

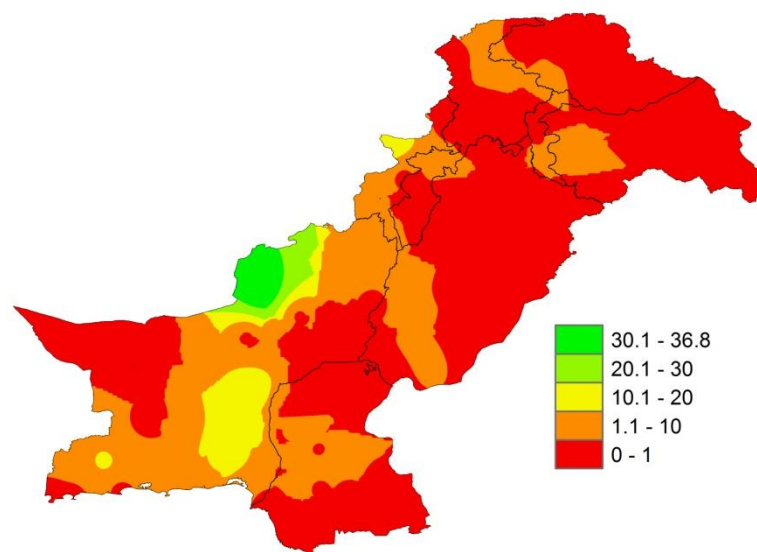
Weekly Weather and Crop Bulletin for Pakistan

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**Rainfall Distribution (mm) during the
Previous Week (from 13th to 19th March, 2017)**



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 13th to 19th March, 2017)

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

Province wise distribution of rainfall reported as follows:

- Light to moderate rainfall reported from several places of Khyber Pakhtunkhwa (KP) and Balochistan.
- Light rainfall reported from few places of Gilgit-Baltistan (GB), Kashmir, Sindh and Punjab.

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

Editor-in-Chief: Dr. Khalid M. Malik (Director)

Editor: Dr Dildar Hussain Kazmi (Meteorologist)

Past Weather of Provinces (from 13th to 19th March, 2017)

Punjab

Light rainfall reported from few places of Punjab during the week. Weekly maximum and minimum temperatures recorded as 26.0°C & 10.5°C respectively. For the recent week on average 92.6 growing degree days were accumulated by the end of the last week. Average relative humidity recorded as 57% and wind speed in the morning/evening recorded as 1.1/2.9 Knots. During the previous week the highest amount of rainfall was recorded as 4.61 mm at D.G.Khan & the lowest minimum temperature was recorded as 0.5°C at Murree.

Sindh

Light rainfall reported from few places of Sindh during the week. Weekly maximum and minimum temperatures recorded as 32.3°C & 15.0°C respectively. For the recent week, on average 132.0 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 2.0/4.4 Knots. During the previous week the highest amount of rainfall was recorded as 9.0 mm at Dadu & the lowest minimum temperature was recorded as 1.8°C at Badin.

Khyber Pakhtunkhwa

Light to moderate rainfall reported from several places of Khyber Pakhtunkhwa during the week. Weekly maximum and minimum temperatures recorded as 19.8°C & 5.9°C respectively. For the recent week on average 62.2 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 0.7/2.2 Knots. During the previous week the highest amount of rainfall was recorded as 19.0 mm at Parachinar & the lowest minimum temperature was recorded as -5.0°C at Kalam.

Balochistan

Light to moderate rainfall reported from several places of Balochistan during the week. Weekly maximum and minimum temperatures recorded as 26.6°C & 12.4°C respectively. For the recent week on average 102.4 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 48% and wind speed in the morning/evening recorded as 2.2/5.0 Knots. During the previous week the highest amount of rainfall was recorded as 37.3 mm at Quetta & the lowest minimum temperature was recorded as -0.9°C at Quetta.

Gilgit-Baltistan and Azad Jammu & Kashmir

Light rainfall reported from several places of Gilgit-Baltistan & Kashmir during the week. Weekly maximum and minimum temperatures recorded as 16.6°C & 3.8°C respectively. For the recent week on average 41.2 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 47% and wind speed in the morning/evening recorded as 0.9/2.6 Knots. During the previous week the highest amount of rainfall was recorded as 10.0 mm at Kotli & the lowest minimum temperature was recorded as -4.0°C at Astore.

**Past Weather for Major Agricultural Plains
(from 13th to 19th March, 2017)****Rawalpindi (Potohar region)**

Dry weather reported from Rawalpindi during the week; however, cloudiness in the morning/evening recorded as 2.0/2.3 Oktas while, average relative humidity observed as 54%. Mean night time temperature recorded as 9.0°C & for the recent week 84.1 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.5/2.3 Knots.

Faisalabad (Central Punjab)

Dry weather reported from Faisalabad during the week; however, cloudiness in the morning/evening recorded as 2.0/1.7 Oktas while, average relative humidity observed as 62%. Mean night time temperature recorded as 10.6°C & for the recent week 95.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.9/1.1 Knots.

Tandojam (Lower Sindh)

Dry weather reported from Tandojam during the week; however, cloudiness in the morning/evening recorded as 2.4/0.9 Oktas while, average relative humidity observed as 56%. Mean night time temperature recorded as 13.0°C & for the recent week 126.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.3/2.3 Knots.

Usta Muhammad (Eastern Balochistan)

Rainfall reported as trace (not measureable) from Usta Muhammad during the week; however, cloudiness in the morning/evening recorded 0.3/1.3 Oktas while, average relative humidity observed as 56%. Mean night time temperature recorded as 13.4°C & for the recent week 117.9 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.6/2.6 Knots.

Quetta (Northern Baluchistan)

Rainfall reported as 40.6 mm from Quetta during the week; however, cloudiness in the morning/evening recorded as 4.3/4.7 Oktas while, average relative humidity observed as 50%. Mean night time temperature recorded as 6.6°C at the end of last week. Wind speed recorded in the morning/evening as 2.5/3.6 Knots.

**Past Weather for Sub-Regional Agricultural
Plains (from 13th to 19th March, 2017)****Multan**

Dry weather reported from Multan during the week; however, cloudiness in the morning/evening recorded as 2.9/1.3 Oktas while, average relative humidity observed as 52%. Mean night time temperature recorded as 15.3°C & for the recent week 113.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.9/5.7 Knots.

Lahore

Dry weather reported from Lahore during the week; however, cloudiness in the morning/evening recorded as 2.9/2.4 Oktas while, average relative humidity observed as 58%. Mean night time temperature recorded as 10.8°C & for the recent week 100.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.6/2.0 Knots.

Zhob

Rainfall reported as 8.0mm from Zhob during the week; however, cloudiness in the morning/evening recorded as 1.7/2.0 Oktas while, average relative humidity observed as 45%. Mean night time temperature recorded as 7.1°C & for the recent week 61.5 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 5.0/5.6 Knots.

Murree

Dry weather reported from Murree during the week; however, cloudiness in the morning/evening recorded as 1.7/3.3 Oktas while, average relative humidity observed as 52%. Mean night time temperature recorded as 2.4°C by the end of last week. Wind speed recorded in the morning/evening as 1.1/1.1 Knots.

D.I. Khan

Dry weather reported from D.I. Khan during the week; however, cloudiness in the morning/evening recorded as 2.0/0.4 Oktas while, average relative humidity observed as 64%. Mean night time temperature recorded as 10.9°C & for the recent week 99.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/0.6 Knots.

Peshawar

Dry weather reported from Peshawar during the week; however, cloudiness in the morning/evening recorded as 3.3/4.3 Oktas while, average relative humidity observed as 48%. Mean night time temperature recorded as 10.0°C & for the recent week 91.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.1/2.6 Knots.

Kalam

Rainfall reported as 4.0 mm from Kalam during the week; however, cloudiness in the morning/evening recorded as 4.1/5.6 Oktas while, average relative humidity observed as 65%. Mean night time temperature recorded as -1.6°C 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 5.1/6.1 Oktas while, average relative humidity observed as 41%. Mean night time temperature recorded as 3.9°C & for the recent week 40.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/10.3 Knots.

Skardu

Dry weather reported from Skardu during the week; however, cloudiness in the morning/evening recorded as 6.4/6.9 Oktas while, average relative humidity observed as 49%. Mean night time temperature recorded as 0.1°C by the end of last week. Wind speed recorded in the morning/evening as 0.0/2.3 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: Very good condition, *Flowering* stage completed.

Lower Sindh (Tandojam)

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

Wheat (Imdad): Crop has been harvested on 19-03-2017.

Northern Balochistan (Quetta)

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

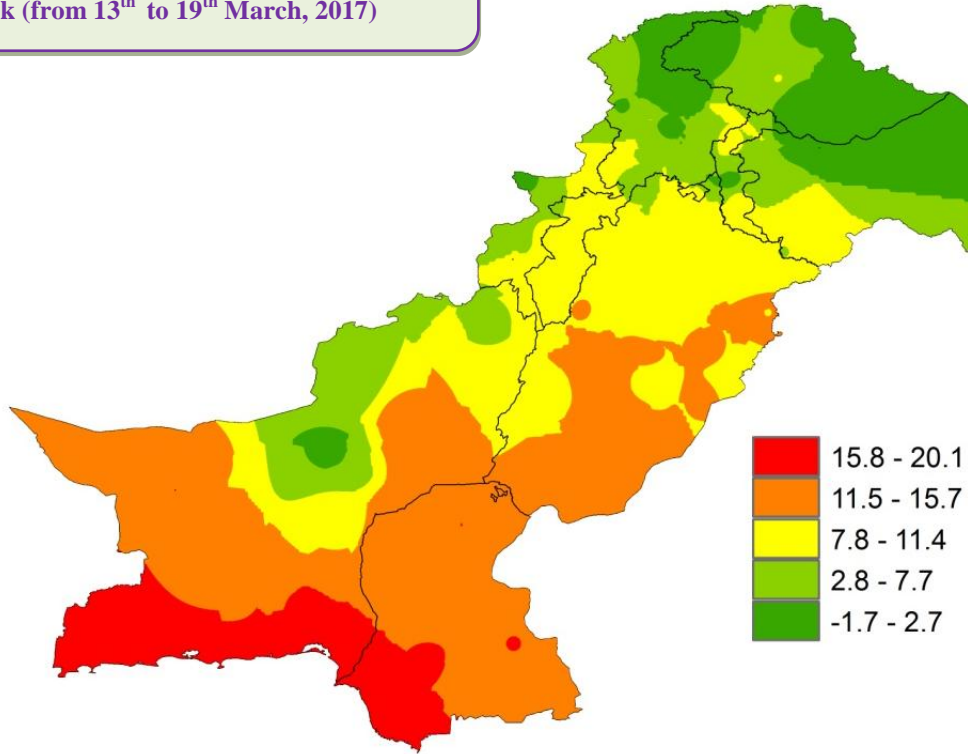
Wheat (Local white): Good condition at *Shooting* stage.

Eastern Balochistan (Usta Muhammad)

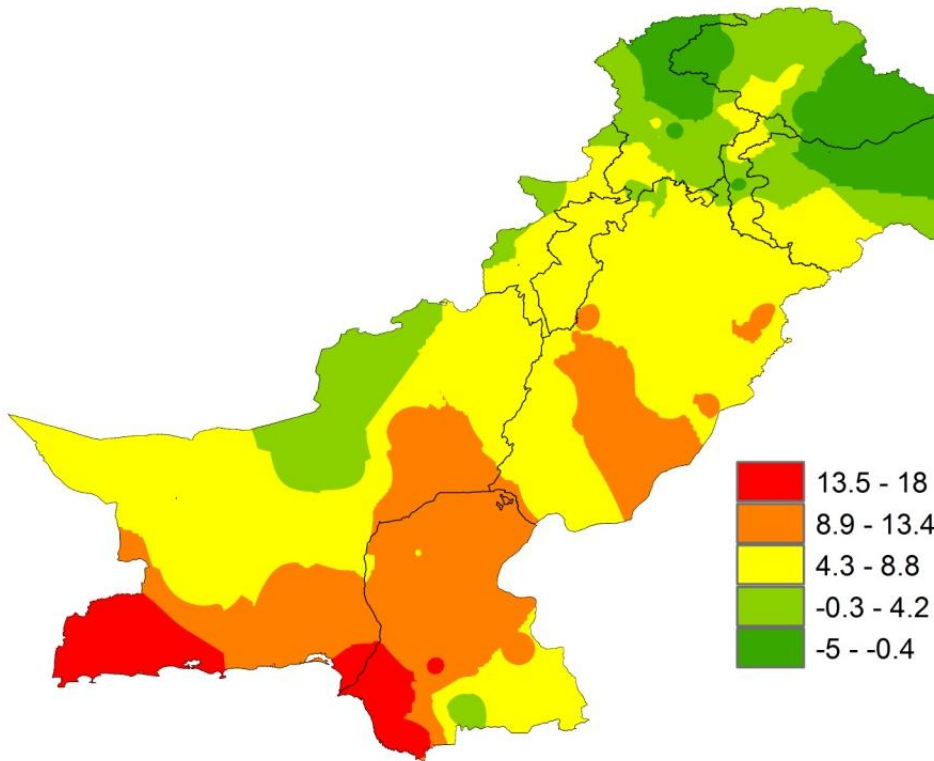
There is presently one crop (irrigated conditions) grown in the fields of RAMC Usta Muhammad.

Wheat: Good condition at *Milk Maturity* stage.

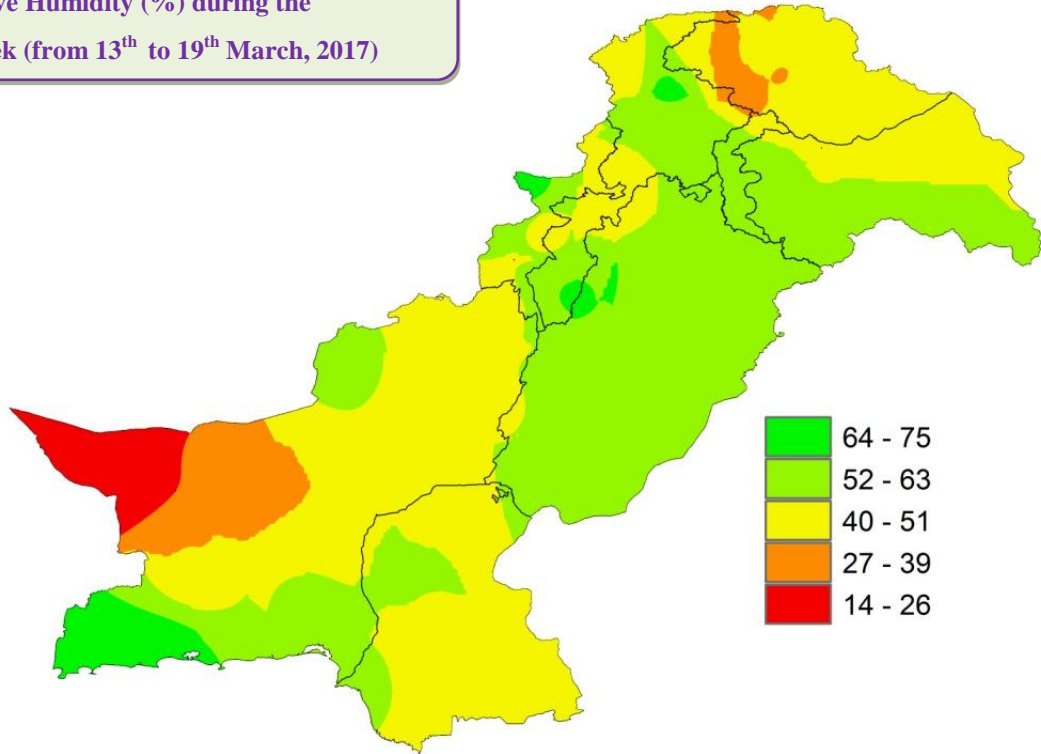
Mean Minimum Temperature (°C) during the Previous week (from 13th to 19th March, 2017)



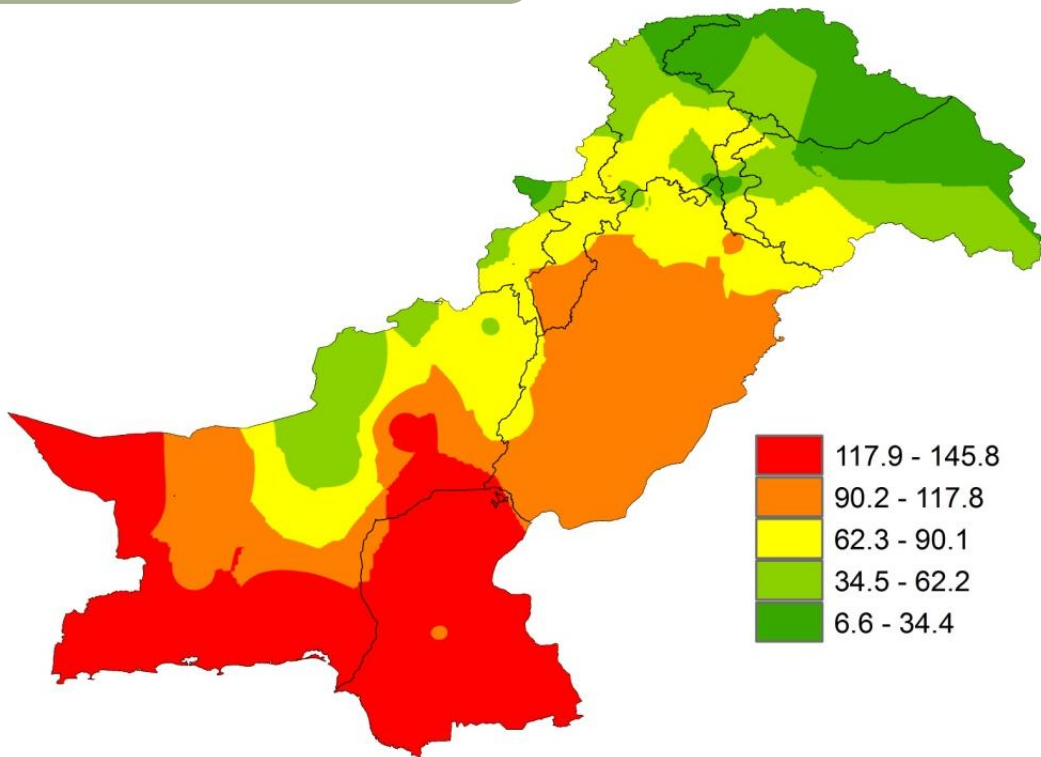
Lowest Minimum Temperature (°C) during the Previous week (from 13th to 19th March, 2017)



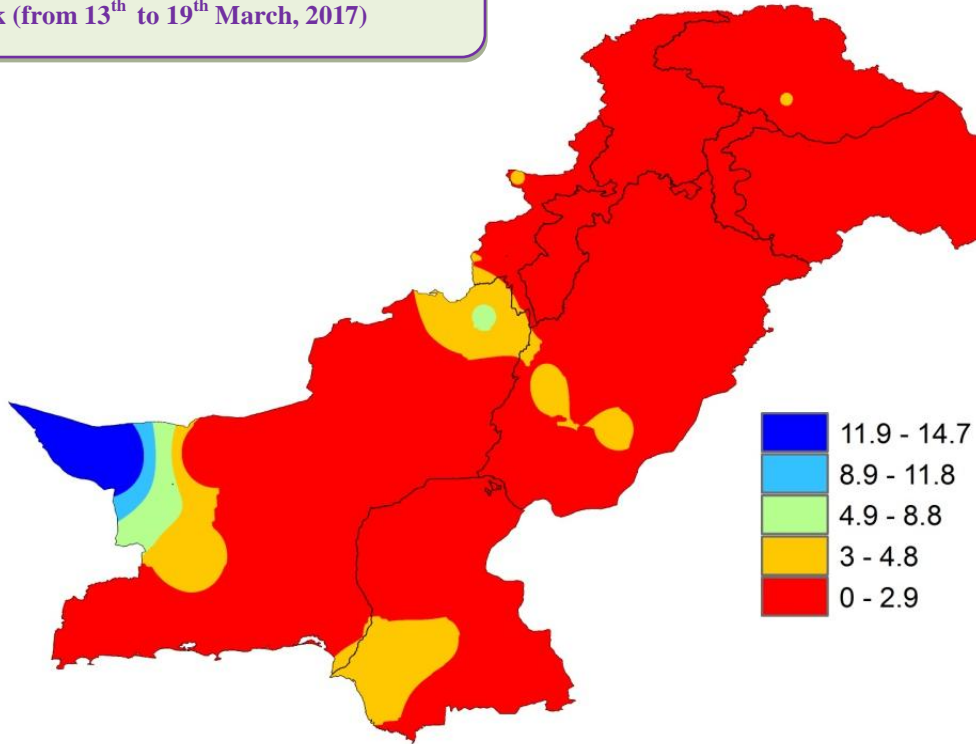
Mean Relative Humidity (%) during the Previous week (from 13th to 19th March, 2017)



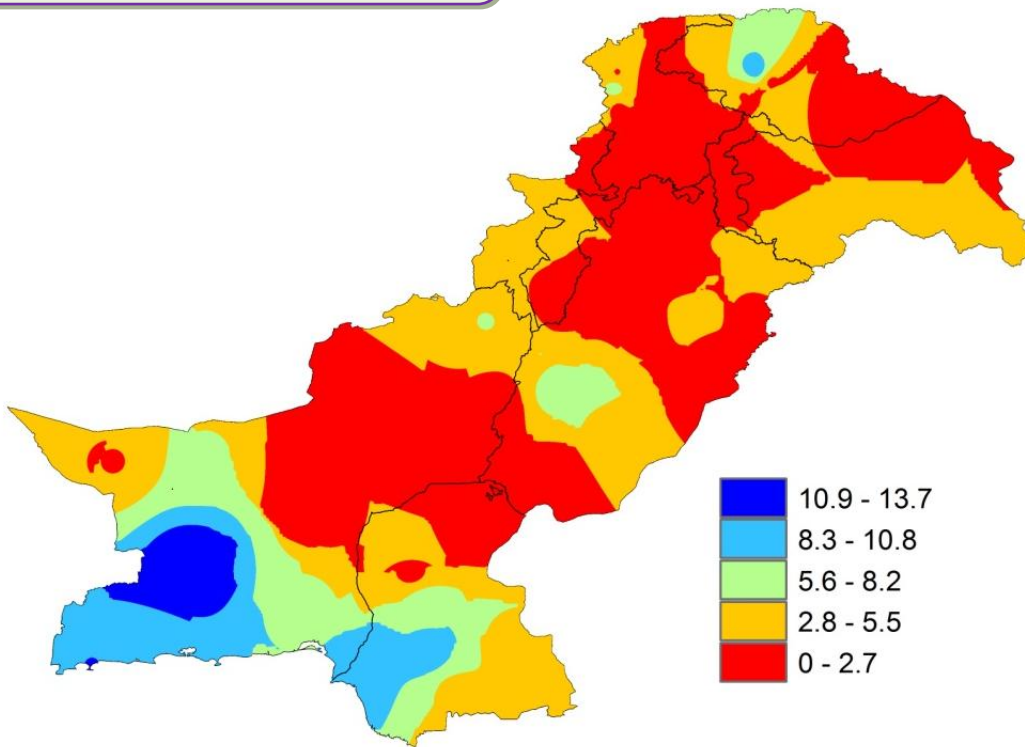
Total Growing Degree Days accumulated during the Previous week (from 13th to 19th March, 2017)



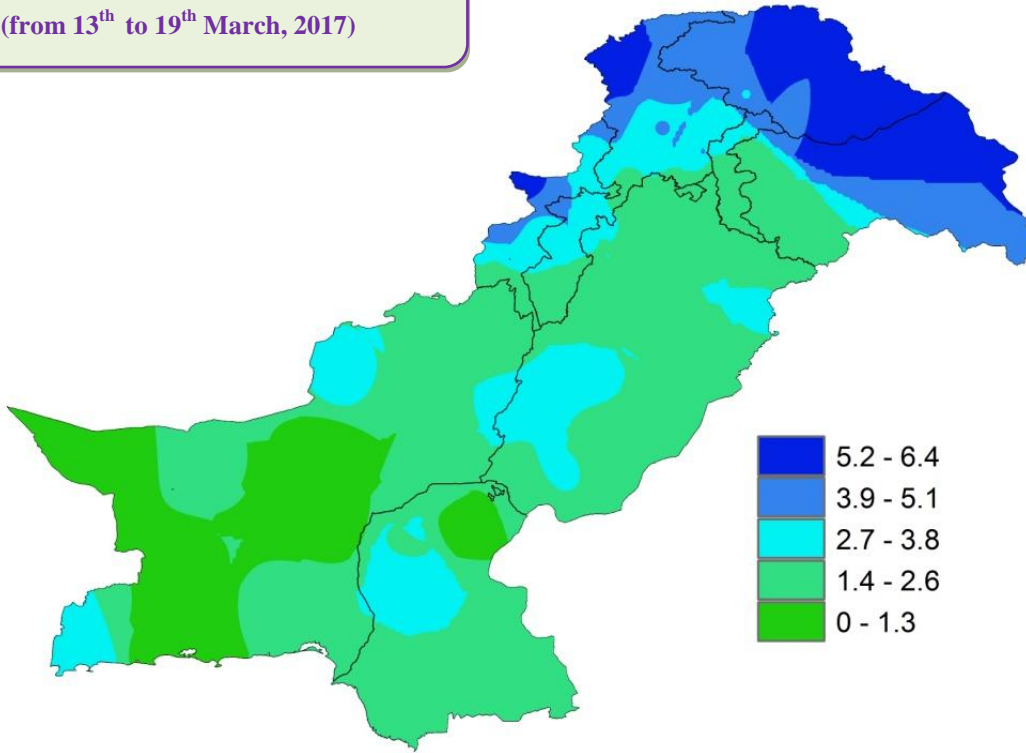
Mean Wind Speed (Knots) at 0800PST during the Previous week (from 13th to 19th March, 2017)



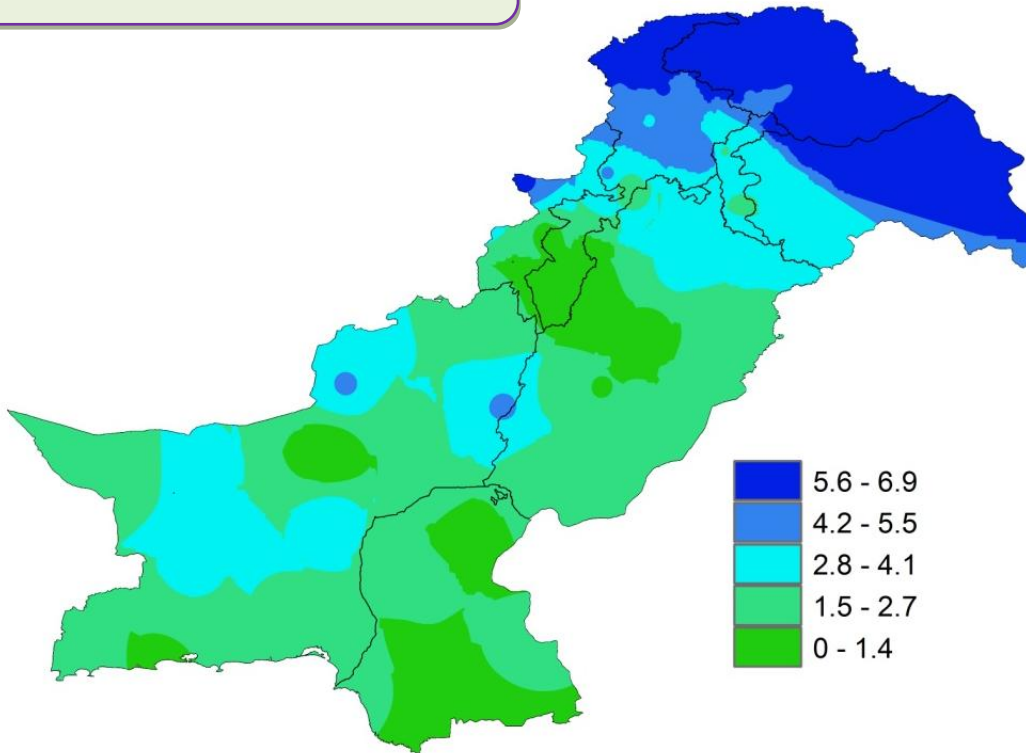
Mean Wind Speed (Knots) at 1700PST during the Previous week (from 13th to 19th March, 2017)



Mean Cloudiness (Oktas) at 0800PST during the Previous week (from 13th to 19th March, 2017)



Mean Cloudiness (Oktas) at 1700PST during the Previous week (from 13th to 19th March, 2017)



Weekly Weather Advisory for Farmers**(from 20th to 26th March, 2017)**

A fresh westerly wave is likely to enter in Pakistan on Tuesday evening and may persist upper parts of the country till Thursday morning.

MONDAY**20-03-2017**

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

TUESDAY**21-03-2017**

Partly cloudy weather conditions are likely to prevail over most upper parts of the country including Quetta. However, rain-thunderstorm is expected at scattered places in Quetta, Zhob, Malakand, Hazara divisions, Kashmir and FATA, while at isolated places in Kalat, Makran, D.I Khan, D.G Khan, Bannu, Kohat, Peshawar, Mardan, Rawalpindi, Sargodha and Gujranwala divisions

WEDNESDAY**22-03-2017**

Rain-thunderstorm (with light snowfall over the hills) is expected at scattered places in KP, FATA, Gilgit-Baltistan, and Kashmir while at isolated places in Quetta, Zhob, Kalat, Sargodha, Rawalpindi, Gujranwala divisions and Islamabad. Dry weather elsewhere in the country.

THURSDAY**23-03-2017**

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

FRIDAY**24-03-2017**

Mainly dry weather is expected in most parts of the country.

SATURDAY**25-03-2017**

Mainly dry weather is expected in most parts of the country. However rain-thunderstorm is expected at few places in Malakand, Hazara, Quetta, Zhob divisions, Gilgit-Baltistan and Kashmir.

SUNDAY**26-03-2017**

Mainly dry weather is expected in most parts of the country. However rain-thunderstorm is expected at few places in Quetta.

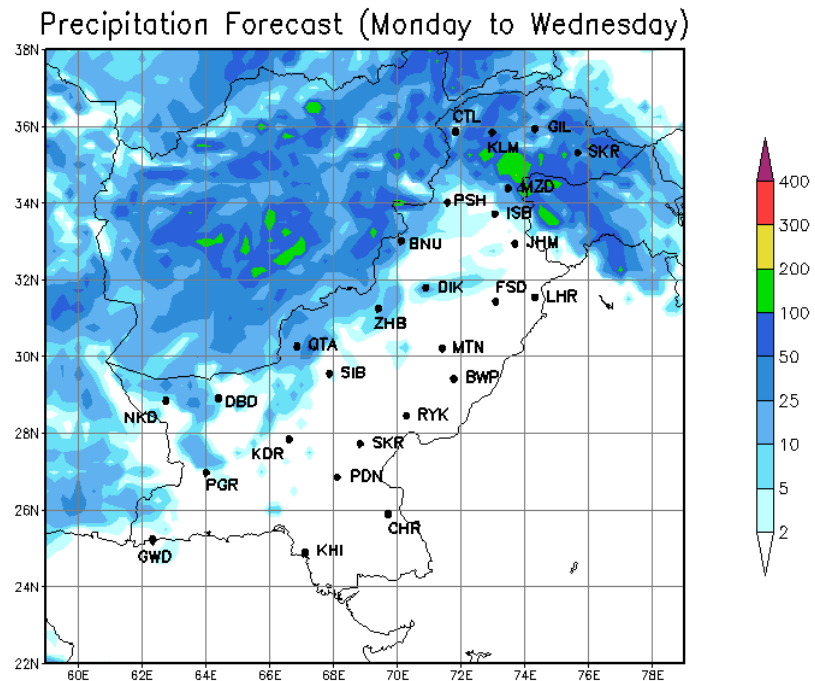
ADVISES FOR FARMERS

During the last week, light to moderate rainfall reported from most parts of the country. This may continue in the same manner in coming days in northern and western parts of the country. Keeping in view the expected weather conditions following advises are suggested for farming community.

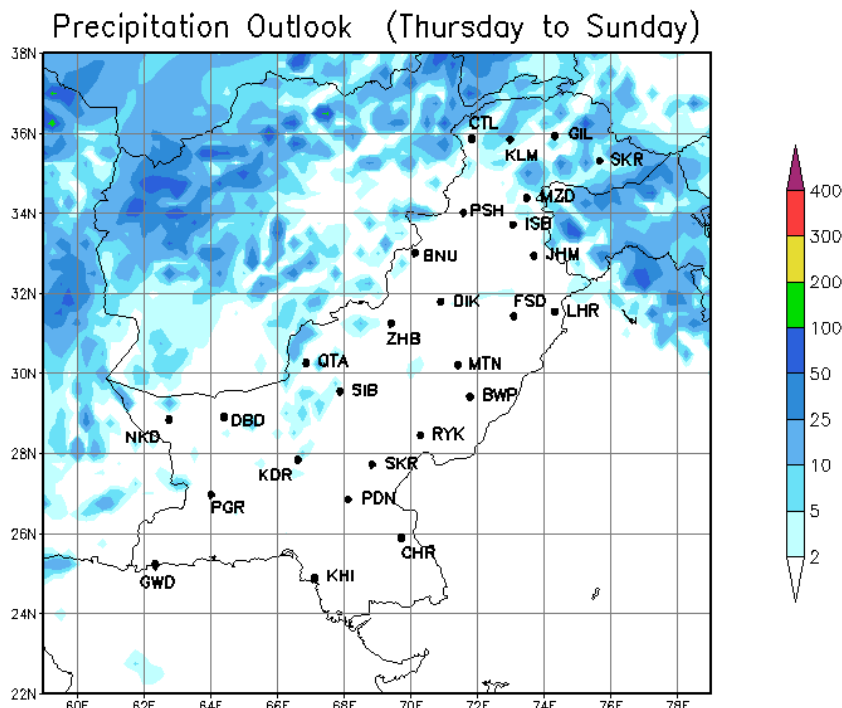
- Farmers of irrigated areas may irrigate the crops as per requirement in accordance with the expected weather conditions.
- Removing weeds from the standing crops is very important as weeds utilize moisture and food which may be utilized by the crop. As a result considerable loss in yield occurs every year. However operations against weeds should be started using weedicides or manually when the crop completely covers the fields.

Weather Outlook from 20th to 26th March, 2017

The forecast from 20th to 22nd March, 2017 shows that light to moderate rainfall is expected in upper KP, north & western Balochistan, GB and Kashmir. However, dry weather may prevail in rest of the country.



The outlook from 22nd to 26th March, 2017 shows that dry weather is expected in most parts of the country. However, light to moderate rainfall is expected at scattered places in KP, GB, Kashmir and north-western Balochistan.



National Weather Data of Selected Cities
(Weekly Data from 13th to 19th March, 2017)

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	-1.8	-4.0	***	48	0.0	4.1	6.4	3.4	2.9
Badin	15.5	1.8	140.9	46	0.0	1.4	0.7	1.7	4.3
Bahawalnagar	11.7	9.0	103.8	53	0.0	1.6	1.7	0.3	2.0
Bahawalpur	13.5	10.7	112.7	54	0.01	1.7	2.0	3.4	4.9
Balakot	6.5	2.3	60.1	55	0.0	4.0	5.3	0.0	2.0
Bannu	7.9	5.0	81.5	47	0.0	3.6	1.1	0.6	4.3
Barkhan	10.4	7.0	82.9	48	0.01	2.7	4.3	0.3	0.6
Bunji	8.5	6.1	58.0	34	0.0	6.4	6.1	1.1	2.0
Cherat	6.4	3.0	44.0	46	0.0	2.0	2.1	2.6	2.0
Chhor	15.8	9.0	142.1	43	0.0	1.7	1.7	1.1	4.6
Chilas	7.7	6.0	61.9	32	3.2	3.7	5.4	0.6	2.6
Chitral	3.5	-0.2	39.4	49	0.8	5.9	6.0	0.3	2.6
D.G.Khan	10.1	8.0	93.1	60	4.6	2.9	2.4	4.0	6.3
D.I.Khan	10.9	8.5	99.0	64	0.0	2.0	0.4	0.0	0.6
Dalbandin	11.9	6.0	111.0	28	0.01	1.9	3.1	1.4	6.0
Dir	2.2	0.0	35.6	57	0.0	4.9	5.1	0.0	2.3
Drosh	3.8	1.0	40.8	39	0.0	5.4	5.4	0.0	6.6
Faisalabad	10.6	6.7	95.0	62	0.0	2.0	1.7	0.9	1.1
Garidopatta	6.1	3.5	66.4	56	0.0	1.4	4.1	0.0	0.6
Gawader	18.4	17.0	137.0	71	0.0	3.7	1.8	0.0	11.0
Gilgit	3.9	2.5	40.0	41	0.0	5.1	6.1	0.0	10.3
Gupis	-0.5	-1.5	8.6	38	0.0	4.1	5.6	2.9	3.1

Hyderabad	17.8	14.0	145.8	41	0.0	2.4	1.0	4.3	9.7
Islamabad	7.4	4.0	75.0	57	0.0	2.6	3.0	0.6	1.1
Jacobabad	15.3	12.0	120.0	48	0.01	2.4	2.6	0.6	0.3
Jhang	10.8	8.0	97.1	61	0.0	2.4	1.0	0.0	1.1
Jhelum	9.9	7.2	92.7	59	0.0	2.3	3.3	0.0	3.7
Jiwani	20.1	18.0	139.8	70	0.0	3.4	1.9	1.4	8.6
Kakul	3.5	1.5	41.9	58	0.0	2.9	4.4	0.0	1.1
Kalam	-1.6	-5.0	***	65	4.0	4.1	5.6	0.0	0.0
Karachi	18.8	15.5	141.6	55	0.0	1.9	1.7	3.3	9.4
Khanpur	12.5	7.6	113.4	55	2.2	2.9	2.1	1.4	2.0
Khuzdar	9.9	7.5	86.5	40	15.0	0.0	3.7	0.6	1.4
KLT	1.5	1.0	38.5	39	0.0	0.0	0.0	0.0	0.0
Kotli	9.4	6.2	81.0	52	10.0	2.3	2.4	1.4	2.0
Lahore	10.8	7.0	100.3	58	0.0	2.9	2.4	0.6	2.0
Larkana	13.9	12.3	119.3	50	1.0	2.7	1.4	2.9	2.9
Lasbella	16.1	11.0	135.4	54	12.0	2.2	2.3	0.0	6.9
Lower Dir	7.9	5.0	74.6	55	0.0	2.9	4.0	1.4	1.4
M.B Din	10.8	7.5	94.8	62	0.0	2.6	3.4	0.0	1.7
Malam Jabba	-1.4	-3.0	***	63	0.0	4.0	4.9	0.0	0.0
Mangla	9.0	6.7	86.4	58	0.0	2.3	3.0	0.0	1.4
Mir Khani	3.2	2.8	40.2	50	0.0	5.3	4.7	0.6	3.4
Moinjodaro	13.3	8.5	119.6	51	0.01	2.3	1.4	2.0	5.1
Multan(PBO)	15.3	11.5	113.0	52	0.01	2.9	1.3	0.9	5.7
Murree	2.4	0.5	16.7	52	0.0	1.7	3.3	1.1	1.1
Muzaffarabad	6.2	2.0	61.4	55	0.0	2.9	4.1	0.3	2.3
Nawabshah	14.1	10.0	132.1	49	0.0	2.7	1.4	2.3	7.7

Nokkundi	15.0	8.0	126.4	14	0.0	0.9	2.3	14.7	2.6
Okara	11.8	8.8	99.3	57	0.0	2.1	1.7	0.6	2.3
Padidan	13.5	10.0	120.0	54	2.0	3.0	1.6	2.0	1.4
Panjgur	13.1	6.0	115.1	40	0.0	1.0	3.0	3.7	13.7
Parachinar	1.9	0.5	7.7	69	19.0	5.9	5.7	3.0	3.0
Pasni	19.3	16.5	136.9	75	0.0	0.0	1.0	0.7	8.4
Pattan	9.6	6.5	76.5	51	0.0	3.1	2.1	0.0	0.6
Peshawar	10.0	6.0	90.7	48	0.0	3.3	4.3	1.1	2.6
Quetta	6.6	4.2	50.2	50	40.6	4.3	4.7	2.5	3.6
Rahim Yar Khan	11.5	8.5	112.3	54	0.01	2.1	2.0	1.7	1.3
Rawalakot	0.6	-1.5	19.5	62	0.01	2.4	3.6	0.0	0.6
Rawalpindi	9.0	5.5	84.1	54	0.0	2.0	2.3	0.5	2.3
Rohri	16.3	14.0	135.1	46	0.0	0.0	0.4	1.0	0.6
Sahiwal	10.2	6.5	93.5	60	0.0	1.7	1.4	0.6	2.0
Saidu Sharif	7.6	4.3	66.0	53	0.0	3.7	4.1	0.9	0.6
Sialkot	9.6	7.2	84.3	58	0.0	2.0	3.1	1.1	5.4
Sibbi	14.9	11.0	125.6	39	0.01	1.3	2.0	0.6	1.4
Skardu	0.1	-2.4	6.6	49	0.0	6.4	6.9	0.0	2.3
Tandojam	13.0	7.0	127.0	56	0.0	2.4	0.9	0.3	2.3
Usta M	13.4	13.0	118.0	56	0.01	0.3	1.3	0.6	2.6
Zhob	7.1	5.0	61.5	45	8.0	1.7	2.0	5.0	5.6

*** Shows that data was not available.

0.01 means trace rainfall (not measurable)

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 سبب (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)