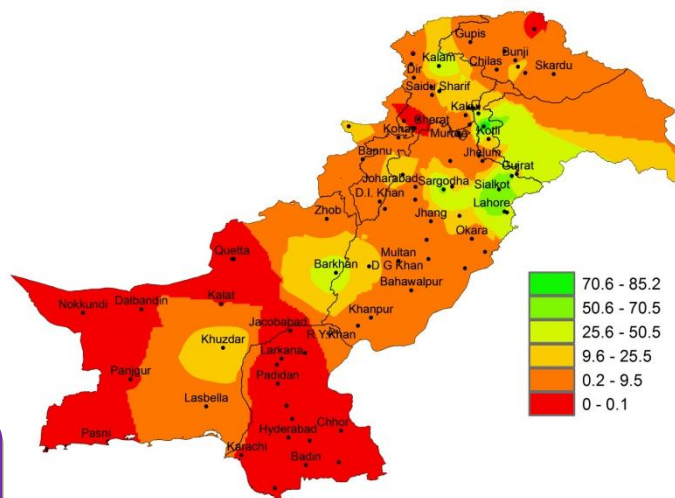


Weekly Weather and Crop Bulletin for Pakistan

**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 (from 3rd July to 9th July, 2017)**

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Highlights of Past Weather (from 3rd July to 9th July, 2017)

Above 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, GB and Kashmir during the week.
- Light rainfall was reported from isolated places of Balochistan.
- Light rainfall has been reported from a single station in Sindh.

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

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

Editor: Dr. Dildar Kazmi (Meteorologist)

Past Weather of Provinces (from 3rd July to 9th July, 2017)

Punjab

Light to moderate rainfall reported from most part of Punjab during the week. Weekly maximum and minimum temperatures recorded as 37.8°C & 26.7°C respectively. For the recent week on average 191.0 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 3.2/3.6 knots. During the previous week the highest amount of rainfall was recorded as 69.0 mm at Kot Addu & highest maximum temperature was recorded as 44.5°C at Bhakkar.

Balochistan

Light rainfall was recorded at isolated places of Balochistan province during the week. Weekly maximum and minimum temperatures recorded as 37.2°C & 24.5°C respectively. For the recent week on average 179.1 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 4.3/7.0 knots. During the previous week the highest amount of rainfall was recorded as 33.0 mm at Barkhan & highest maximum temperature was recorded as 46.0°C at Sibbi.

Khyber Pakhtunkhwa

Light to moderate rainfall reported from most part of Khyber Pakhtunkhwa during the week. Weekly maximum and minimum temperatures recorded as 35.2°C & 22.0°C respectively. For the recent week on average 165.2 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 0.7/4.1 knots. During the previous week the highest amount of rainfall was recorded as 40mm at Kalam & highest

maximum temperature was recorded as 42.0 °C at D.I. Khan.

Gilgit-Baltistan and Azad Jammu & Kashmir

Light to moderate rainfall reported from most part of Gilgit-Baltistan & Kashmir during the week. Weekly maximum and minimum temperatures recorded as 31.7°C & 19.1°C respectively. For the recent week on average 137.1 growing degree days were accumulated by the end of last week. Average relative humidity recorded as 53% and wind speed in the morning/evening recorded as 0.6/3.2 knots. During the previous week the highest amount of rainfall was recorded as 86.41mm at Rawalakot & highest maximum temperature was recorded as 42.0°C at Chilas.

Sindh

Light rainfall has been recorded at a single station in Sindh during the week. Weekly maximum and minimum temperatures recorded as 39.5°C & 28.0°C respectively. For the recent week, on average 200.3 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 6.9/8.4 knots. During the previous week the highest amount of rainfall was recorded as 0.05 mm at Karachi, highest maximum temperature was recorded as 46.1°C at Dadu.

Past Weather for Major Agricultural Plains (from 3rd July to 9th July, 2017)

Rawalpindi (Potohar region)

Rainfall reported as 2.20 mm from Rawalpindi during the week; however, cloudiness in the morning/evening recorded as 1.5/3.5 Oktas while, average relative humidity observed as 61%. Mean day time temperature recorded as 37.7°C & for the recent week 186.9 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.6/1.6 knots.

Faisalabad (Central Punjab)

Rainfall reported as 14.0 mm from Faisalabad during the week; however, cloudiness in the morning/evening recorded as 0.9/1.4 Oktas while, average relative humidity observed as 61%. Mean day time temperature recorded as 37.6°C & for the recent week 191.5 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.9/1.4 knots.

Tandojam (Lower Sindh)

Dry weather reported from Tandojam during the week; however, cloudiness in the morning/evening recorded as 1.2/1.0 Oktas while, average relative humidity observed as 64%. Mean day time temperature recorded as 37.5°C & for the recent week 186.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 4.3/6.5 knots.

Usta Muhammad (Eastern Balochistan)

Dry weather reported from Usta Muhammad during the week; however, cloudiness in the morning/evening recorded 1.4/1.4 Oktas while, average relative humidity observed as 57%. Mean day time temperature recorded as 40.1°C & for the recent week 211.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 4.2/4.5 knots.

Quetta (Northern Baluchistan)

Rainfall reported as 3.8 mm from Quetta during the week; however, cloudiness in the morning/evening recorded as 1.4/1.9 Oktas while, average relative humidity observed as 30.0%. Mean day time temperature recorded as 38.0°C & for the recent

week 162.4 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 2.1/3.1 knots.

Past Weather for Sub-Regional Agricultural Plains (from 3rd July to 9th July, 2017)

Multan

Rainfall reported as 2.0 mm from Multan during the week; however, cloudiness in the morning/evening recorded as 1.6/2.1 Oktas while, average relative humidity observed as 56%. Mean day time temperature recorded as 38.5°C & for the recent week 202.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 6.3/10.3 knots.

Lahore

Rainfall reported as 23.0 mm from Lahore during the week; however, cloudiness in the morning/evening recorded as 0.9/4.6 Oktas while, average relative humidity observed as 62%. Mean day time temperature recorded as 37.0°C & for the recent week 188.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.6/2.3 knots.

Zhob

Rainfall reported as 2.0 mm from Zhob during the week; however, cloudiness in the morning/evening recorded as 0.6/2.3 Oktas while, average relative humidity observed as 51%. Mean day time temperature recorded as 37.4°C & for the recent week 179.0 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 4.3/10.1 knots.

Murree

Rainfall reported as 7.01 mm from Murree during the week; however, cloudiness in the morning/evening recorded as 3.7/5.4 Oktas while, average relative humidity observed as 76%. Mean day time temperature recorded as 24.0°C & for the recent week 105.2 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.6/0.9 knots.

D.I. Khan

Rainfall reported as 8.0 mm from D.I.Khan during the week; however, cloudiness in the morning/evening recorded as 0.7/1.1 Oktas while, average relative humidity observed as 64%. Mean day time temperature recorded as 39.9°C & for the recent week 193.5 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 1.7/1.7 knots.

Peshawar

Dry weather reported from Peshawar during the week; however, cloudiness in the morning/evening recorded as 1.4/3.1 Oktas while, average relative humidity observed as 51%. Mean day time temperature recorded as 39.6°C & for the recent week 197.5 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 2.0/6.6 knots.

Kalam

Rainfall reported as 40.0 mm from Kalam during the week; however, cloudiness in the morning/evening recorded as 4.4/5.4 Oktas while, average relative humidity observed as 70%. Mean day time temperature recorded as 28.0°C & for the recent week 105.8 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/2.9 knots.

Gilgit

Rainfall reported as 1.01 mm from Gilgit during the week; However, cloudiness in the morning/evening recorded as 4.6/5.6 Oktas while, average relative humidity observed as 52%. Mean day time temperature recorded as 33.3°C & for the recent week 146.6 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/3.7 knots.

Skardu

Rainfall reported as 1.62 mm from Skardu during the week; However, cloudiness in the morning/evening recorded as 3.9/5.4 Oktas while, average relative humidity observed as 47%. Mean day time temperature recorded as 29.2°C & for the recent week 121.3 growing degree days accumulated by the end of last week. Wind speed recorded in the morning/evening as 0.0/3.0 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, *Budding* 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.

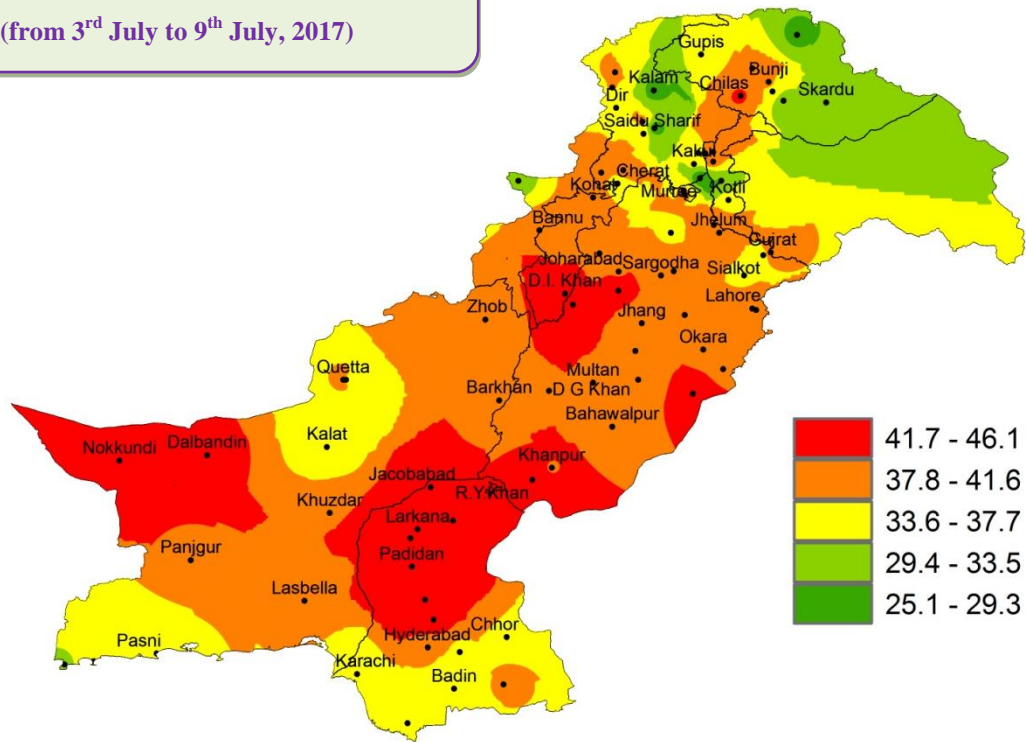
Northern Baluchistan (Quetta)

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

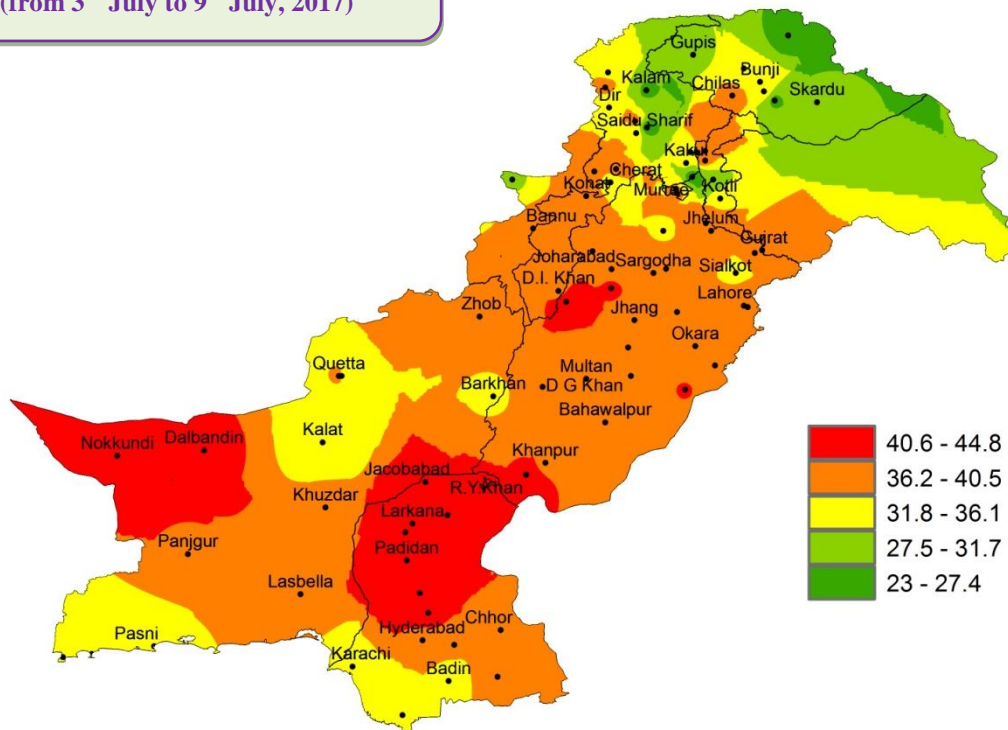
Eastern Baluchistan (Usta Muhammad)

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

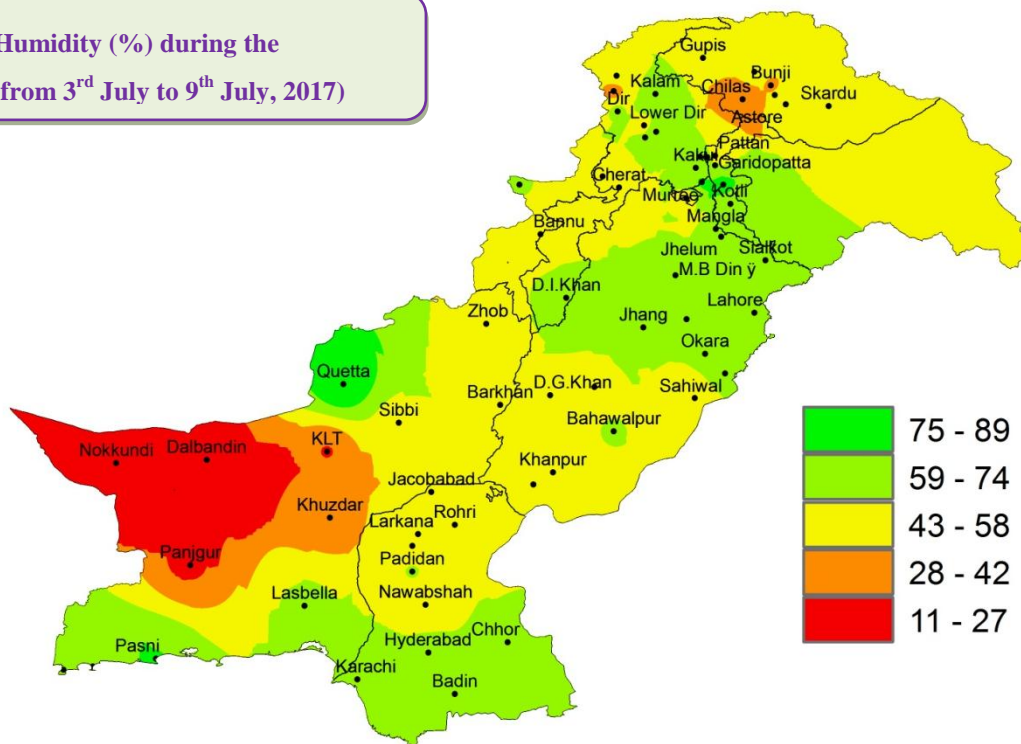
Mean Maximum Temperature (°C) during the
Previous week (from 3rd July to 9th July, 2017)



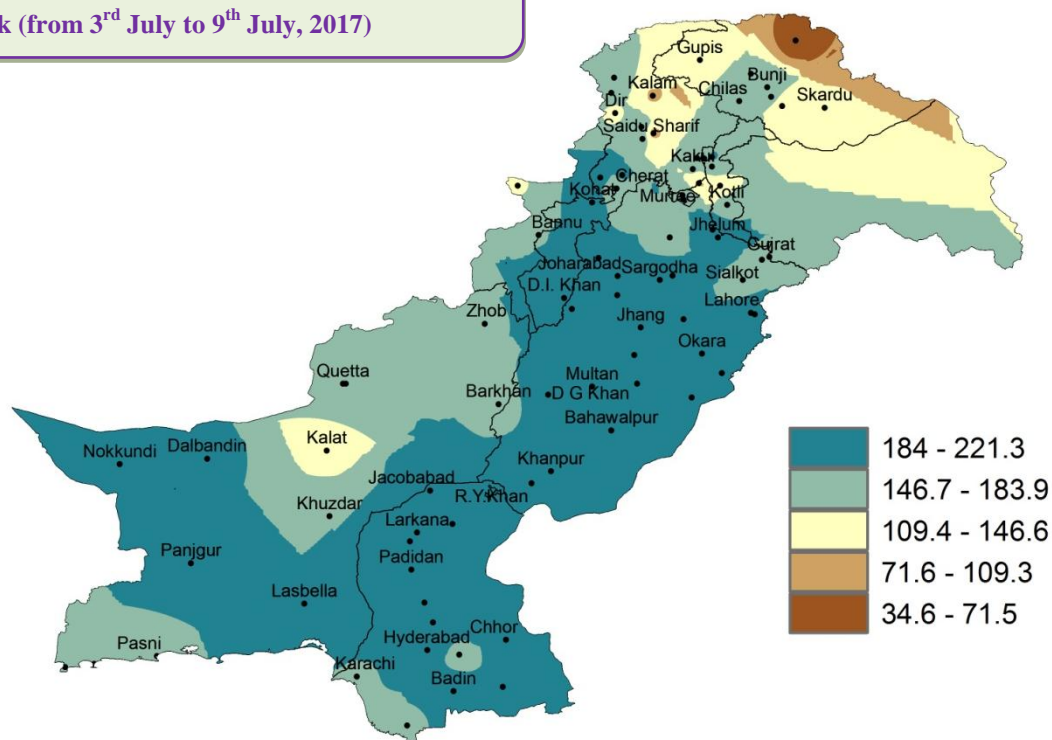
Highest maximum Temperature (°C) during the
Previous week (from 3rd July to 9th July, 2017)



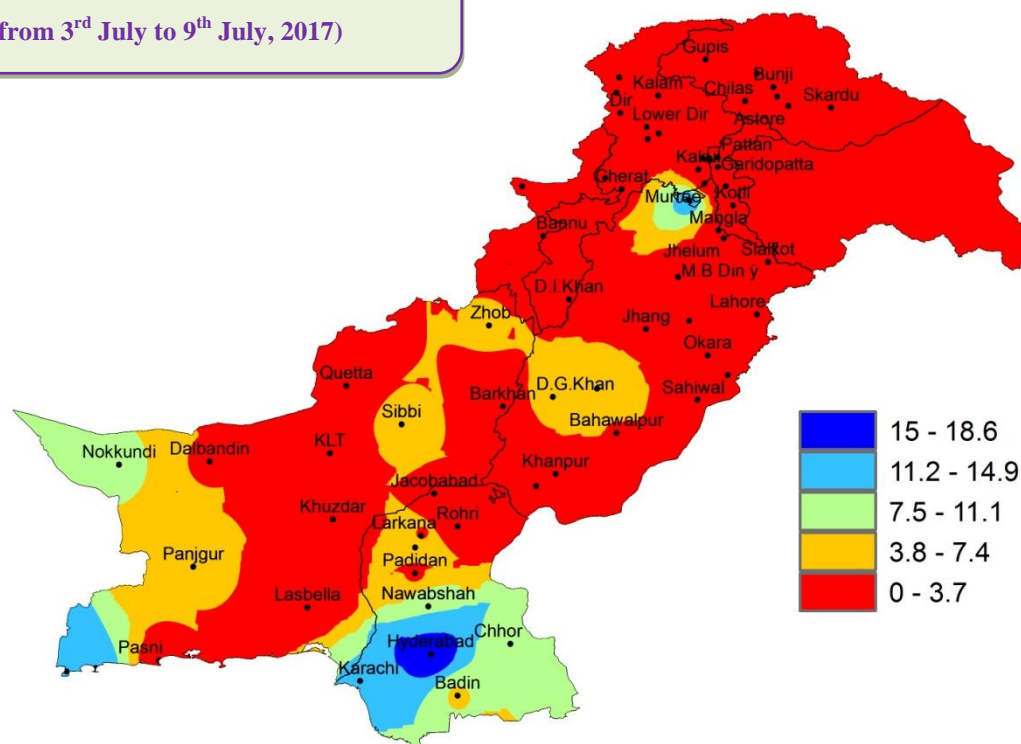
Mean Relative Humidity (%) during the
Previous week (from 3rd July to 9th July, 2017)



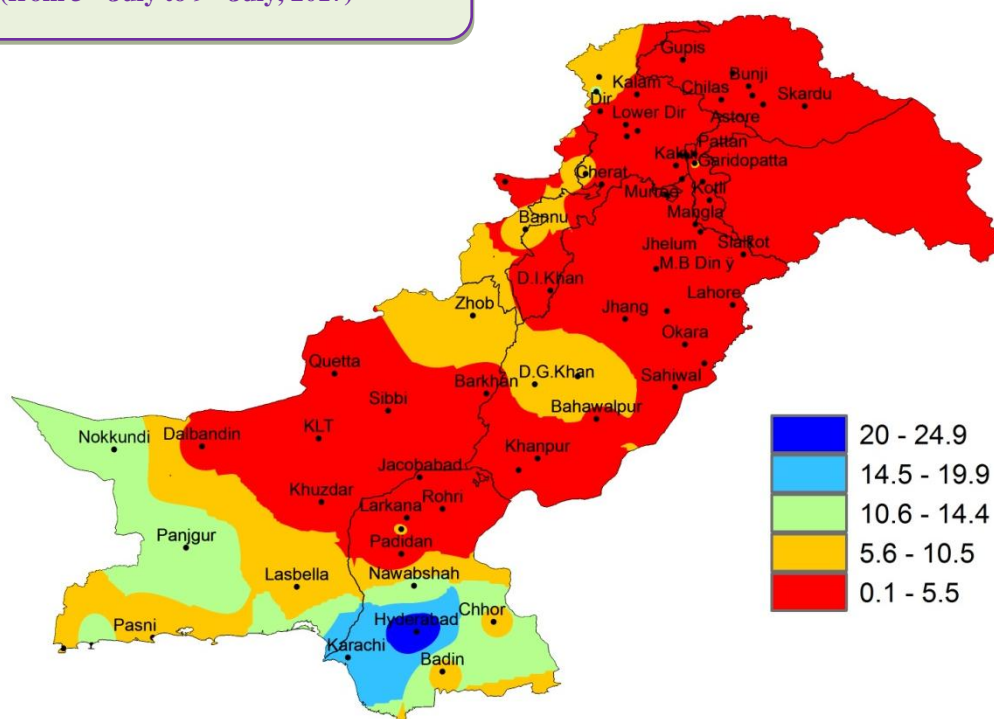
Total Growing Degree Days accumulated during the
Previous week (from 3rd July to 9th July, 2017)



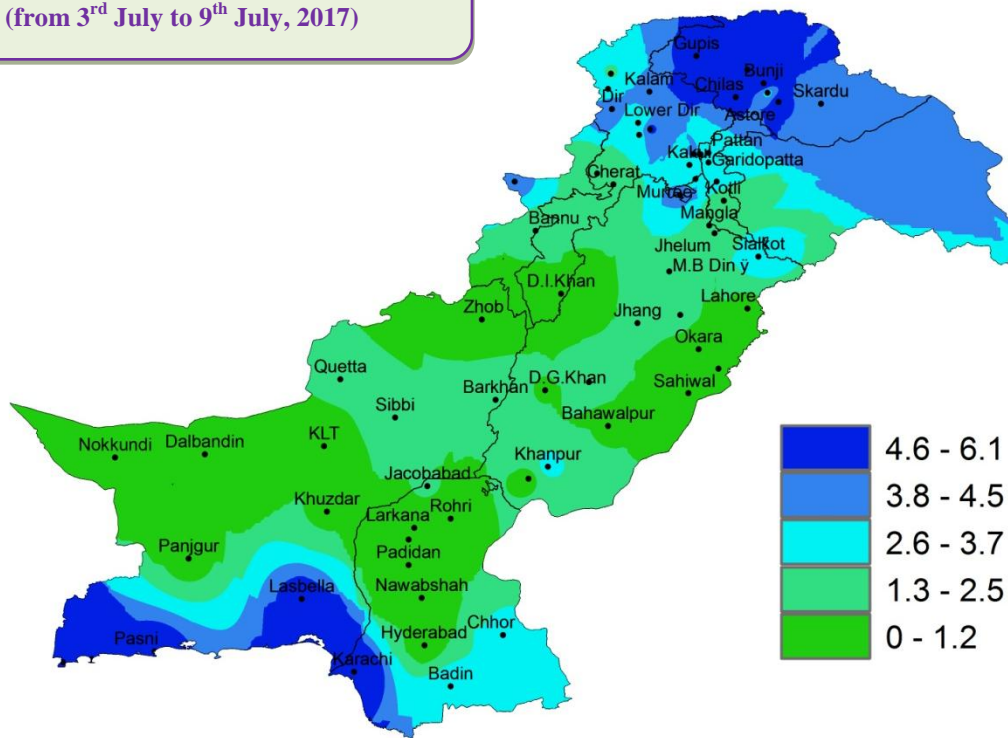
Mean Wind Speed (Knots) at 0800PST during the
Previous week (from 3rd July to 9th July, 2017)



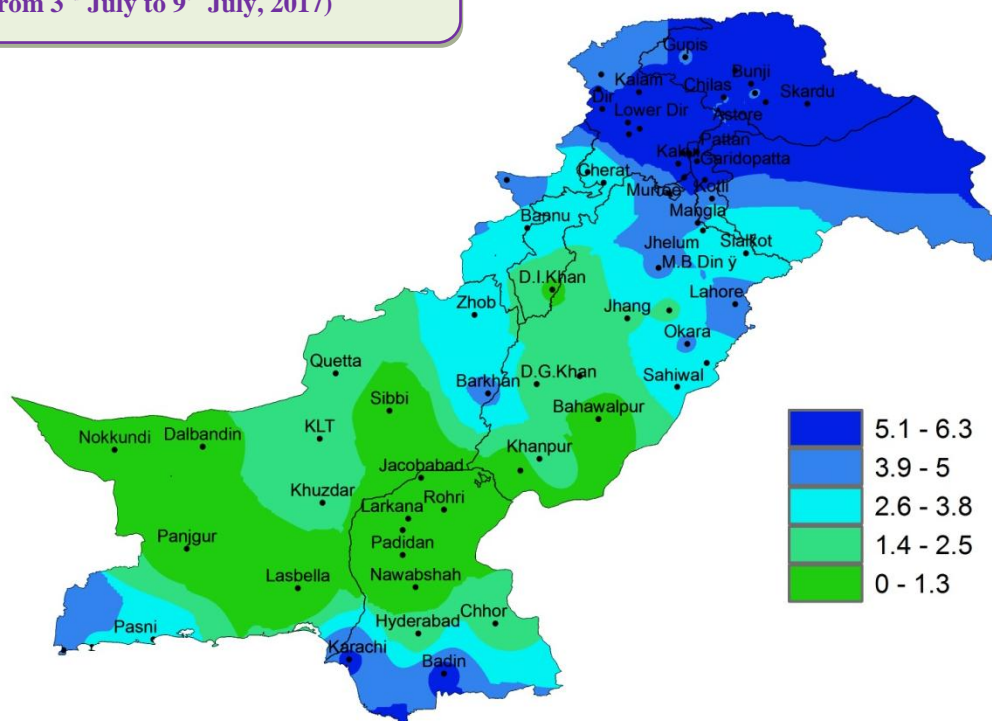
Mean Wind Speed (Knots) at 1700PST during the
Previous week (from 3rd July to 9th July, 2017)



Mean Cloudiness (Oktas) at 0800PST during the
Previous week (from 3rd July to 9th July, 2017)



Mean Cloudiness (Oktas) at 1700PST during the
Previous week (from 3rd July to 9th July, 2017)



Weekly Weather Advisory for Farmers **(from 10th July to 16th July, 2017)**

Seasonal low lies over northeast Balochistan. A shallow westerly wave is still affecting upper parts of the country and likely to move northeastwards during next 24 hours. Monsoon currents are expected to penetrate in upper parts of Pakistan from Sunday/Monday that will grip most parts of the country during the mid week. A fresh westerly wave is also expected to grip upper parts of the country during the mid week.

MONDAY (10-07-2017)

Mainly hot and humid weather is expected in most parts of the country. However scattered rain-thunderstorm (with few heavy falls) with gusty winds are expected at scattered places of Hazara, Rawalpindi, Gujranwala divisions and Kashmir and Islamabad. Rain-thunderstorm with gusty winds is also expected at isolated places of Malakand, Peshawar, Lahore, Sargodha, Faisalabad, Zhob and Quetta divisions.

TUESDAY (11-07-2017)

Rain-thunderstorm with isolated heavy to very heavy falls (with strong gusty winds) is expected at a number of places in Islamabad, upper Punjab (Rawalpindi, Gujranwala, Lahore, Sargodha, Faisalabad divisions) and Kashmir, while rain-thunderstorm with isolated heavy falls (with strong gusty winds) also expected at scattered places in Southern Punjab (Multan, D.G.Khan, Bahawalpur, Sahiwal divisions), KP, FATA and Gilgit-Baltistan. Hot and very humid weather is expected elsewhere in the country.

WEDNESDAY (12-07-2017)

Rain-thunderstorm with isolated heavy to very heavy falls (with strong gusty winds) is expected at a number of places in Islamabad, upper Punjab (Rawalpindi, Gujranwala, Lahore, Sargodha, Faisalabad divisions) and Kashmir, while rain-thunderstorm with isolated heavy falls (with strong gusty winds) also expected at scattered places in Southern Punjab (Multan, D.G.Khan, Bahawalpur, Sahiwal divisions), KP, FATA and Gilgit-Baltistan. Hot and very humid weather is expected elsewhere in the country.

THURSDAY (13-07-2017)

Rain-thunderstorm with isolated heavy to very heavy falls (with strong gusty winds) is expected at a number of places in Islamabad, upper Punjab (Rawalpindi, Gujranwala, Lahore, Sargodha, Faisalabad divisions) and Kashmir, while rain-thunderstorm with isolated heavy falls (with strong gusty winds) also expected at scattered places in Southern Punjab (Multan, D.G.Khan, Bahawalpur, Sahiwal divisions), KP, FATA and Gilgit-

Baltistan. Hot and very humid weather is expected elsewhere in the country.

FRIDAY (14-07-2017)

Rain/thunderstorm with moderate to heavy falls (with gusty winds) expected at scattered places in Sindh, eastern Balochistan (Zhob, Sibbi, Naseerabad and Kalat divisions), Rawalpindi, Gujranwala, Hazara, Malakand divisions, Islamabad, upper FATA and Kashmir. Isolated rain-thunderstorm is also expected in southern Punjab (Multan, D.G Khan, Sahiwal, Bahawalpur divisions).

SATURDAY (15-07-2017)

Rain/thunderstorm with moderate to heavy falls (with gusty winds) expected at scattered places in Sindh, eastern Balochistan (Zhob, Sibbi, Naseerabad and Kalat divisions), Rawalpindi, Gujranwala, Hazara, Malakand divisions, Islamabad, upper FATA and Kashmir. Isolated rain-thunderstorm is also expected in southern Punjab (Multan, D.G Khan, Sahiwal, Bahawalpur divisions).

SUNDAY (16-07-2017)

Mainly hot and humid weather is expected in most parts of the country. However rain-thundershowers with gusty winds are expected at scattered places of Kashmir, while at isolated places of Malakand, Hazara, Rawalpindi, Gujranwala, Lahore, Sargodha, Faisalabad divisions and Islamabad.

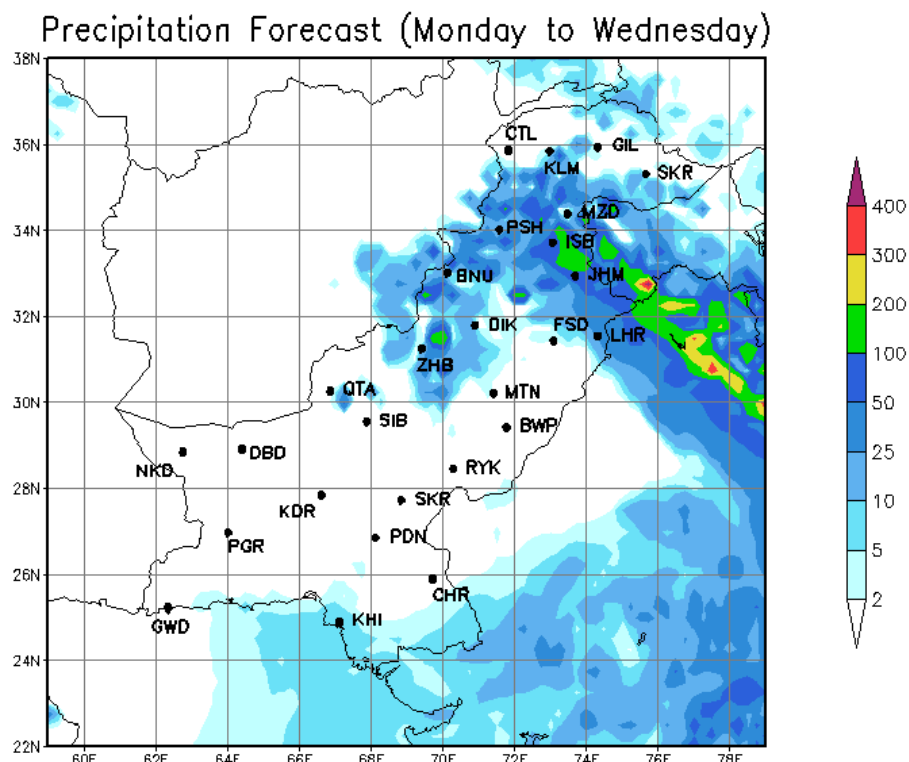
ADVISES FOR FARMERS

During the last week, light to moderate rainfall occurred in most of the agricultural plains in upper half of the country. This may continue with almost the same pattern over northern parts of the country in coming days as well; however, hot and humid weather is expected in rest of the country. Keeping in view the expected weather conditions following advises are suggested for farming community.

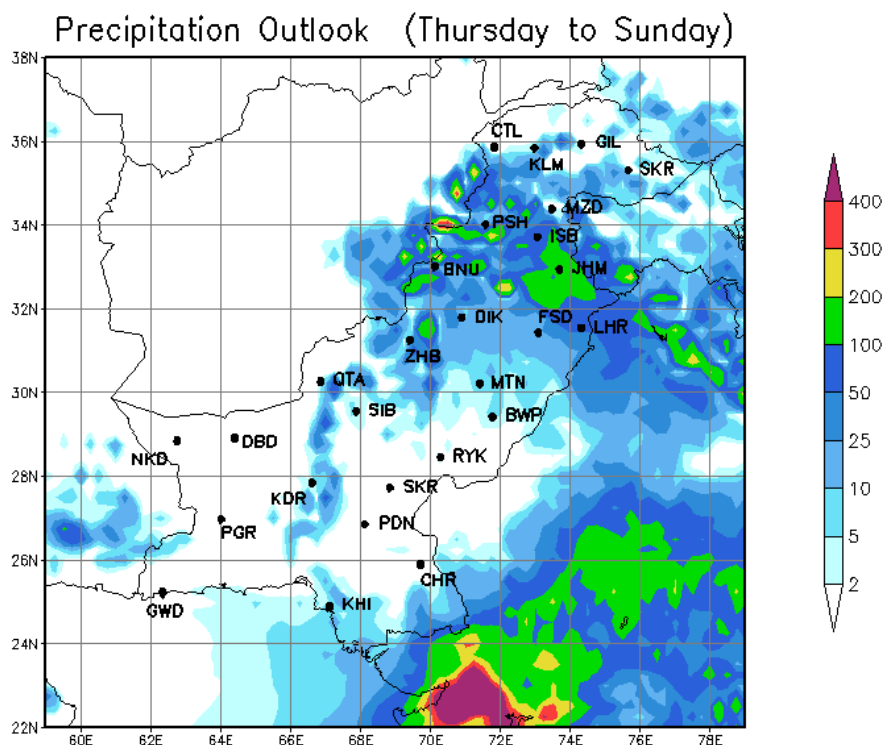
- Pest/viral attacks and more weeds growth are expected after heavy rains in standing crops in upper parts of the country. Farmers are therefore advised to take in time precautionary measures in this regard.
- Farmers of irrigated areas may irrigate the standing crops as per requirement in accordance 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 10th July to 16th July, 2017

The forecast from 10th July to 12th July, 2017 shows that dry weather is expected in most parts of the country. However, light to moderate rainfall is expected at particular places of northern Punjab, northern Baluchistan, KP, GB and Kashmir.



The Outlook from 13th July to 16th July, 2017 shows that light to moderate rainfall is expected in most parts of Punjab, KP, GB, Kashmir, north-eastern Balochistan and coastal belt of Sindh.



National Weather Data of Selected Cities**(from 3rd July to 9th 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	26	30	106	54	2	5	6	1	4
Badin	35	36	194	67	0	3	5	7	9
Bahawalnagar	41	43	202	53	9	1	3	2	4
Bahawalpur	39	41	204	58	2	1	0	3	5
Balakot	34	36	160	61	19	4	6	0	1
Bannu	39	41	183	50	6	2	3	0	6
Barkhan	35	39	171	55	33	2	4	0	3
Bunji	34	38	167	41	0	6	6	1	2
Cherat	33	34	153	54	0	2	3	2	3
Chhor	37	38	193	64	0	3	2	9	10
Chilas	38	42	184	30	1	5	5	2	3
Chitral	36	38	164	53	0	2	4	0	9
D.G.Khan	39	42	201	56	14	1	2	6	8
D.I.Khan	40	42	194	64	8	1	1	2	2
Dalbandin	44	44	198	11	0	0	1	3	4
Dir	33	35	138	62	8	5	6	0	2
Drosh	37	38	165	35	0	3	5	0	11
Faisalabad	38	41	192	61	14	1	1	1	1
Garidopatta	37	39	175	60	37	3	6	0	6
Gawader	35	36	183	70	0	5	4	14	12
Gilgit	33	39	147	52	1	5	6	0	4

Gupis	30	34	120	47	1	5	5	1	5
Hyderabad	38	39	193	63	0	1	2	19	25
Islamabad	37	38	179	53	5	4	4	15	2
Jacobabad	41	45	210	55	0	1	0	3	3
Jhang	38	40	197	62	2	1	2	3	3
Jhelum	39	40	202	59	0	1	3	1	3
Jiwani	33	33	173	72	0	5	5	15	9
Kakul	33	35	154	60	1	3	5	0	1
Kalam	27	28	106	70	40	4	5	0	3
Kalat	32	34	130	26	0	1	2	0	1
Karachi	34	35	183	71	0	6	5	12	15
Khanpur	40	42	208	55	0	3	2	2	2
Khuzdar	38	42	183	33	19	1	2	0	4
Kotli	35	36	173	63	19	1	4	1	2
Lahore	37	38	189	62	23	1	5	1	2
Larkana	43	46	219	54	0	1	1	3	4
Lasbella	39	40	196	62	6	5	0	0	10
Lower Dir	39	40	184	54	2	2	5	0	3
M.B Din	38	40	191	64	17	2	4	1	1
Malam Jabba	23	26	93	68	20	5	5	0	0
Mangla	38	39	189	60	4	2	4	1	4
Mir Khani	36	38	171	43	23	3	5	1	5
Moinjodaro	42	46	212	50	0	0	1	6	6
Multan(PBO)	39	41	202	56	2	2	2	6	10
Murree	24	25	105	76	7	4	5	1	1
Muzaffarabad	36	38	166	64	29	3	6	0	2

Nawabshah	43	44	214	48	0	1	1	11	12
Nokkundi	44	45	221	13	0	0	0	8	13
Okara	38	41	194	59	0	1	4	1	3
Padidan	42	43	208	59	0	1	1	3	2
Panjgur	40	41	195	25	0	1	0	6	13
Parachinar	31	32	144	59	13	4	5	3	4
Pasni	34	35	178	74	0	5	3	1	9
Pattan	39	41	189	48	3	4	5	1	3
Peshawar	40	41	198	51	0	1	3	2	7
Quetta	38	39	162	30	4	1	2	2	3
Rahim Yar Khan	41	43	208	56	7	1	0	2	1
Rawalakot	28	29	116	80	86	3	6	0	1
Rawalpindi	38	40	187	61	2	2	4	1	2
Sahiwal	38	41	194	62	3	1	3	3	3
Saidu Sharif	34	36	160	58	3	3	5	0	3
Sialkot	36	38	182	62	60	3	3	3	5
Skardu	29	33	121	47	2	4	5	0	3
Tandojam	38	38	186	64	0	1	1	4	7
Usta.M	40	43	211	57	0	1	1	4	5
Zhob	37	39	179	51	2	1	3	4	10

*** 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)