

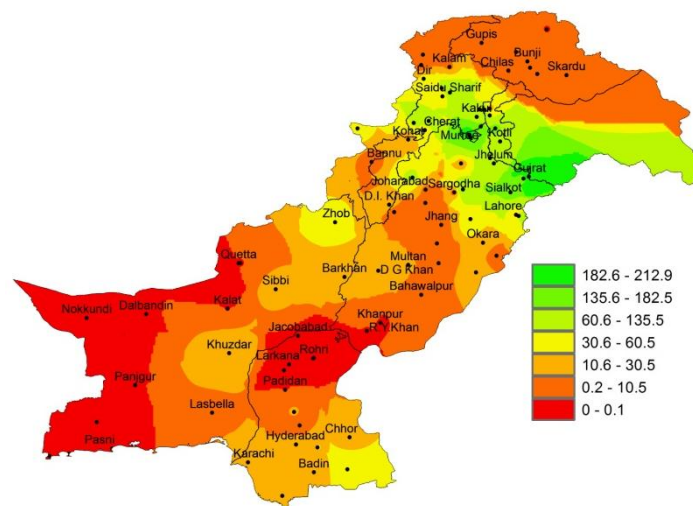
Weekly Weather and Crop Bulletin for Pakistan

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PAKISTAN METEOROLOGICAL
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**Rainfall Distribution (mm) during the
Previous Week (from 10th July to 16th July, 2017)**



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Highlights of Past Weather (from 10th July to 16th July, 2017)

Below normal day time temperatures reported from most parts of the country.

Province wise distribution of rainfall reported as follows:

- Light to moderate rainfall reported from most part of Punjab, KP, Sindh, GB and Kashmir, with a few heavy spells in Punjab GB and Kashmir, during the week.
- Light to moderate rainfall was reported from scattered places of Baluchistan.

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 (from 10th July to 16th July, 2017)**Punjab**

Light to moderate rainfall, with a few heavy spells, reported from most part of Punjab during the week. Weekly maximum and minimum temperatures recorded as 36.5°C & 26.6°C respectively. For the recent week on average 185.8 growing degree days were accumulated by the end of the last week. Average relative humidity recorded as 67% and wind speed in the morning/evening recorded as 3.5/3.4 knots. During the previous week the highest amount of rainfall was recorded as 212.9 mm at Gujrat & highest maximum temperature was recorded as 42.5°C at Bhakkar.

Balochistan

Light to moderate rainfall was reported from scattered places of Balochistan province during the week. Weekly maximum and minimum temperatures recorded as 37.8°C & 24.3°C respectively. For the recent week on average 182.4 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 2.1/6.0 knots. During the previous week the highest amount of rainfall was recorded as 39.01 mm at Zhob & highest maximum temperature was recorded as 51.0°C at Dilbadin.

Khyber Pakhtunkhwa

Light to moderate rainfall reported from most part of Khyber Pakhtunkhwa during the week. Weekly maximum and minimum temperatures recorded as 34.0°C & 22.6°C respectively. For the recent week on average 163.2 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 64% and wind speed in the morning/evening recorded as 0.9/4.3 knots. During the previous week the highest amount of rainfall was recorded as 128.01 mm at Kakul &

highest maximum temperature was recorded as 43.0 °C at D.I. Khan.

Gilgit-Baltistan and Azad Jammu & Kashmir

Light to moderate rainfall, with a few heavy spells, reported from most part of Gilgit-Baltistan & Kashmir during the week. Weekly maximum and minimum temperatures recorded as 32.5°C & 20.3°C respectively. For the recent week on average 142.7 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 56% and wind speed in the morning/evening recorded as 0.8/3.0 knots. During the previous week the highest amount of rainfall was recorded as 148.6 mm at Rawalakot & highest maximum temperature was recorded as 43.5°C at Chilas.

Sindh

Light to moderate rainfall reported from most part of Sindh during the week. Weekly maximum and minimum temperatures recorded as 37.9°C & 27.5°C respectively. For the recent week, on average 195.2 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 64% and wind speed in the morning/evening recorded as 5.3/6.6 knots. During the previous week the highest amount of rainfall was recorded as 52.7 mm at Mitthi, highest maximum temperature was recorded as 44.8°C at Dadu.

**Past Weather for Major Agricultural Plains
(from 10th July to 16th July, 2017)****Rawalpindi (Potohar region)**

Rainfall reported as 232.0 mm from Rawalpindi during the week; however, cloudiness in the morning/evening recorded as 5.4/3.7 Oktas while, average relative humidity observed as 77%. Mean day time temperature recorded as 34.1°C & for the recent week 170.1 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.7/2.3 knots.

Faisalabad (Central Punjab)

Rainfall reported as 68.0 mm from Faisalabad during the week; however, cloudiness in the morning/evening recorded as 1.9/2.9 Oktas while, average relative humidity observed as 67%. Mean day time temperature recorded as 37.2°C & for the recent week 190.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.1/1.2 knots.

Tandojam (Lower Sindh)

Rainfall reported as 13.2 mm from Tandojam during the week; however, cloudiness in the morning/evening recorded as 1.6/4.6 Oktas while, average relative humidity observed as 74%. Mean day time temperature recorded as 37.2°C & for the recent week 183.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 2.9/3.6 knots.

Usta Muhammad (Eastern Balochistan)

Dry weather reported from Usta Muhammad during the week; however, cloudiness in the morning/evening recorded 1.7/0.9 Oktas while, average relative humidity observed as 55%. Mean day time temperature recorded as 40.7°C & for the recent week 212.5 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 3.1/4.9 knots.

Quetta (Northern Baluchistan)

Dry weather reported from Quetta during the week; however, cloudiness in the morning/evening recorded as 0.9/2.9 Oktas while, average relative humidity observed as 27.0%. Mean day time temperature recorded as 38.0°C & for the recent

week 179.4 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 2.4/3.6 knots.

**Past Weather for Sub-Regional Agricultural
Plains (from 10th July to 16th July, 2017)****Multan**

Rainfall reported as 12.0 mm from Multan during the week; however, cloudiness in the morning/evening recorded as 2.8/1.8 Oktas while, average relative humidity observed as 60%. Mean day time temperature recorded as 37.8°C & for the recent week 200.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 10.4/7.7 knots.

Lahore

Rainfall reported as 75.42 mm from Lahore during the week; however, cloudiness in the morning/evening recorded as 2.8/5.2 Oktas while, average relative humidity observed as 73%. Mean day time temperature recorded as 34.7°C & for the recent week 180.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.3/1.7 knots.

Zhob

Rainfall reported as 39.01 mm from Zhob during the week; however, cloudiness in the morning/evening recorded as 2.2/5.3 Oktas while, average relative humidity observed as 60%. Mean day time temperature recorded as 36.2°C & for the recent week 161.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 4.2/10.7 knots.

Murree

Rainfall reported as 146.10 mm from Murree during the week; however, cloudiness in the morning/evening recorded as 6.8/8.0 Oktas while, average relative humidity observed as 91%. Mean day time temperature recorded as 22.4°C & for the recent week 97.6 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.7/0.7 knots.

D.I. Khan

Rainfall reported as 21.0 mm from D.I.Khan during the week; however, cloudiness in the morning/evening recorded as 3.5/2.0 Oktas while, average relative humidity observed as 70%. Mean day time temperature recorded as 39.2°C & for the recent week 194.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.7/3.0 knots.

Peshawar

Rainfall reported as 64.02 mm from Peshawar during the week; however, cloudiness in the morning/evening recorded as 5.8/3.2 Oktas while, average relative humidity observed as 70%. Mean day time temperature recorded as 35.7°C & for the recent week 179.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.7/3.7 knots.

Kalam

Rainfall reported as 7.0 mm from Kalam during the week; however, cloudiness in the morning/evening recorded as 6.2/5.5 Oktas while, average relative humidity observed as 71%. Mean day time temperature recorded as 27.4°C & for the recent week 115.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/3.0 knots.

Gilgit

Rainfall reported as 7.31 mm from Gilgit during the week; However, cloudiness in the morning/evening recorded as 3.5/5.2 Oktas while, average relative humidity observed as 56%. Mean day time temperature recorded as 33.7°C & for the recent week 152.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/1.0 knots.

Skardu

Rainfall reported as 0.60 mm from Skardu during the week; However, cloudiness in the morning/evening recorded as 2.5/5.0 Oktas while, average relative humidity observed as 43%. Mean day time temperature recorded as 32.6°C & for the recent week 133.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/4.0 knots.

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

Cotton: Good condition, *flowering* stage completed.

Lower Sindh (Tandojam)

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

Cotton (HH-906): Good condition, *flowering* stage.

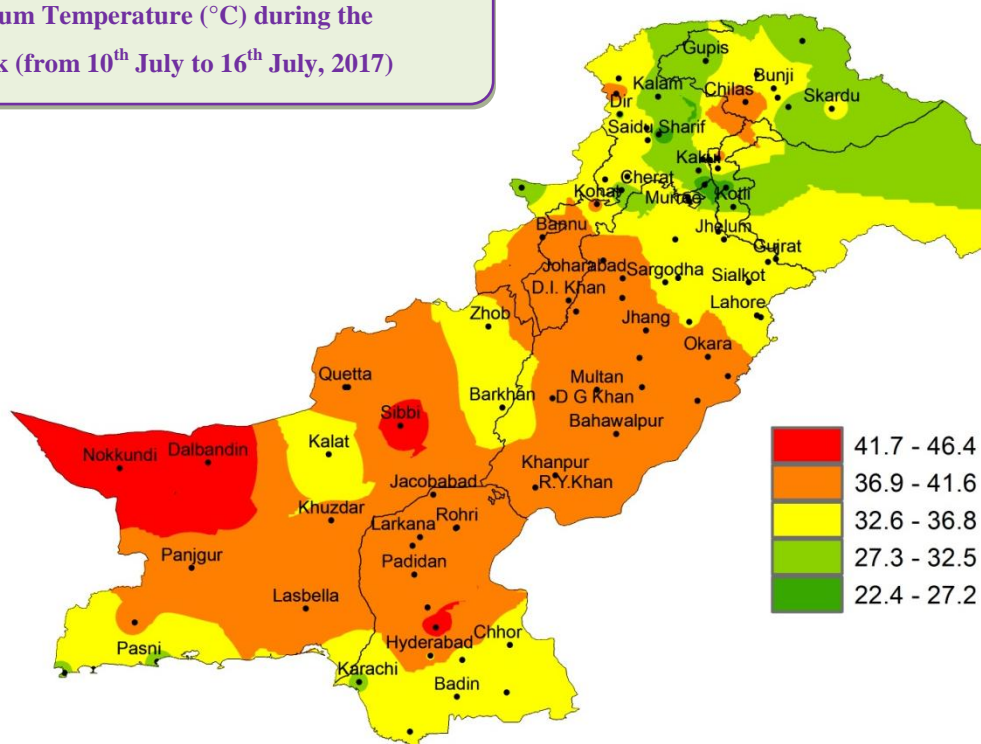
Northern Baluchistan (Quetta)

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

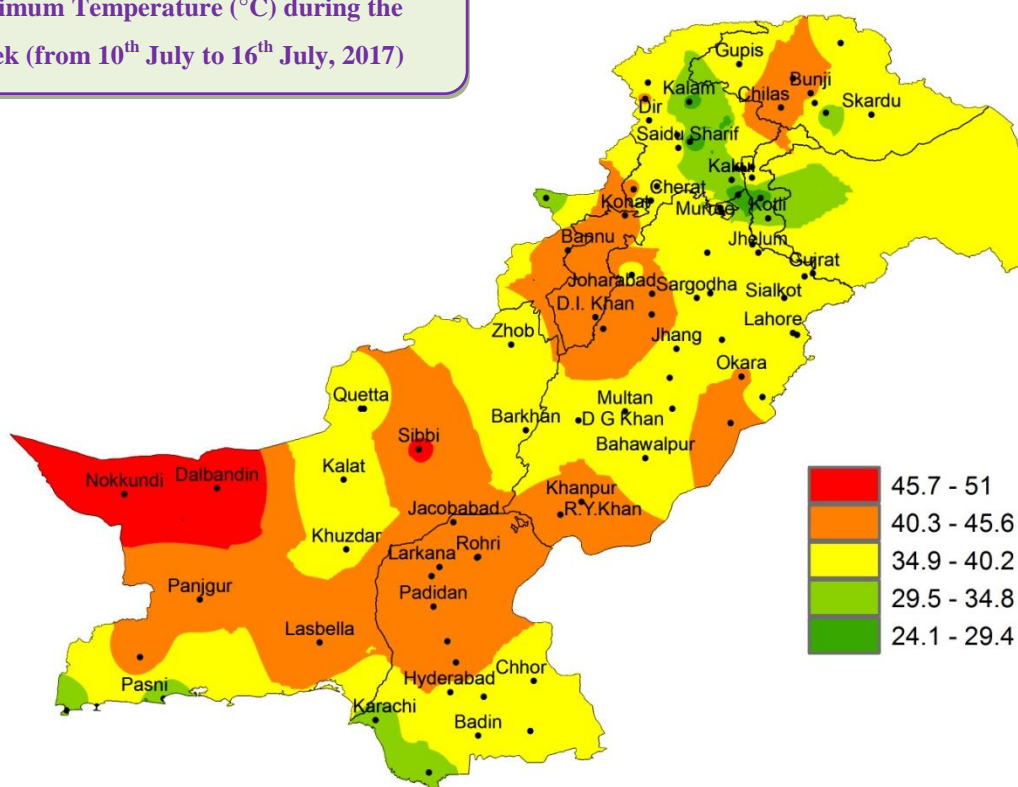
Eastern Baluchistan (Usta Muhammad)

Rice saplings are transferred in the fields of RAMC Usta Muhammad.

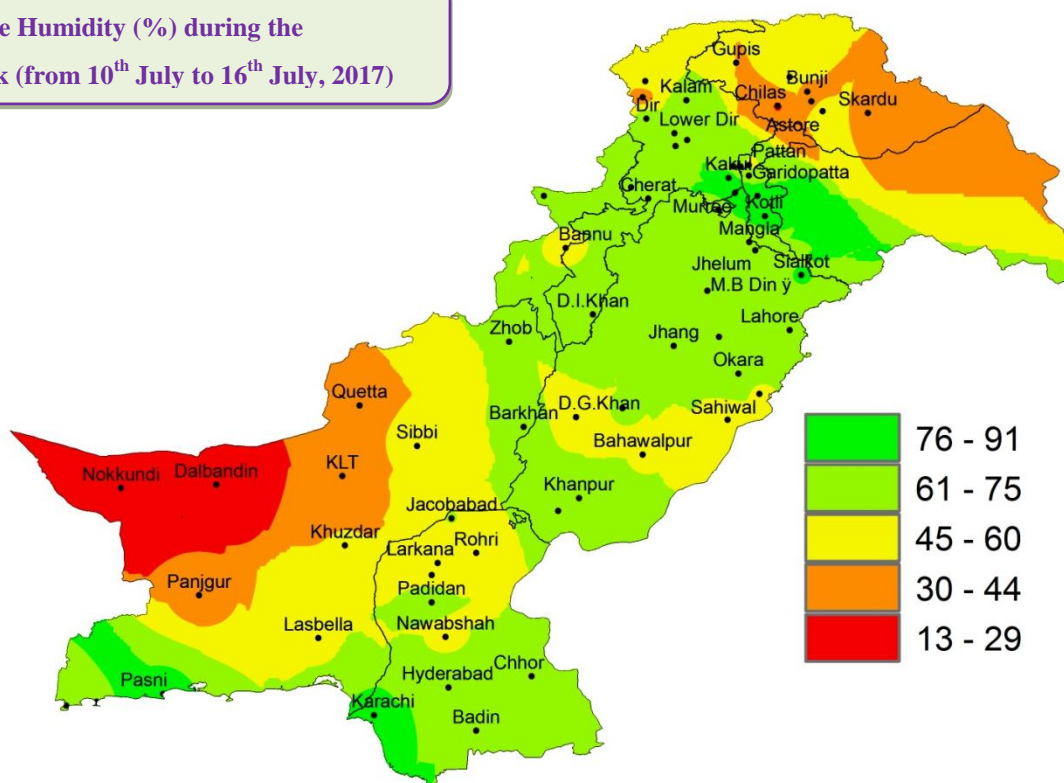
Mean Maximum Temperature (°C) during the
Previous week (from 10th July to 16th July, 2017)



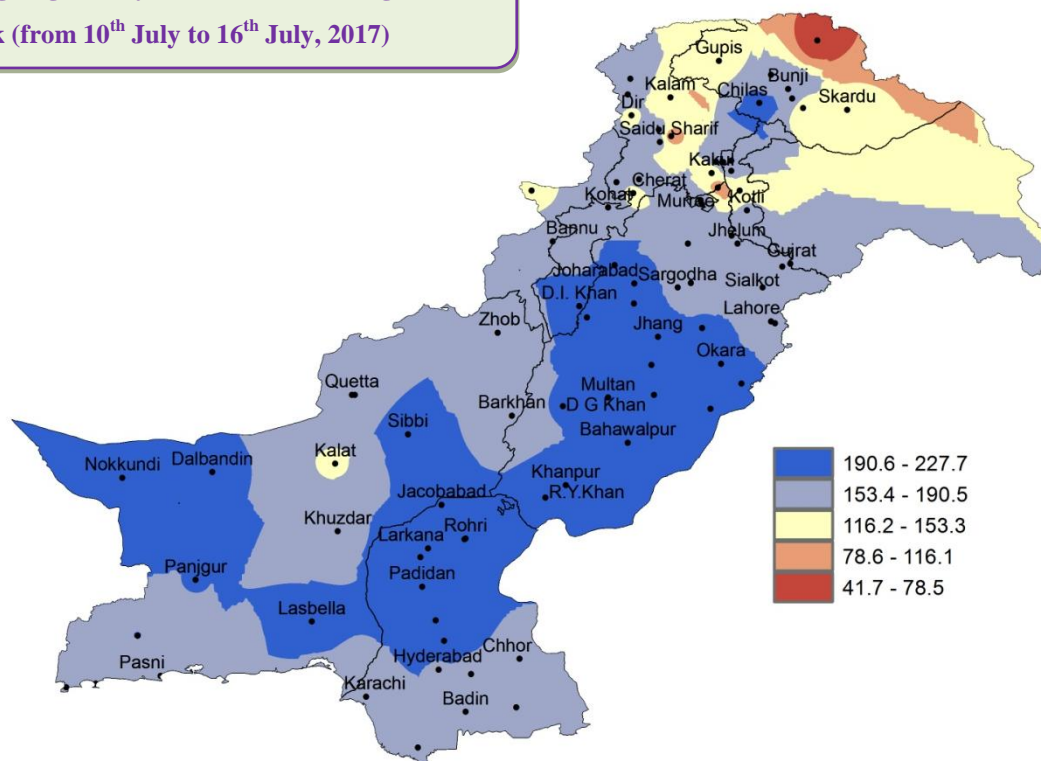
Highest maximum Temperature (°C) during the
Previous week (from 10th July to 16th July, 2017)



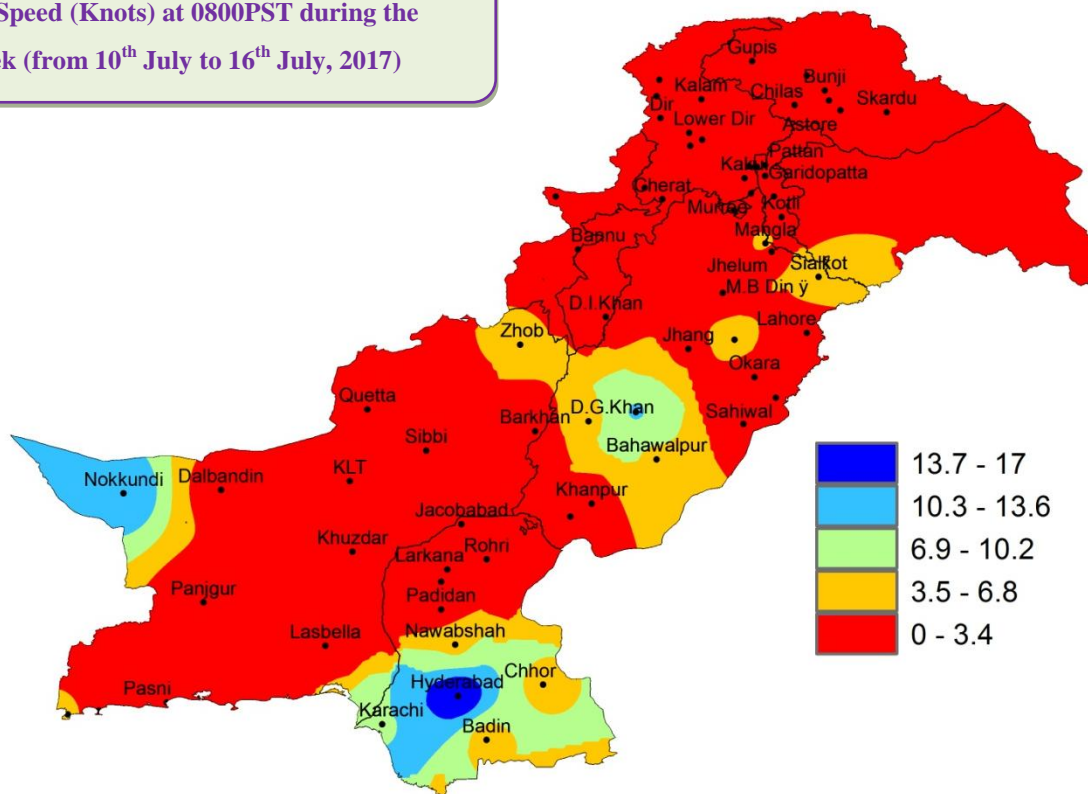
Mean Relative Humidity (%) during the
Previous week (from 10th July to 16th July, 2017)



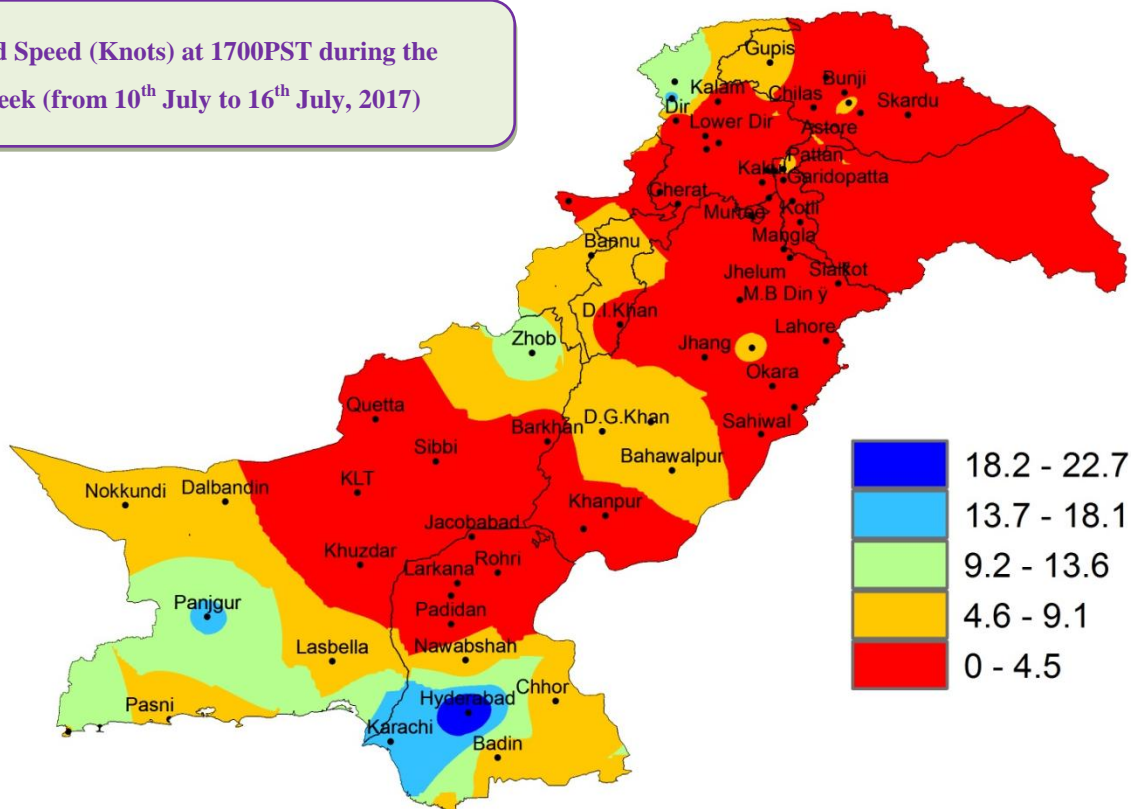
Total Growing Degree Days accumulated during the
Previous week (from 10th July to 16th July, 2017)



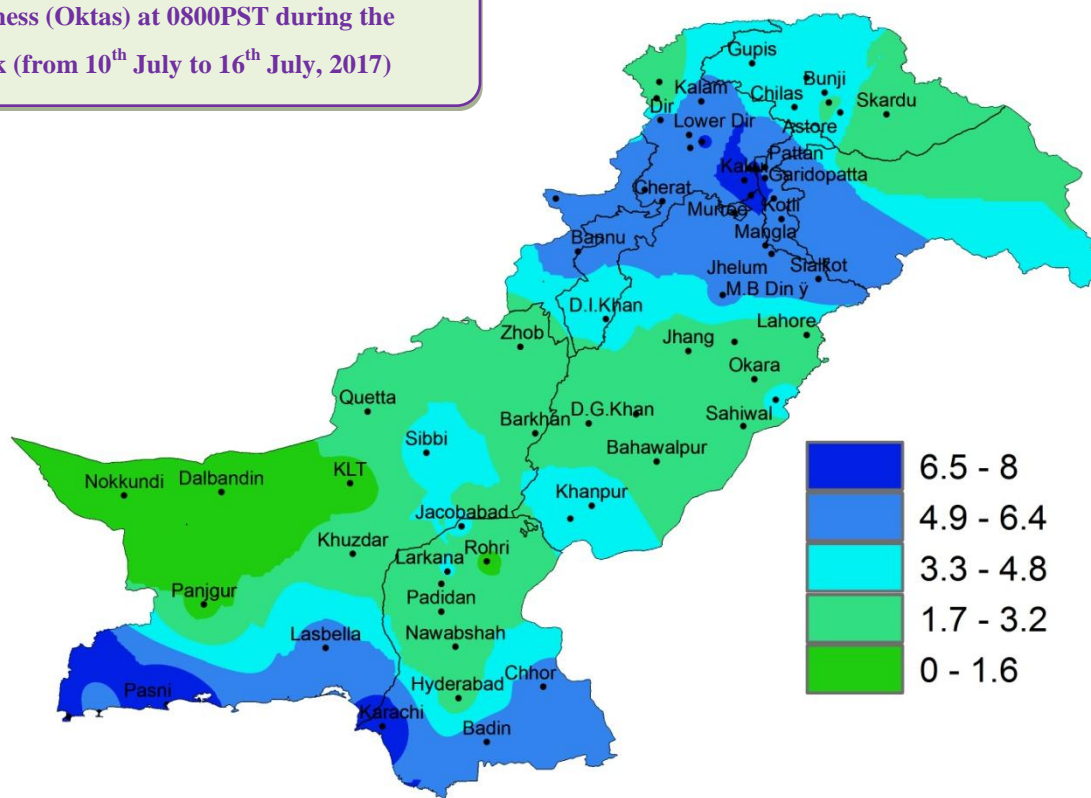
Mean Wind Speed (Knots) at 0800PST during the
Previous week (from 10th July to 16th July, 2017)



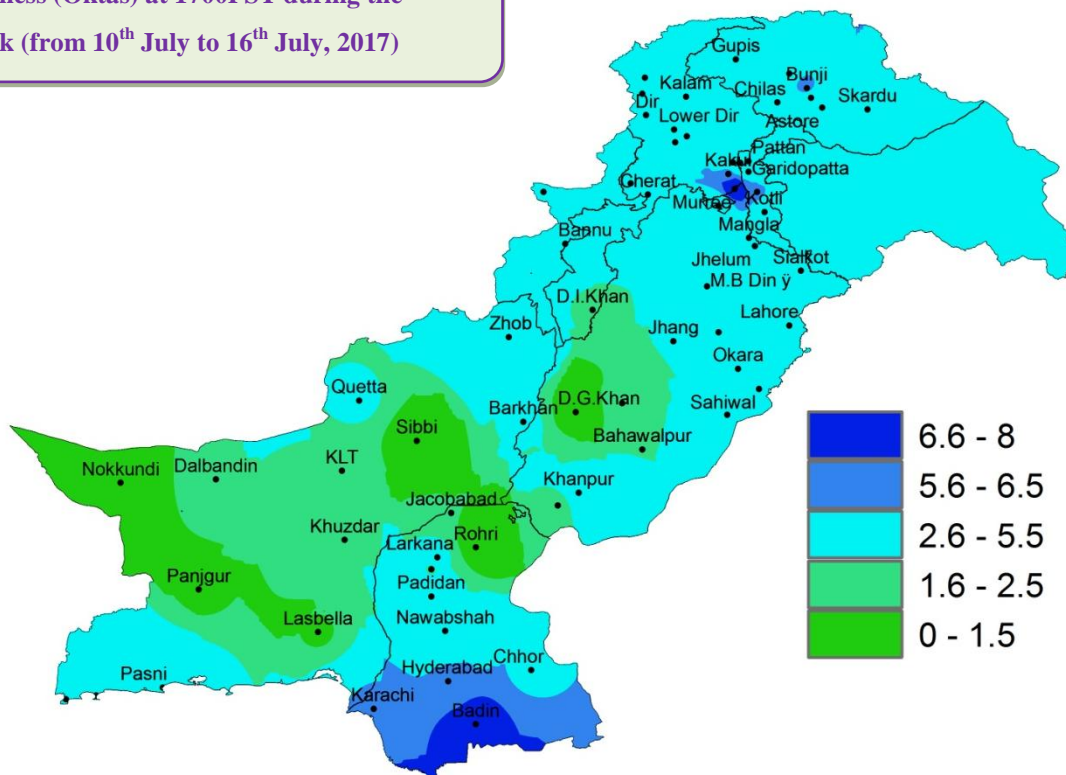
Mean Wind Speed (Knots) at 1700PST during the
Previous week (from 10th July to 16th July, 2017)



Mean Cloudiness (Oktas) at 0800PST during the
Previous week (from 10th July to 16th July, 2017)



Mean Cloudiness (Oktas) at 1700PST during the
Previous week (from 10th July to 16th July, 2017)



Weekly Weather Advisory for Farmers **(from 17th July to 23rd July, 2017)**

Seasonal low lies over north Balochistan. Monsoon currents are penetrating southern parts of the country and likely to continue during next 02 to 03 days. A shallow westerly wave is present along western and upper parts of the country and likely to affect during next few days.

MONDAY (17-07-2017)

Rain-thunderstorm (with isolated heavy falls) is expected at scattered places in Sindh, Balochistan (Zhob, Kalat, Sibbi, Quetta, Naseerabad, Makran divisions), Khyber-Pakhtunkhwa, FATA, Islamabad, upper Punjab (Lahore, Gujranwala, Rawalpindi, Sargodha, Faisalabad divisions) and Kashmir. Rain-thunderstorm is expected at isolated places in south Punjab (Bahawalpur, Multan, Sahiwal, D.G.Khan divisions) and Gilgit-Baltistan.

TUESDAY (18-07-2017)

Rain-thunderstorm (with isolated heavy falls) is expected at scattered places in Sindh, Balochistan (Zhob, Kalat, Sibbi, Quetta, Naseerabad, Makran divisions), Khyber-Pakhtunkhwa, FATA, Islamabad, upper Punjab (Lahore, Gujranwala, Rawalpindi, Sargodha, Faisalabad divisions) and Kashmir. Rain-thunderstorm is expected at isolated places in south Punjab (Bahawalpur, Multan, Sahiwal, D.G.Khan divisions) and Gilgit-Baltistan.

WEDNESDAY (19-07-2017)

Rain-thunderstorm (with isolated heavy falls) is expected at scattered places in Sindh, Balochistan (Zhob, Kalat, Sibbi, Quetta, Naseerabad, Makran divisions), Khyber-Pakhtunkhwa, FATA, Islamabad, upper Punjab (Lahore, Gujranwala, Rawalpindi, Sargodha, Faisalabad divisions) and Kashmir. Rain-thunderstorm is expected at isolated places in south Punjab (Bahawalpur, Multan, Sahiwal, D.G.Khan divisions) and Gilgit-Baltistan.

THURSDAY (20-07-2017)

Rain-thunderstorm (with isolated heavy falls) is expected at scattered places in upper Punjab (Lahore, Gujranwala, Rawalpindi, Sargodha, Faisalabad divisions), Islamabad, upper KP (Malakand, Hazara, Peshawar, Mardan, Kohat divisions), FATA and Kashmir. Rain-thunderstorm is expected at isolated places in D.G.Khan, Zhob, Kalat divisions and Gilgit-Baltistan.

FRIDAY (21-07-2017)

Rain-thunderstorm (with isolated heavy falls) is expected at scattered places in upper Punjab (Lahore, Gujranwala, Rawalpindi, Sargodha, Faisalabad divisions), Islamabad, upper KP (Malakand, Hazara, Peshawar, Mardan, Kohat divisions), FATA and Kashmir. Rain-thunderstorm is expected at isolated places in D.G.Khan, Zhob, Kalat divisions and Gilgit-Baltistan.

SATURDAY (22-07-2017)

Rain-thunderstorm (with isolated heavy falls) is expected at scattered places in upper Punjab (Lahore, Gujranwala, Rawalpindi, Sargodha, Faisalabad divisions), Islamabad, KP, FATA and Kashmir. Rain-thunderstorm is expected at isolated places in Bahawalpur, Multan, Sahiwal, D.G.Khan, Zhob, Kalat divisions and Gilgit-Baltistan.

SUNDAY (23-07-2017)

Rain-thunderstorm (with isolated heavy falls) is expected at scattered places in upper Punjab (Lahore, Gujranwala, Rawalpindi, Sargodha, Faisalabad divisions), Islamabad, KP, FATA and Kashmir. Rain-thunderstorm is expected at isolated places in Bahawalpur, Multan, Sahiwal, D.G.Khan, Zhob, Kalat divisions and Gilgit-Baltistan.

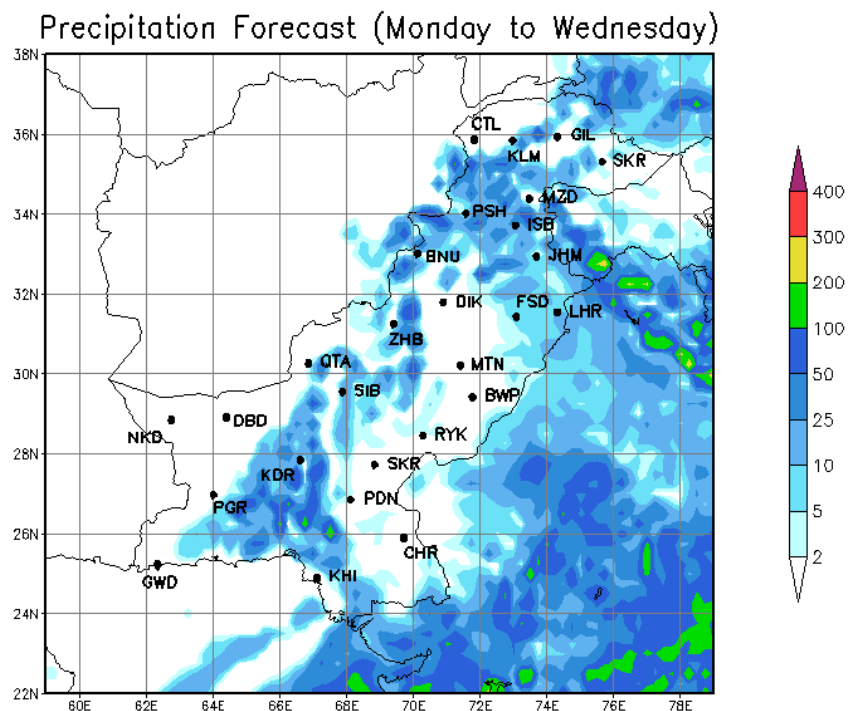
ADVISES FOR FARMERS

During the last week, light to moderate rainfall (with isolated heavy spells) occurred in most of the agricultural plains in most parts of the country except western Baluchistan. This may continue with almost the same pattern over isolated places of the country in coming days as well. Keeping in view the expected weather conditions following advises are suggested for farming community.

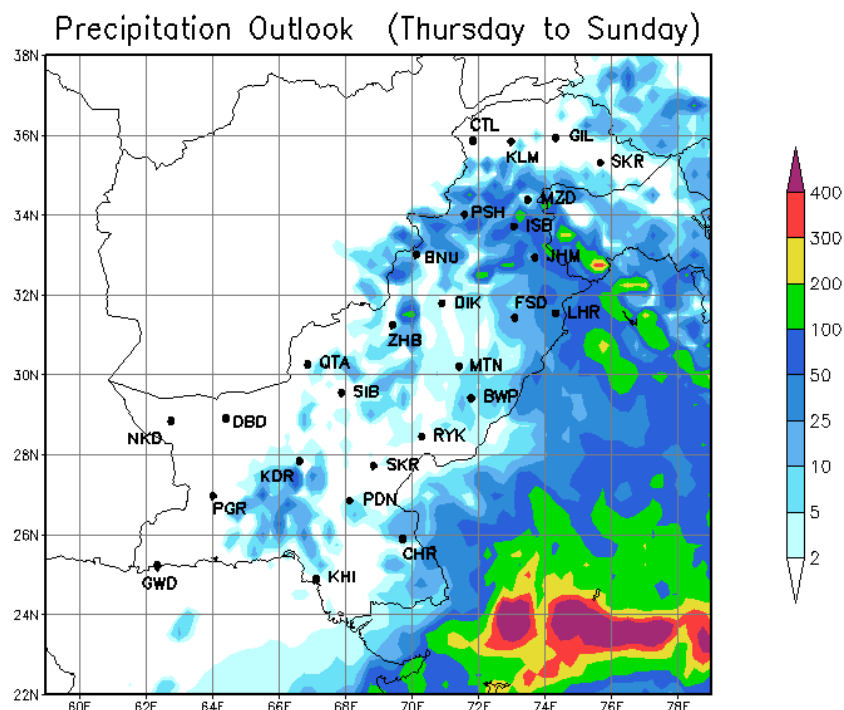
- Pest/viral attacks and more weeds growth are expected after heavy rains in standing crops in upper parts of the country. Farmers are therefore advised to take in time precautionary measures in this regard.
- Farmers of irrigated areas may irrigate the standing crops as per requirement in accordance with the expected weather conditions.
- Measures may be taken to preserve the crops and livestock from the harsh weather events like hailing, flooding and strong winds etc.

Weather Outlook from 17th July to 23rd July, 2017

The forecast from 17th July to 19th July, 2017 shows that light to moderate rainfall is expected at most places of KP, northern Punjab, eastern Baluchistan, coastal belt of Sindh, GB and Kashmir.



The Outlook from 20th July to 23rd July, 2017 shows that light to moderate rainfall is expected in most parts of Punjab, KP, GB, Kashmir and eastern Baluchistan.



National Weather Data of Selected Cities**(from 10th July to 16th July, 2017)**

Stations	Maximum/Nighttime 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	highest							
Astore	28	33	121	46	6	3	5	0	2
Badin	34	36	178	75	12	6	7	5	6
Bahawalnagar	40	42	196	59	20	3	4	2	3
Bahawalpur	38	40	200	60	2	2	3	6	5
Balakot	33	34	158	72	45	6	4	1	2
Bannu	39	43	183	58	2	5	4	1	8
Barkhan	34	37	164	62	19	3	3	0	2
Bunji	35	42	176	41	5	4	6	1	2
Cherat	29	35	134	74	50	6	5	3	3
Chhor	36	38	185	70	21	5	5	6	7
Chilas	40	44	205	28	0	4	4	2	3
Chitral	36	38	173	49	0	2	4	0	12
D.G.Khan	38	40	194	57	20	2	1	6	8
D.I.Khan	39	43	194	70	21	4	2	2	3
Dalbandin	46	51	201	14	0	0	3	1	5
Dir	32	35	146	70	36	5	5	0	2
Drosh	38	41	179	38	0	3	4	0	15
Faisalabad	37	39	191	67	68	2	3	1	1
Garidopatta	34	38	168	69	62	7	5	1	2
Gawader	34	35	177	75	0	6	4	0	12
Gilgit	34	42	153	56	7	4	5	0	1

Gupis	31	38	133	44	5	4	5	2	6
Hyderabad	37	39	187	72	17	3	6	17	23
Islamabad	34	36	170	65	208	6	3	0	1
Jacobabad	40	42	207	60	0	3	2	2	2
Jhang	38	39	200	62	4	2	3	3	3
Jhelum	35	38	181	72	123	6	5	2	2
Jiwani	32	33	170	74	0	7	4	5	9
Kakul	30	32	142	79	128	7	6	0	1
Kalam	27	29	116	71	7	6	6	0	3
Kalat	34	36	150	31	0	1	2	0	1
Karachi	32	34	174	78	15	7	6	10	14
Khanpur	39	40	201	63	0	4	4	3	4
Khuzdar	37	40	180	45	24	2	2	0	1
Kotli	33	34	163	78	95	6	4	1	2
Lahore	35	39	180	73	75	3	5	1	2
Larkana	41	43	213	55	0	4	3	3	2
Lasbella	39	43	195	58	7	5	1	0	9
Lower Dir	37	40	177	66	60	6	4	0	2
M.B Din	36	38	183	74	126	5	4	2	1
Malam Jabba	22	24	88	75	117	7	6	0	0
Mangla	34	37	174	73	81	6	4	4	3
Mir Khani	37	39	189	44	0	3	3	3	7
Moinjodaro	40	42	207	59	0	2	2	2	4
Multan(PBO)	38	39	201	60	12	3	2	10	8
Murree	22	24	98	91	146	7	8	1	1
Muzaffarabad	34	37	161	71	116	8	4	1	3

Nawabshah	41	44	206	57	12	3	5	6	7
Nokkundi	44	46	228	13	0	1	0	13	7
Okara	39	41	197	62	26	3	4	1	1
Padidan	40	42	203	63	0	3	4	2	3
Panjgur	40	41	191	37	0	1	1	0	14
Parachinar	30	33	135	63	46	5	5	3	3
Pasni	32	33	169	80	0	8	5	1	6
Pattan	38	40	192	54	6	5	3	1	6
Peshawar	36	41	179	70	64	6	3	2	4
Quetta	38	40	179	27	0	1	3	2	4
Rahim Yar Khan	40	42	203	63	0	3	2	2	2
Rawalakot	26	27	116	89	149	6	6	0	1
Rawalpindi	34	37	170	77	232	5	4	2	2
Rohri	40	43	216	57	0	1	1	1	0
Sahiwal	38	39	193	60	0	4	5	3	3
Saidu Sharif	35	38	166	67	26	6	3	0	0
Sialkot	33	36	170	76	174	6	5	5	4
Sibbi	43	46	209	51	17	4	0	1	4
Skardu	33	37	133	43	1	3	5	0	4
Tandojam	37	40	183	74	13	2	5	3	4

*** 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 سبب باب (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 2014-2012)