

WEATHER IN PAKISTAN: HOT WEATHER SEASON (APRIL-JUNE 2006)

Akhlaq Jameel*, Naeem Shah* & S. Anzar Ali Jafri¹

Introduction:

In April 2006, few westerly low-pressure waves passed across the country. A relatively strong western disturbance affected northern and central parts of the country from 9th to 11th April. In May 2006, a number of westerly low pressure waves affected northern and central parts of the country but associated rainfall amount was mostly insignificant except during the period from 17th to 21st. The highest maximum temperatures in plains of the country ranged from 48 – 50° C on a number of days during May 2006. Jacobabad recorded 51° C on 27th May. In June 2006, few westerly low-pressure waves affected mostly northern and central parts of the country. Duststorms hit plain areas of Punjab, Balochistan and Sindh during a number of days in May and June 2006 and on a few days in April 2006. A heavy duststorm with speed of 89 km/hour followed by rain hit Lahore on 27th June 2006.

Seasonal rainfall (April-June):

Seasonal rainfall out of 56 meteorological observing stations in the whole country, was in large excess in 5, moderate excess in 4, slight excess in 5, normal in 6, slight deficit in 2, moderate deficit in 13 and in large deficit in 21.

Rainfall was in large excess in Skardu, Bahawalnagar, Khanpur, Barkhan and Badin, moderate excess in Kotli, Cherat, Chaklala and Hyderabad, slight excess in Muzaffarabad, D.I.Khan, Sargodha, Lahore (A/P) and Zhob, normal in Bunji, Risalpur, Jhelum, Lahore (PBO), Khuzdar and Moenjodaro, slight deficit in Parachinar, and Balakot, moderate deficit in Gilgit, Chilas, Garhi Dupatta Chitral, Kakul, Murree, Sialkot, Mianwali, Faisalabad, Shorekot, Bahawalpur, Nokkundi and Nawabshah and was in large deficit in Gupis, Astor, Dir, Drosh, Saidu Sharif, Kohat, Peshawar, Multan, Quetta, Dalbandin, Sibbi, Kalat, Panjgur, Pasni, Jiwani, Jacobabad, Rohri, Padidan, Chhor, Karachi(A/P) and Karachi(Masroor). The principal amounts of rainfall during the month of April, May and June 2006 are given in Table –1. Seasonal station wise percentage rainfall departures are given in Fig-1 and percentage departure in Table-2 whereas province wise graphic representation of rainfall is given in Fig-2.

Monthly Features:

April

Weather and associated synoptic features: -

Details of weather systems formed during the month are given in Table-3.

¹ Pakistan Meteorological Department

Rain/thundershowers with a few duststorms in plains occurred almost at the all the places or at a number of places on 7 days in FATA, on 3-4 days in Malakand, Hazara, Peshawar, Sargodha and Zhob regions, on 1-2 days in Bannu, Kohat, Rawalpindi, Bahawalpur, Quetta and Sibbi regions. Rain/thunderstorms with a few duststorms in plains also occurred at a few places or at isolated places on 5-7 days in Malakand, Hazara and Rawalpindi regions, on 1-3 days in FATA, Kohat, D.I.Khan, Gujranwala, Faisalabad, Lahore, Multan, D.G.Khan, Bahawalpur, Quetta, Kalat, Larkana, Sukkur and Hyderabad regions.

Rain fall distribution:

The rainfall was in large excess in 3 meteorological observing stations (Skardu, Bunji and Hyderabad); moderate excess in 1 meteorological observing station (Bahawalpur); normal in 6 meteorological observing stations (Gilgit, Chilas, Chitral, Khanpur, Jacobabad and Nawabshah); slight deficit in 2 meteorological observing stations (Parachinar and Balakot); moderate deficit in 8 meteorological observing stations (Muzaffarabad, Garhi Dupatta, Dir, Drosh, Kakul, Risalpur, Bahawalnagar and Khuzdar and in large deficit in 36 meteorological observing stations (Gupis, Astor, Kotli, Saidu Sharif, Kohat, Peshawar, Cherat, D.I.Khan, Chaklala, Murree, Jhelum, Sialkot, Mianwali, Sargodha, Faisalabad, Shorekot, Lahore (PBO), Lahore (A/P), Multan, Quetta, Dalbandin, Nokkundi, Zhob, Barkhan, Sibbi, Kalat, Panjgur, Pasni, Jiwani, Moenjodaro, Rohri, Padidan, Badin, Chhor, Karachi (A/P) and Karachi(Masroor).

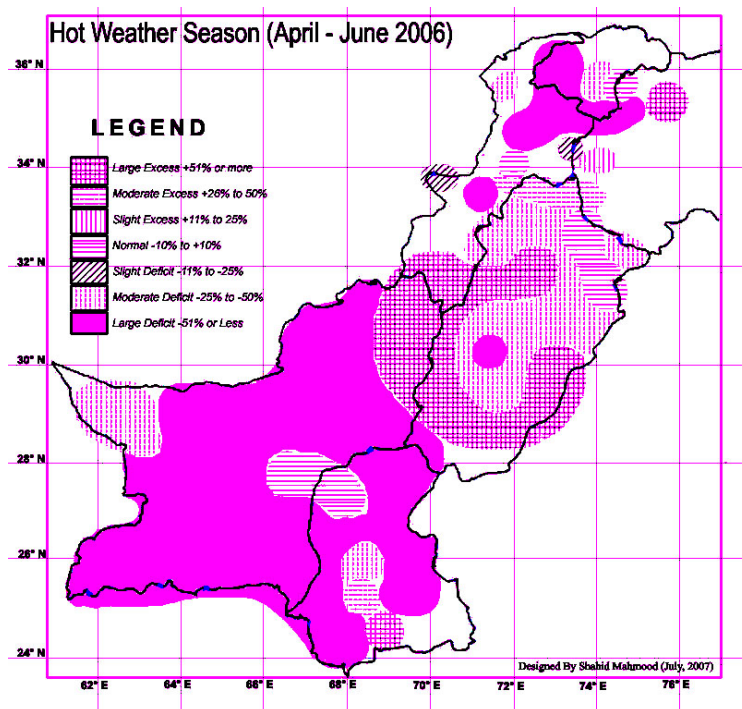


Figure 1

Table 1: Principal amounts of rainfall (30 mm and above)

Date	April	May	June
(1)	(2)	(3)	(4)
1	Nil	Nil	Nil
2	Nil	Nil	Nil
3	Nil	Nil	Nil
4	Kotli 33	Nil	Nil
5	Nil	Nil	Nil
6	Nil	Nil	Nil
7	Nil	Nil	Nil
8	Nil	Nil	Nil
9	Balakot 34, Skardu 33 & M. Jabba 30.	Nil	Nil
10	Skardu 103, Dir 55, Muzaffarabad 39, Bunji 37 & Drosh 32.	Nil	Nil
11	Balakot 49 & Kakul 39.	Nil	Nil
12	Nil	Nil	Nil
13	Nil	Nil	Nil
14	Nil	Nil	Nil
15	Nil	Nil	Nil
16	Nil	Nil	Murree 58, Islamabad 45 & Kotli 33.
17	Nil	M. Bahauddin 110, Barkhan 97, Kamra 60 & Muzaffarabad 41.	Muzaffarabad 34 & Bahawalnagar 30.
18	Nil	Barkhan 52.	Nil
19	Nil	Rawalpindi 33 & Kamra 32.	Nil
20	Nil	D.I Khan 44.	Nil
21	Nil	Islamabad 50 & Kakul 37.	Nil
22	Nil	Nil	Nil
23	Nil	Nil	Nil
24	Nil	Nil	Nil
25	Nil	Nil	Nil

Date	April	May	June
(1)	(2)	(3)	(4)
26	Nil	Nil	Muzaffarabad 50 & Badin 33.
27	Nil	Nil	Rawalpindi 59, Kotli 45, Zhob 37, Rawalakot 33 & Mangla 30.
28	Nil	Nil	Lahore PBO 41, Sialkot 38 & Muzaffarabad 34.
29	Nil	Nil	Nil
30	Nil	Nil	Cherat 75 & Rawalakot 34.
31	--	Nil	--

Table 2: Station wise rainfall (mm) for each month and season as a whole (April – June 2006)

	April			May			June			Season		
	Actual	Normal	Dep %	Actual	Normal	Dep%	Actual	Normal	Dep%	Actual	Normal	Dep%
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
1 Gupis	01	33	-97	1	26	-96	11	18	-39	13	77	-83
2 Gilgit	2.3	23	0	1	25	--96	11	9	22	35	57	-39
3 Skardu	145	26	458	2	27	-93	5	9	-44	152	62	145
4 Bunji	47	24	96	3	29	-90	14	11	27	64	64	0
5 Chilas	33	34	-3	1	31	-97	16	10	60	50	75	-33
6 Astor	37	79	-53	0	73	-100	18	23	-22	55	175	-69
7 Muzaffar- abad	68	103	-34	74	76	-3	223	122	83	365	301	21
8 Garhi Dupatta	71	117	-39	40	81	-51	117	119	-2	228	317	-28
9 Kotli	23	74	-69	71	47	51	180	92	96	274	213	29
10 Parachinar	73	97	-25	32	73	-55	59	49	20	164	219	-25
11 Chitral	72	78	-8	3	47	-94	0	9	-100	75	134	-44
12 Dir	93	174	-47	32	97	-67	21	50	-58	146	321	-55
13 Drosh	61	99	-38	9	67	-87	9	20	-55	79	186	-57
14 Saidu Sharif	31	119	-74	7	69	-90	45	46	-2	83	234	-65
15 Kakul	75	113	-34	62	74	-16	68	101	-33	205	288	-29

	April			May			June			Season		
	Actual	Normal	Dep %	Actual	Normal	Dep%	Actual	Normal	Dep%	Actual	Normal	Dep%
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
16 Balakot	101	119	-15	69	80	-14	70	98	-29	240	297	-19
17 Kohat	6	52	-88	13	40	-67	5	18	-72	24	110	-78
18 Peshawar	15	50	-70	6	24	-75	14	12	17	35	86	-59
19 Risalpur	23	46	-50	20	22	-9	37	19	95	80	87	-8
20 Cherat	18	57	-68	32	30	7	105	20	425	155	107	45
21 D.I.Khan	3	24	-87	44	17	159	27	22	23	74	63	17
22 Chaklala	19	63	-70	76	34	123	126	70	80	221	167	32
23 Murree	46	132	-65	65	88	-37	139	151	-8	240	371	-35
24 Jhelum	13	36	-64	33	27	22	64	57	12	110	120	-8
25 Sialkot	1	33	-97	26	26	0	53	73	-27	80	132	-39
26 Mianwali	17	47	-64	40	22	82	2	34	-94	59	103	-43
27 Sargodha	4	30	-87	63	19	231	30	33	-9	97	82	18
28 Faisalabad	0	21	-100	15	14	7	35	36	-3	50	71	-29
29 Shorekot	3	22	-86	1	13	-92	26	22	18	30	57	-47
30 Lahore (P.B.O)	0	22	-100	0	21	-100	88	51	73	88	94	-6
31 Lahore (A/P)	3	24	-87	15	21	-29	86	48	79	104	93	12
32 Multan	1	15	-93	2	11	-82	10	15	-33	13	41	-68
33 Bahawal-pur	13	9	44	0	9	-100	16	22	-27	29	40	-27
34 Bahawal-Nagar	7	11	-36	5	10	-50	84	25	236	96	46	109
35 Khanpur	3	3	0	0	5	-100	28	3	833	31	11	182
36 Quetta	6	22	-73	2	5	-60	0	1	-100	8	28	-71
37 Dalbandin	1	7	-86	0	2	-100	0	1	-100	1	10	-90
38 Nokkundi	0	2	-100	1	0	0	0	0	0	1	2	-50
39 Zhob	6	31	-81	18	17	6	46	15	207	70	63	11
40 Barkhan	17	37	-54	151	20	655	79	43	84	247	100	147

	April			May			June			Season		
	Actual	Normal	Dep %	Actual	Normal	Dep%	Actual	Normal	Dep%	Actual	Normal	Dep%
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
41 Sibbi	3	10	-70	0	5	-100	0	5	-100	3	20	-85
42 Kalat	2	8	-75	0	4	-100	0	5	-100	2	17	-88
43 Khuzdar	9	17	-47	10	13	-23	25	13	92	44	43	2
44 Panjgur	0	9	-100	0	3	-100	0	4	-100	0	16	-100
45 Pasni	0	1	-100	0	1	-100	0	0	0	0	2	-100
46 Jiwani	0	5	-100	0	0	0	0	1	-100	0	6	-100
47 Moenjo-daro	0	3	-100	0	2	-100	7	2	250	7	7	0
48 Jacobabad	2	2	0	0	3	-100	0	3	-100	2	8	-75
49 Rohri	0	3	-100	0	5	-100	0	6	-100	0	14	-100
50 Nawabshah	3	3	0	0	1	-100	2	3	-33	5	7	-29
51 Padidan	0	3	-100	0	1	-100	0	3	-100	0	7	-100
52 Hyderabad	21	5	320	0	5	-100	1	6	-83	22	16	37
53 Badin	0	2	-100	0	6	-100	33	10	230	33	18	83
54 Chhor	0	2	-100	0	7	-100	2	18	-89	2	27	-93
55 Karachi (A/P)	0	3	-100	0	0	0	0	7	-100	0	10	-100
56 Karachi (Masroor)	0	3	-100	0	1	-100	0	6	-100	0	10	-100

Temperature distribution

Severe heat wave conditions prevailed on 1 day each in Sibbi and Sukkur regions. Appreciable to moderate heat wave conditions prevailed on 5-8 days in Sibbi, Sukkur, Hyderabad and Larkana regions. Hot day conditions prevailed on 4-6 days in Lahore, Multan, Barkhan and Sukkur regions on 1-3 days in Malakand, Rawalpindi, Faisalabad, Quetta, Sibbi and Mekran regions. They were considerably above normal on 4 days each in Malakand and Quetta regions, on 1 day each in FATA and Hazara regions. They were appreciably to markedly above normal on 14-19 days in Rawalpindi, Karachi and Mekran

regions, on 8-12 days in Malakand, Gujranwala, Quetta, Zhob and Karachi regions on 5-7 days in Peshawar, FATA, D.I.Khan, Faisalabad, Sargodha and Bahawalpur regions, on 1- 4 days in Kohat, Hazara, Lahore, Multan and Mirpurkhas regions. They were appreciably to markedly below normal on 1- 4 days in Malakand, Rawalpindi, Peshawar, Hazara, FATA, D.I.Khan, Faisalabad, Multan, Gujranwala, Lahore, Sibbi, Kalat, Larkana, Sukkur and Hyderabad regions. They were considerably below normal on 1 day each in Hazara, D.I.Khan, Quetta and Kalat regions. During the month, the highest maximum temperature in plain of the country was 46.5° C recorded at Nawabshah (Sukkur region) on 7 April 2006.

Table 3: Detail of weather systems during April 2006

S.No	System	Period	Place of the First location	Direction of Movement	Place of final Location	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Western disturbance/eastward moving systems						
1)	Low-pressure area.	1-2	Upper NWFP & adjoining areas	Eastwards	Kashmir and adjoining areas	Moved away Northeastwards on 3.
2)	Low pressure area extended up to mid-trop. level	9-10	Do	Do	Do	Moved away Northeastwards on 11.
3)	Do	14-17	Do	Do	Do	Moved away Northeastwards on 18.
4)	Do	21-23	Do	Do	Do	Moved away Northeastwards on 24.
5)	Low-pressure area.	29-30	Do	Do	Do	Moved away Northeastwards on 1 of next month.

Disastrous weather events and associated damages:-

According to a press report three women members of a family were killed while a youth sustained burns by lightning near Uch sharif (Punjab) on April 21.

MAY

weather and associated synoptic features:-

Detail of weather systems formed during the month is given in Table 4.

Rain/thundershowers with a few duststorms in plains occurred almost at all the places or at a number of places on 5-6 days in Hazara and Sargodha regions, on

1-3 days in FATA, Malakand, Kohat, Peshawar, D.I.Khan, Rawalpindi, Gujranwala, Lahore and Zhob regions. Rain/thunderstorms with duststorms in plains also occurred at a few places or at isolated places on 6-9 Days in FATA and Malakand regions, on 3-4 days in Hazara, Rawalpindi, Gujranwala, Faisalabad and Kalat regions, on 1-2 days in Bannu, Kohat, Peshawar, Lahore, Multan, D.G.Khan, Bahawalpur, Quetta and Zhob regions.

Rainfall distribution:-

The rainfall was in large excess in 6 meteorological observing stations,(Kotli, D.I.Khan Chaklala Mianwali, Sargodha and Barkhan); slight excess in 1 meteorological observing station (Jhelum); normal in 9 meteorological observing stations(Muzaffarabad, Risalpur, Cherat, Sialkot, Faisalabad, Nokkundi, Zhob, Jiwani and Karachi (A/P); slight deficit in 3 meteorological observing stations (Kakul, Balakot and Khuzdar); moderate deficit in 3 meteorological observing stations (Murree, Lahore (A/P) and Bahawalnagar) and in large deficit in 34 meteorological observing stations,(Gupis, Gilgit, Skardu, Bunji, Chilas, Astor, Garhi Dupatta, Parachinar, Chitral, Dir, Drosh, Saidu Sharif, Kohat, Peshawar, Shorekot, Lahore (PBO), Multan, Bahawalpur, Khanpur, Quetta, Dalbandin, Sibbi, Kalat, Panjgur, Pasni, Moenjodaro, Jacobabad, Rohri, Nawabshah, Padidan, Hyderabad, Badin, Chhor and Karachi (Masroor).

Table 4: Details of weather systems during May 2006.

S.No	System	Period	Place of the First location	Direction of Movement	Place of final Location	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Western disturbance/eastward moving systems						
1)	Low pressure area.	1-3	Upper NWFP & adjoining areas	Eastwards	Kashmir and adjoining areas	Moved away Northeastwards on 4.
2)	Do	9-10	Do	Do	Do	Moved away Northeastwards on 11.
3)	Low pressure area extended up to mid-trop. level	17-18	Do	Do	Do	Moved away Northeastwards on 19.
4)	Low pressure area.	19-21	Do	Do	Do	Moved away Northeastwards on 22.
5)	Do	23-25	Do	Do	Do	Moved away Northeastwards on 26.

S.No	System	Period	Place of the First location	Direction of Movement	Place of final Location	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Western disturbance/eastward moving systems						
6)	Do	29-30	Do	Do	Do	Moved away Northeastwards on 31.

Temperature distribution: -

Serve heat conditions prevailed on 1-5 days Quetta and Mekran regions. Appreciable to moderate heat wave conditions prevailed on 18-20 days in Quetta, Sukkur and Mekran regions on 9-14 days in Multan, Bahawalpur, Sibbi and Larkana regions, on 4 - 7 days in Gujranwala and D.I. Khan regions, on 1 day in Mirpurkhas region. Hot day conditions prevailed on 9 days in Lahore region, on 4-5 days in Peshawar, Sargodha, D.I.Khan and Faisalabad regions, on 1-3 days in Bahawalpur and Multan regions, They were considerably below normal on 16 days in Malakand region, on 8 days in FATA region, on 1-2 days in Rawalpindi, Hazara, Peshawar and Sargodha regions. They were appreciably to markedly above normal on 18 days in Kalat regions, on 7-11 days in Malakand, Hazara, Rawalpindi, Faisalabad and Zhob regions, on 2-6 days in FATA, Peshawar Lahore and Karachi regions. They were appreciably to markedly below normal on 4-7 days in Gujranwala and Lahore regions, on 1-3 days in D.I.Khan, Peshawar, Rawalpindi, Faisalabad, Multan, Sargodha, Quetta and Hyderabad regions, They were considerably above normal on 1 day in Gujranwala region. During the month, the highest maximum temperature in plains of the country was 51.0°C recorded at Jacobabad (Larkana region) on 27 May 2006.

Disastrous weather events and associated damages: -

According to a press report two people were killed and as many others injured seriously in storm-related incidents in Sialkot and Okara districts on May 8, 2006. According to press reports, searing heat wave in Punjab killed at least 94 peoples with temperatures as high as 50 degrees Celsius during the first fortnight of May 2006.

According to press report dated May 17, windstorm with a velocity of 125 km an hour wreaked havoc in Sahiwal district leaving three people dead and public property in a shambles.

Nine people were killed and over two dozen were injured on May 22 after rainstorm with winds of upto 113 km/hr lashed several cities in central Punjab.

According to another press report dated May 23, two people died and 18 others fell unconscious as a searing heat gripped the district Dadu and mercury rose to 49 degree centigrade on May 23.

June

Weather and associated synoptic features:-

Details of weather systems formed during the month are given in table 5.

Rain/thundershowers with a few duststorms in plains occurred almost at all the places or at a number of places on 6-8 days in FATA, Hazara, Rawalpindi and Zhob regions, on 3-5 days in Gujranwala, Sargodha, Faisalabad, Lahore and D.G. Khan regions, on 1-2 days in Malakand, Bannu, Peshawar, D.I.Khan, Multan, Bahawalpur and Mirpurkhas regions. Rain/thunderstorms with duststorm in plain also occurred at a few places on at isolated places on 18 days in Malakand region, on 5-8 days in Hazara, Peshawar, Rawalpindi, Gujranwala, Sargodha, Bahawalpur and Kalat regions, on 1-4 days in FATA, Bannu, Kohat, D.I.Khan, Faisalabad, Lahore, Multan, D.G. Khan, Mekran, Larkana, Sukkur, Hyderabad and Mirpurkhas regions.

Rainfall distribution

The rainfall was in large excess in 15 meteorological observing stations (Chilas, Muzaffarabad, Kotli, Risalpur, Cherat, Chaklala, Lahore(PBO), Lahore(A/P), Bahawalnagar, Khanpur, Zhob, Barkhan, Khuzdar, Moenjodaro and Badin); moderate excess in 1 meteorological observing station (Bunji); slight excess in 6 meteorological observing stations (Gilgit, Peshawar, Parachinar, D.I.Khan, Jhelum and Shorekot); normal in 7 meteorological observing station(Garhi Dupatta, Saidu Sharif, Murree, Sargodha, Faisalabad, Nokkundi and Pasni); slight deficit in 1 meteorological observing station (Astor); moderate deficit in 8 meteorological observing stations (Gupis, Skardu, Kakul, Balakot, Sialkot, Mianwali, Quetta, Dalbandin, Sibbi, Kalat, Panjgur, Jiwani, Jacobabad, Rohri, Padidan, Hyderabad, Chhor, Karachi(A/P) and Karachi(Masroor)

Temperature distribution

Severe heat wave conditions prevailed on 1-2 days in Mirpurkhas and Mekran regions.

Appreciable to moderate heat wave conditions prevailed on 10 days in Malakand region, on 4-6 days in Mekran, Sukkur, Quetta, and Hyderabad regions, on 1-3 days in Rawalpindi, Gujranwala, D.I.Khan, Peshawar, Kohat, Sargodha, Mirpurkhas, Multan, Bahawalpur and Larkana, regions. Hot day conditions prevailed on 6 days in Quetta region, on 1-2 days in Malakand, Kalat, Mekran and Larkana regions.

They were appreciably to markedly above normal on 1-4 days in Hazara and Karachi regions.

They were appreciably to markedly below normal on 5-9 days in D.I.Khan, Faisalabad, Lahore, Multan, Bahawalpur, Rawalpindi, and Sargodha regions, on 1-4 days in Peshawar, Hazara, Gujranwala, Quetta, Zhob, Mekran, Kalat, Sibbi,

Larkana and Sukkur regions. They were considerably below normal on 1-4 days in Peshawar, D.I.Khan, Rawalpindi, Gujranwala, Sargodha, Faisalabad, Lahore, and Multan regions. During the month, the highest maximum temperature in plains of the country was 49.5° C recorded at Lasbella (Mekran region) on 24 & 25 June 2006.

Table 5: Details of the weather system during June 2006.

S. No	System	Period	Place of first location	Direction of movement	Place of final location	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A) Low Pressure Area						
1)	Low Pressure area.	25-26	Eastern Sindh & adjoining areas	Stationary	Eastern Sindh & adjoining areas	Became less-marked on 27.
B) Western disturbance/eastward moving system						
1	Low pressure area.	1- 6	Upper NWFP and adj. areas	Eastwards	Kashmir and adj. areas	Moved away NE-wards on 7.
2	Do	3-8	Do	Do	Do	Moved away NE-wards on 9.
3	Low pressure area extending upto mid-tropospheric level	15-19	Do	Do	Do	Moved away Northeast-wards on 20.
4)	Low pressure area.	22-25	Do	Do	Do	Moved away Northeast-wards on 26.
5)	Low pressure area extending upto mid-tropospheric level	26-30	Do	Do	Do	Moved away Northeast-wards on 1 of next month.

Disastrous weather events and associated damages: -

A woman was killed and eight others injured when a windstorm followed by rain hit Sahiwal on June-3.

Heat wave claimed lives of four people in Sahiwal reported on June-11.

As many as five people died and 30 others injured in Sahiwal district when it was lashed by a powerful windstorm followed by mild rain on June-17.

Four people died of heat-stroke and over 80 others fell unconscious in Nawabshah on June-23.

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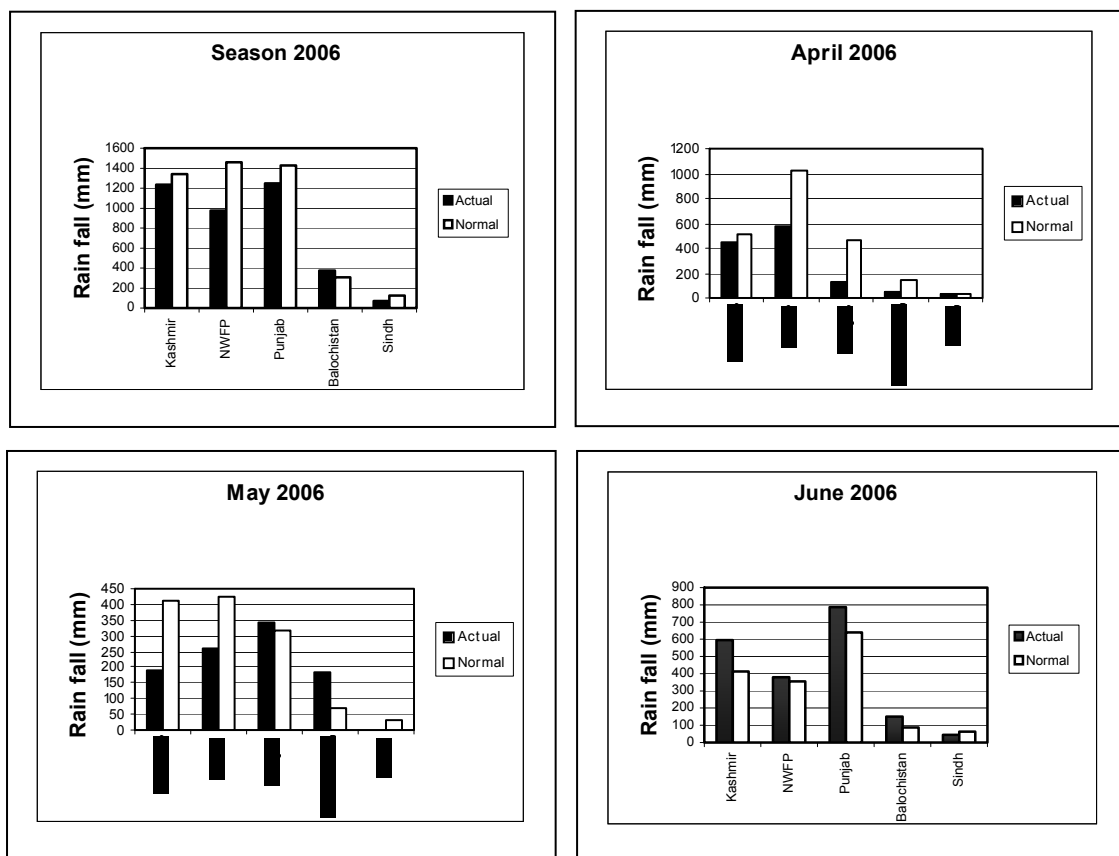


Figure 2