8.7	8.0	53.5	57	0.0	4.7	3.4	2.9	16.3
Chhor	11.5	10.0	122.1	54	0.0	1.3	0.3	0.3	1.1
Chilas	8.1	7.0	59.3	40	0.0	5.7	5.1	0.9	1.7
Chitral	5.3	1.5	38.9	72	8.3	6.6	6.7	0.3	1.7
D.I.Khan	11.4	10.5	100.5	67	0.0	2.4	3.9	0.6	1.1
Dalbandin	0.6	0.0	24.3	45	0.0	0.0	2.6	2.6	6.6
DG.Khan	10.0	9.5	95.3	62	0.0	0.6	0.7	1.1	3.7
Dir	3.6	1.0	42.8	56	3.0	5.6	5.0	0.0	2.0
Drosh	6.0	5.0	47.8	45	0.0	6.1	6.0	0.0	3.7
Faisalabad	11.6	9.0	106.3	65	0.0	2.0	0.7	0.5	0.2
Garidopatta	6.3	5.0	56.5	67	0.0	4.4	4.1	0.0	0.9
Gawader	16.8	16.0	126.0	32	0.0	0.3	0.0	4.6	11.4
Gilgit	3.5	1.0	36.8	63	0.0	5.9	5.7	0.0	1.1
Gupis	-0.6	-1.5	2.8	45	0.0	5.7	5.6	2.6	3.4

Hyderabad	15.8	14.0	127.0	56	0.0	0.0	0.0	2.0	3.7
Islamabad	8.2	5.5	77.9	71	0.0	5.0	4.0	0.0	0.3
Jacobabad	14.5	13.0	116.3	57	0.0	0.0	0.0	0.3	0.6
Jhang	10.7	9.0	102.0	71	0.0	2.0	2.4	0.0	0.0
Jhelum	10.9	9.8	96.6	67	0.0	4.4	5.3	0.0	0.6
Jiwani	16.6	14.0	123.3	25	0.0	0.4	0.6	4.0	4.6
Kakul	6.4	5.0	56.0	51	0.0	5.6	3.9	0.3	0.3
Kalam	1.9	-1.0	10.0	70	9.8	6.7	5.6	0.0	0.0
Kalat	-2.9	-5.0	11.5	35	0.0	0.0	2.1	0.0	3.1
Karachi	16.5	15.0	136.0	53	0.0	0.3	0.1	0.9	4.0
Khanpur	11.6	10.0	107.6	69	0.0	0.0	0.4	0.0	0.0
Khuzdar	7.2	6.5	74.0	51	0.0	0.0	0.4	0.3	1.7
Kotli	9.1	7.5	80.7	66	0.0	6.0	5.3	0.0	0.0
Lahore	12.8	11.5	106.8	58	0.0	3.6	3.9	0.9	1.1
Larkana	13.0	12.0	118.6	59	0.0	0.0	0.0	1.0	1.4
Lasbella	12.6	10.5	124.3	43	0.0	0.0	0.0	0.0	0.3
Lower Dir	7.1	4.0	59.3	67	0.0	4.9	3.7	0.3	13.7
M.B Din	12.6	11.0	103.0	62	0.0	4.4	4.4	0.0	0.9
Malam Jabba	4.7	3.0	17.5	53	0.0	5.3	5.7	0.0	10.0
Mangla	10.3	8.9	95.5	52	0.0	5.4	4.6	0.6	0.9
Mir Khani	6.2	5.2	48.6	86	0.0	5.6	5.9	0.0	5.6
Moinjodaro	11.1	9.5	105.8	71	0.0	0.0	0.0	0.0	0.6
Multan	12.7	12.2	103.5	65	0.0	2.0	2.0	0.0	0.0
Murree	6.7	5.0	43.3	47	0.0	6.0	5.0	0.6	0.3
Muzaffarabad	7.6	7.2	58.4	61	0.0	5.3	4.3	1.7	1.0
Nawabshah	15.8	14.0	127.0	61	0.0	0.0	0.3	0.6	3.1

Nokkundi	3.9	2.0	35.8	30	0.0	1.4	3.3	1.7	4.7
Okara	12.5	11.5	107.2	64	0.0	1.9	1.1	0.6	0.0
Padidan	12.5	11.5	113.3	66	0.0	0.0	0.7	0.0	1.1
Panjgur	2.8	1.0	32.3	41	0.0	0.4	0.9	11.1	18.6
Parachinar	4.5	3.5	21.0	54	0.0	4.9	5.3	3.0	3.0
Pasni	19.2	18.5	136.5	51	0.0	0.0	0.6	8.0	4.9
Pattan	9.6	7.0	72.3	48	0.0	6.9	6.0	0.6	0.0
Peshawar	10.2	8.5	84.2	71	0.0	5.1	4.6	0.0	0.3
Quetta	1.8	-0.5	20.4	41	0.0	2.3	3.7	1.1	3.4
R.Y.Khan	12.5	11.0	112.5	68	0.0	0.0	0.3	0.3	0.3
Rawalakot	3.1	1.8	45.3	54	0.0	5.9	4.7	0.0	0.0
Rawalpindi	9.7	7.5	83.1	74	0.0	5.7	4.3	0.2	0.3
Sahiwal	11.4	10.0	101.8	61	0.0	0.7	0.9	0.6	0.3
Saidu Sharif	7.5	6.0	63.2	61	0.0	6.0	4.7	0.0	0.0
Sialkot	10.7	8.0	89.8	74	0.0	3.3	3.6	0.0	0.6
Sibbi	12.8	10.5	116.9	36	0.0	0.9	2.1	0.6	1.1
Skardu	1.6	-0.6	16.6	56	0.0	6.6	6.3	0.0	0.3
Tandojam	12.0	10.5	11.3	61	0.0	0.0	0.0	0.6	0.4
Usta.M	11.3	10.0	107.4	55	0.0	0.0	0.6	0.3	0.6
Zhob	5.0	3.5	55.0	37	0.0	1.3	2.6	2.9	2.7

*** 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)