

Thailand Annual Weather Summary, 2012

The year 2012 was warmer than usual. Mean air temperature was above normal for all months, while monthly mean values for late year were 2-3 °C above normal. Annual rainfall was about 7 percent above normal but lower than the previous year (2011's rainfall was 24 percent above normal). The month of January 2012 was wetter than usual especially in southern part, with 416 percent above normal rainfall over the country. The weather in this year was affected by the northeast monsoon during winter and monsoon trough with southwest monsoon during rainy season. Moreover there were 3 tropical cyclones having some effects on rainfall of Thailand, with only one namely the tropical storm GAEMI (1220) hit Thailand on October 7 as it was tropical depression stage. More details on the weather are as follow:

During January and February, upper Thailand was occasionally dominated by the high pressure area and the northeast monsoon prevailed over Thailand and the Gulf of Thailand. These caused cool and cold weather mainly in the northern and northeastern parts particularly in northern part where experienced cold weather with very cold in some places for the second half of January. The lowest air temperature of the year, 7.7 °C, occurred in the northern part at Nan Agrometeorological station in Nan province on January 18 while it was 1.1 °C in mountainous area at Amphoe Omkoi in Chiang Mai province on January 17. Moreover, upper Thailand received isolated to widely scattered rain mainly during the second half of January as the southeasterly wind prevailed over Thailand and westerly trough moving through northern and northeastern parts. Southern Thailand obtained intermittent rainfall nearly the whole January with flash flooding along the east coast mainly during early January. The weather in February was still cool in the morning especially in the northern and northeastern parts with cold in upper portion of northern part. Daytime temperatures were increasing in most areas especially during late February causing hot weather persisted in upper Thailand. Mean air temperatures in January and February were above normal in all areas.

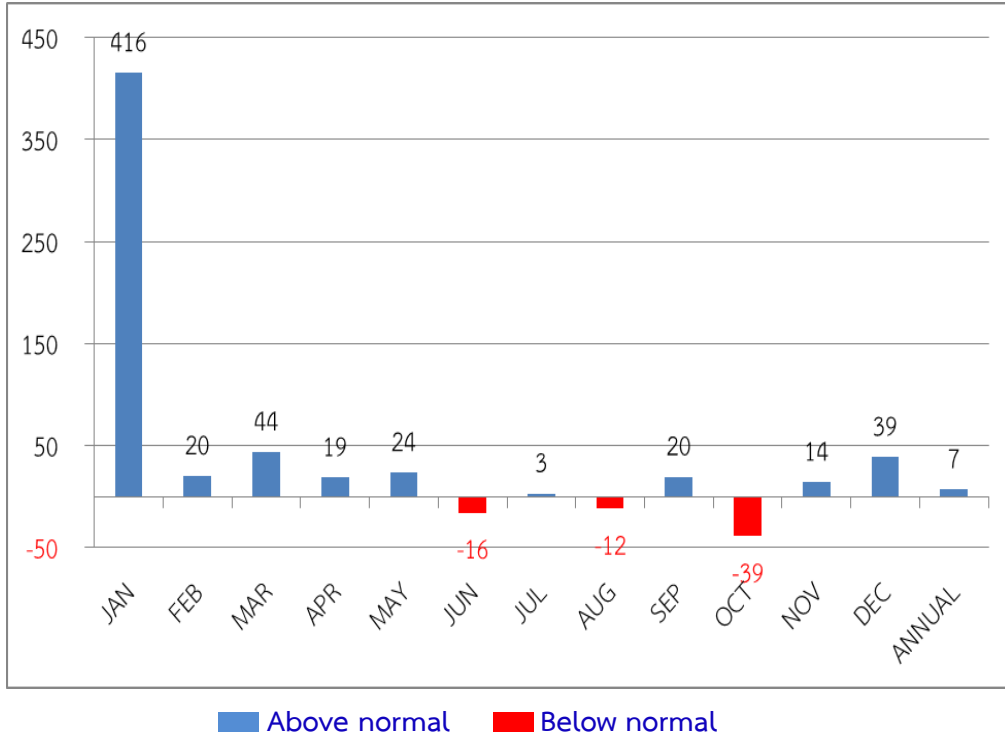
Thailand's summer 2012 began late February two weeks later than usual. The upper Thailand occasionally experienced hot weather throughout summer. Mean air temperatures were lightly above normal especially in the period of heat low pressure cell covering upper Thailand, resulting in generally hot weather with very hot weather in several areas during the second half of March, mid and late April and early May. The highest air temperature of the year was 41.7 °C at Amphoe Muang in Lampang province, Amphoe Muang in Phrae province and Amphoe Muang in Tak province on April 26. However, the high pressure area from China occasionally extended its ridge to cover upper Thailand while the hot air covered the mentioned area causing thunderstorm with gust and hail in some areas collaborated with temperature sharply dropped in the rest period of March and April. The influence of the prevailing of easterly wind over the southern Thailand produced significant rain over southern part and monthly rainfalls over Thailand were above normal, except for scanty and below normal rainfalls in central and eastern parts.

The rainy season started with the prevailing of southwesterly wind and wet condition continued occurred in all regions on May 5, one week earlier than normal. After that, Thailand periodically received plentiful rainfall by the influence of monsoon trough which occasionally located across upper Thailand and southwest monsoon prevailing over the Andaman Sea, Thailand and the gulf of Thailand, in addition with the indirect effect of typhoon "VICENTE (1208)" during late July and typhoon "KAI-TAK (1213)" during mid-August which dissipated over the nearly area of upper Thailand. Furthermore, the tropical storm "GAEMI (1220)" in the middle South China Sea made landfall in Qui Nhon, Vietnam on October 6 before downgrading into the tropical depression and hit Sa Kaew province, Thailand on late October 7. GAEMI became low pressure cell over the eastern

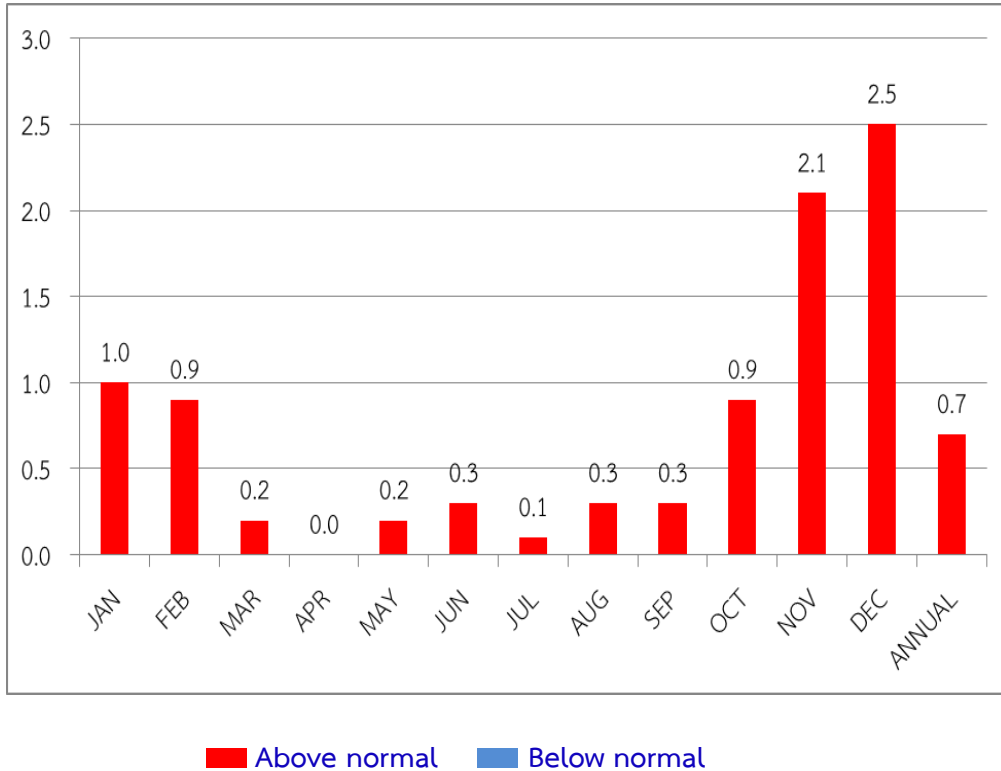
and central regions of Thailand on the following day and intensified the monsoon trough, lying across central and eastern regions of Thailand. However, the consecutive dry days were observed in several areas during some period of June and August when the monsoon trough moved northwards to lie across Myanmar, Lao and upper Vietnam. The uneven distribution rainfalls lead to mean monthly rainfalls below normal in most places throughout the season. The maximum daily rainfall of 242.4 mm was found in upper Thailand at Amphoe Khlung in Chanthaburi province on July 12. Several areas of upper Thailand experienced thunderstorms with gust and hails in some areas in May. The rainy season prolonged till mid-October and above normal mean temperature occurred during the May-October.

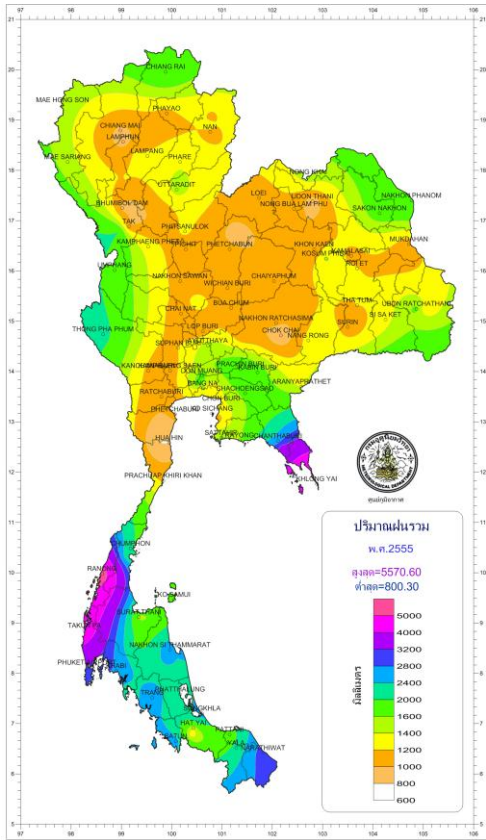
On October 18, the winter was started with high pressure area from China extended its ridge to cover upper Thailand accompanied with the prevailing of the easterly and northeasterly winds at the lower level (at 700 hPa and 850 hPa) and westerly wind at the upper level (at 500,300 and 200 hPa). The weather turned decreasing in rainfall and temperature over upper Thailand especially in upper northern and northeastern parts where clearly experienced cool weather. However, high pressure areas from China extending eastward and frequently dominated the South China Sea accompanied with easterly wind prevailing over Thailand and the northeast monsoon mainly prevail over the Gulf of Thailand and southern part during late December. Resulted in mild winter and above normal mean temperatures occurred in all parts of Thailand especially in November and December with mean temperature rising to 2-3 ° C upper normal. Meanwhile, rainfall occasionally occurred in several areas of upper Thailand, except for decreasing in rainfall during December. The strengthen northeast monsoon during the second half of December brought cool and cold to upper Thailand mainly in northern and northeastern parts and very cold weather in some areas of mountainous areas and mountaintop. Extreme minimum temperature was 11.0 ° C at Agrometeorological Station in Sakon Nakhon province on December 31. The temperature dropped to 2.5 ° C at Doi Angkhang, Amphoe Fang in Chiang Mai province on December 18. In southern part, cool weather in the upper portion while abundant rainfall with heavy to very heavy rainfall occurred in several areas mainly during late year. The heaviest daily rainfall of 268.3 mm was measured at Southern Meteorological Center (East Coast) in Songkhla province on November 30. Flash floods were reported at Narathiwat, Surat Thani and Phattalung provinces during late December. ❀

Monthly and Annual rainfall anomalies (%) for the year 2012

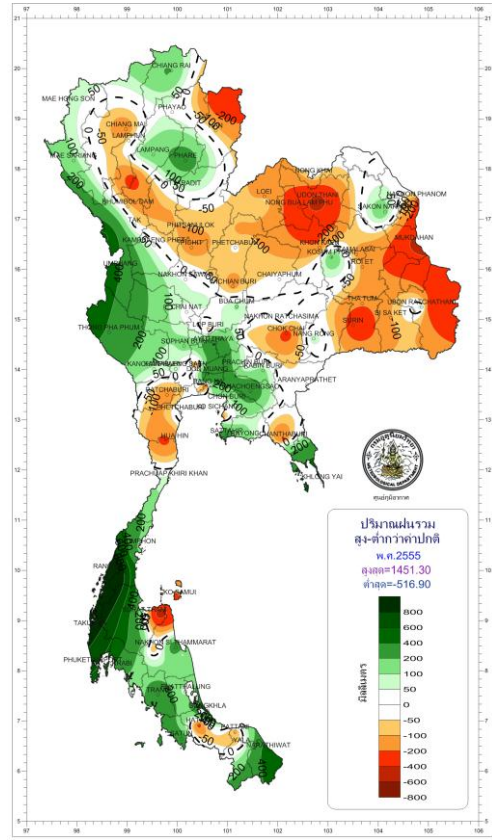


Monthly and Annual temperature anomalies (°C) for the year 2012

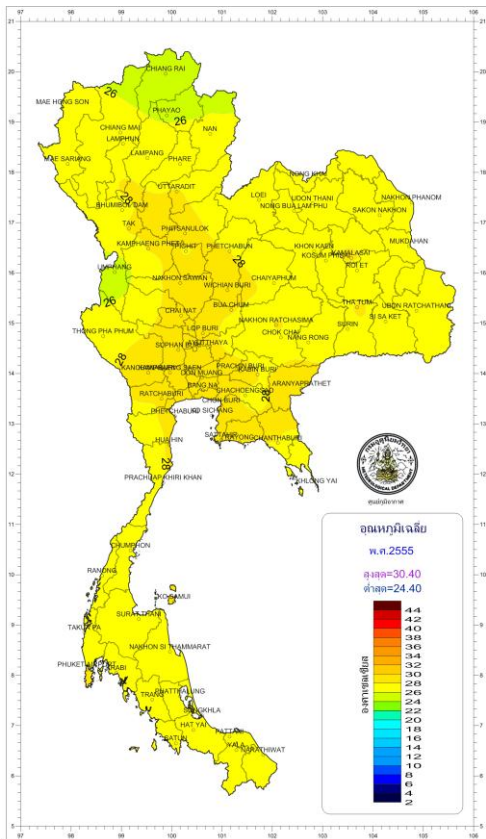




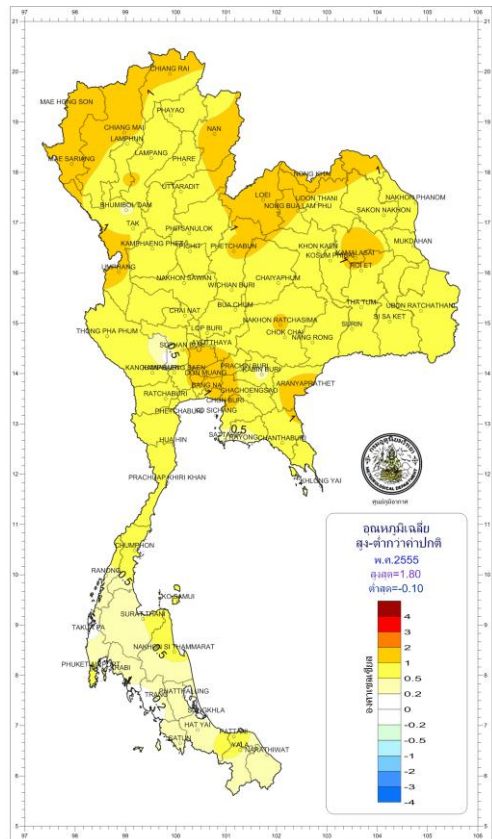
Annual Rainfall (mm.) in 2012



Annual Rainfall anomalies (mm.) in 2012



Annual Mean Temperature (°C) in 2012



Annual Mean Temperature anomalies (°C) in 2012

Breaking records of daily rainfall in Thailand

Station	New Record 2012		Previous Record		Start since
	Rainfall (mm)	Date	Rainfall (mm)	Date / Year	
January					
Phetchabun (Wichian Buri)	93.9	20	44.0	16/2004	1970
Nakhon Phanom (Agromet Stn.)	18.1	23	17.0	4/1992	1983
Mahasarakham(Kosumphisai)	42.3	19	12.4	21/2010	1966
Kalasin(Kamalasai)	54.4	19	17.2	20/2010	1998
Roi Et	55.7	19	37.2	4/1992	1953
Roi Et (Agromet.Stn.)	47.4	19	31.7	4/1992	1969
Nakhon Ratchasima (Pak Chong)	51.5	21	48.7	21/2001	2512
Nakhon Ratchasima (Chok Chai)	47.0	20	34.4	25/1985	1970
Buriram	25.7	21	9.1	20/2010	2003
Ratchaburi	12.1	30	7.1	23/1993	1992
Surat Thani (Agromet Stn.)	170.0	1	106.2	7/2011	1993
Nakhon Si Thammarat(Chawang)	78.8	1	74.1	14/2001	1998
Nakhon Si Thammarat (Agromet Stn.)	206.4	1	143.5	2/2006	1984
Songkhla(Sa Dao)	171.8	12	163.6	7/2007	1999
Ranong	95.5	2	69.9	24/1953	1951
Krabi	93.0	1	89.0	13/2011	1994
Satun	125.0	14	88.5	4/2010	1977
February					
Lampang (Thoen)	30.0	4	17.1	27/2008	2004
Ayutthaya (Agromet Stn.)	19.9	3	17.2	23/2011	1993
Pathumthani (Agromet Stn.)	98.0	3	46.3	7/2004	1999
Surat Thani	45.7	19	44.8	27/1965	1988
March					
Nan	77.6	31	70.5	23/2003	2000
Lampang(Agromet Stn.)	71.4	12	53.6	18/2010	1982
Chachoengsao (Agromet Stn.)	78.7	6	71.4	30/1991	1989
April					
Nan	129.4	4	94.6	3/1957	2000
Nan (Thung Chan Agromet Stn.)	69.2	27	59.7	26/2009	1996
Loei (Agromet.Stn.)	114.4	27	85.4	29/2006	1970
Sakon Nakhon	141.5	21	87	21/2008	1952
Sakon Nakhon (Agromet.Stn.)	110.0	21	100.6	15/1972	1969
Buriram	46.1	27	40.5	18/2011	2003
Phang-nga (Takua Pa)	145.0	20	115.2	30/1996	1981
May					
Chaeng Rai	127.6	30	102.2	26/1990	1951
Lamphun	82.9	6	79.8	19/2000	1981
Mahasarakham(Kosumphisai)	182.3	26	134.2	20/2000	1966
Surin (Tha Tum)	152.1	24	108.0	12/1990	1970
June					
Sukhothai	49.6	4	45.5	21/2010	2000
Chumphon	117.7	4	96.2	6/2000	1951

Breaking records of daily rainfall in Thailand (Cont.)

Station	New Record 2012		Previous Record		Start since
	Rainfall (mm)	Date	Rainfall (mm)	Date / Year	
June (Cont.)					
Surat Thani	117.6	5	95.5	10/1996	1988
Phang-nga (Takua Pa)	163.5	8	139.6	16/2009	1981
Krabi (Ko Lanta)	144.2	7	143.0	18/2001	1981
Krabi	98.8	6	86.5	13/1998	1994
July					
Bangkok (Don Muang Airport)	104.6	7	100.9	11/2011	1951
Sa Kaew	99.5	28	64.7	17/2005	2000
August					
Kalasin(Kamalasai)	141.2	25	118.2	6/2007	1998
Phuket	177.2	21	151.7	19/1994	1951
September					
Sa Kaew	110.1	28	72.7	14/2010	2000
Ranong	208.0	5	198.4	23/1996	1951
October					
Lampang (Thoen)	84.3	5	65.5	2/2011	2004
November					
Lamphang(Aeromet Stn.)	77.5	28	50.6	17/1983	1982
Tak (Mae Sot)	73.1	25	51.0	7/2011	1951
Ubon Ratchathani	122.4	23	77.5	21/1998	1951
Buriram	51.3	17	40.0	4/2008	2003
Bangkok (Don Muang Airport)	80.9	28	60.2	22/2006	1951
Samut Prakarn (Pilot Station)	90.3	24	80.6	1/2002	1981
December					
Lop Buri (Bua Chum)	22.7	11	18.5	28/1991	1970

Breaking records of monthly rainfall in Thailand

Station	New Record 2012	Previous Record		Start since
	Rainfall (mm)	Rainfall (mm)	Year	
January				
Phetchabun (Wichian Buri)	96.5	45.4	2004	1970
Nakhon Phanom (Agromet Stn.)	47.5	26.7	1992	1983
Maharakham(Kosumphisai)	73.9	28.5	2010	1966
Kalasin(Kamalasai)	86.1	22.7	2010	1998
Roi Et	69.3	45.1	1992	1953
Roi Et (Aeromet.Stn.)	67.1	36.6	1992	1983
Nakhon Ratchasima (Pak Chong)	78.2	48.9	2001	1969
Nakhon Ratchasima (Chok Chai)	106.7	49.0	2010	1970
Buriram	34.9	21.9	2010	2003
Ratchaburi	13.2	8.0	1993	1992
Surat Thani (Agromet Stn.)	462.6	323.1	2011	1993

Breaking records of monthly rainfall in Thailand(Cont.)

Station	New Record 2012	Previous Record		Start since
	Rainfall (mm)	Rainfall (mm)	Year	
January (Cont.)				
Surat Thani (Pra Saeng)	285.7	198.0	2001	1998
Nakhon Si Thammarat (Agromet Stn.)	792.3	595.8	2011	1984
Phatthalung (Agromet Stn.)	435.1	398.6	2011	1982
Songkhla (Sa Dao)	439.0	297.6	2001	1999
Ranong	240.5	163.5	1953	1951
Phang-nga (Takua Pa)	209.8	174.8	2001	1981
Krabi	472.0	165.8	2011	1994
Satun	222.7	178.6	2001	1977
February				
Lampang (Thoen)	33.9	25.8	2008	2004
Kanchanaburi (Thong Pha Phum)	80.4	68.2	1981	1965
Pathumthani (Agromet Stn.)	102.6	75.2	2003	1999
March				
Nong Khai	133.5	127.3	2008	1951
April				
Nan (Thung Chang)	179.6	170.2	2008	1996
Sakon Nakhon	401.9	208.1	2000	1952
Sakon Nakhon (Aeromet.Stn.)	289.4	246.4	2000	1969
Buriram	126.5	114.0	2008	2003
Surat Thani (Pra Saeng)	237.9	178.0	2001	1998
Songkhla	266.5	234.9	1996	1951
Pattani	270.9	239.7	1999	1964
May				
Chiang Rai (Agromet Stn.)	412.5	412.0	2009	1979
Phrae	389.5	352.5	1971	1952
Maharakham(Kosumphisai)	414.9	385.6	2000	1966
June				
Sukhothai	269.8	217.2	2011	2000
July				
Sa Kaew	380.8	289.1	1999	2000
September				
Kanchanaburi (Thong Pha Phum)	489.7	406.1	1985	1965
Sa Kaew	546.4	395.0	2003	2000
Chonburi (Phatthaya)	430.9	374.9	2006	1980
Rayong	504.7	499.0	1995	1981
November				
Nan (Thung Chang)	140.1	102.6	2002	1996
Lampang (Agromet Stn.)	129.2	125.8	1985	1982
Tak (Mae Sot)	126.2	116.0	2002	1951
Ubon Ratchathani	135.7	117.1	1998	1972
Buriram	71.6	48.0	2008	2003

Breaking records of monthly rainfall in Thailand(Cont.)

Station	New Record 2012	Previous Record		Start since
	Rainfall (mm)	Rainfall (mm)	Year	
November(Cont.)				
Chantha Buri (Phliu Agromet Stn.)	241.3	203.9	1987	1969
Trat (Khleng Yai)	392.8	259.5	1951	1951
December				
Lop Buri (Bua Chum)	22.8	18.9	1991	1970

Note: Rainfall amount, temperatures and natural disasters are the preliminary information.

Climatological Center
 Meteorological Development Bureau
 Meteorological Department

Monthly and Annual Rainfall of Thailand in 2012

Part	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
North													
Rainfall amount (mm.)	13.6	7.5	27.8	76.6	258.0	126.6	185.3	207.0	244.6	76.4	51.1	7.0	1281.5
Normal	5.9	11.4	24.6	68.3	173.4	151.5	179.8	225.3	212.3	123.1	34.1	8.1	1217.8
Departure from normal (mm.)	7.7	-3.9	3.2	8.3	84.6	-24.9	5.5	-18.3	32.3	-46.7	17.0	-1.1	63.7
Departure from normal (%)	131	-34	13	12	49	-16	3	-8	15	-38	50	-14	5
Northeast													
Rainfall amount (mm.)	34.3	5.2	37.8	113.4	238.8	136.7	159.6	245.3	189.6	50.5	40.7	2.3	1254.2
Normal	4.1	17.7	37.7	86.1	182.3	209.9	207.9	258.8	241.9	111.3	17.9	3.5	1379.1
Departure from normal (mm.)	30.2	-12.5	0.1	27.3	56.5	-73.2	-48.3	-13.5	-52.3	-60.8	22.8	-1.2	-124.9
Departure from normal (%)	737	-71	0	32	31	-35	-23	-5	-22	-55	127	-34	-9
Central													
Rainfall amount (mm.)	19.9	28.0	29.9	51.9	142.3	137.3	204.2	181.1	405.9	136.0	69.5	10.5	1416.5
Normal	6.2	12.4	30.6	74.6	159.9	138.6	152.5	183.9	261.0	180.7	36.8	5.4	1242.6
Departure from normal (mm.)	13.7	15.6	-0.7	-22.7	-17.6	-1.3	51.7	-2.8	144.9	-44.7	32.7	5.1	173.9
Departure from normal (%)	221	126	-2	-30	-11	-1	34	-2	56	-25	89	94	14
East													
Rainfall amount (mm.)	45.7	48.7	50.3	42.7	260.6	228.2	310.6	201.7	513.0	169.9	159.1	11.8	2042.3
Normal	14.7	29.0	54.6	96.3	211.4	272.2	265.9	311.5	333.2	228.4	61.3	7.6	1886.1
Departure from normal (mm.)	31.0	19.7	-4.3	-53.6	49.2	-44.0	44.7	-109.8	179.8	-58.5	97.8	4.2	156.2
Departure from normal (%)	211	68	-8	-56	23	-16	17	-35	54	-26	160	55	8
South(East Coast)													
Rainfall amount (mm.)	326.6	27.9	78.4	105.6	114.2	97.0	99.6	93.9	132.3	161.1	276.0	312.8	1825.4
Normal	60.0	36.0	50.4	73.0	137.5	109.1	113.4	128.2	143.6	252.3	377.7	229.0	1710.2
Departure from normal (mm.)	266.6	-8.1	28.0	32.6	-23.3	-12.1	-13.8	-34.3	-11.3	-91.2	-101.7	83.8	115.2
Departure from normal (%)	444	-23	56	45	-17	-11	-12	-27	-8	-36	-27	37	7
South(West Coast)													
Rainfall amount (mm.)	157.9	79.1	202.8	291.9	384.9	335.4	408.5	407.2	569.8	170.2	234.5	111.1	3353.3
Normal	22.9	28.7	70.5	161.0	315.0	320.2	352.4	404.1	440.2	357.7	202.7	65.3	2740.7
Departure from normal (mm.)	135.0	50.4	132.3	130.9	69.9	15.2	56.1	3.1	129.6	-187.5	31.8	45.8	612.6
Departure from normal (%)	590	176	188	81	22	5	16	1	29	-52	16	70	22
Over Country													
Rainfall amount (mm.)	86.1	25.0	58.5	102.7	231.6	159.9	207.7	214.1	302.0	112.3	118.0	63.8	1681.7
Normal	16.7	20.8	40.7	86.6	187.5	189.7	201.6	242.7	252.7	184.0	103.5	46.0	1572.5
Departure from normal (mm.)	69.4	4.2	17.8	16.1	44.1	-29.8	6.1	-28.6	49.3	-71.7	14.5	17.8	109.2
Departure from normal (%)	416	20	44	19	24	-16	3	-12	20	-39	14	39	7

Remark : Based on 1971 - 2000 normal

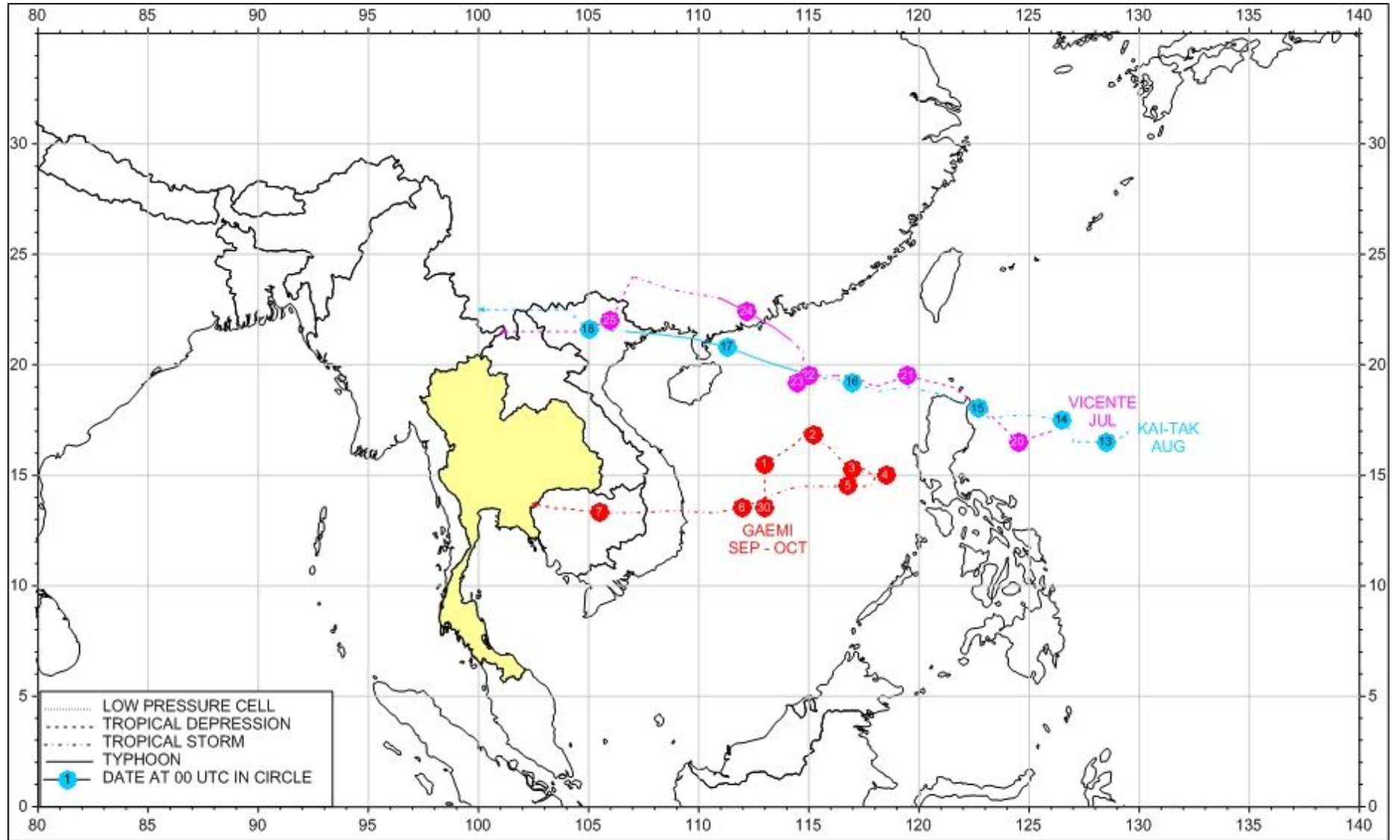
Climatological Center, Meteorological Development Bureau

Monthly and Annual Mean Temperature of Thailand in 2012

Part	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
North													
Mean Temperature (°C)	23.7	25.7	27.7	29.6	28.6	27.8	27.2	27.1	27.4	27.2	26.9	24.6	27.0
Normal	22.2	24.4	27.5	29.5	28.6	27.8	27.3	26.9	26.9	26.2	24.2	21.7	26.1
Departure from normal (°C)	+1.5	+1.3	+0.2	+0.1	+0.0	+0.0	-0.1	+0.2	+0.5	+1.0	+2.7	+2.9	+0.9
Northeast													
Mean Temperature (°C)	24.3	26.5	28.1	29.1	28.8	28.6	28.2	27.8	27.7	27.7	27.7	26.0	27.5
Normal	23.2	25.4	28.2	29.5	28.7	28.4	27.9	27.5	27.2	26.4	24.6	22.6	26.6
Departure from normal (°C)	+1.1	+1.1	-0.1	-0.4	+0.1	+0.2	+0.3	+0.3	+0.5	+1.3	+3.1	+3.4	+0.9
Central													
Mean Temperature (°C)	27.3	28.6	30.0	30.8	29.9	28.9	28.3	28.1	27.8	28.5	28.4	27.9	28.7
Normal	25.7	27.5	29.4	30.4	29.6	28.8	28.4	28.0	27.7	27.4	26.3	24.9	27.8
Departure from normal (°C)	+1.6	+1.1	+0.6	+0.4	+0.3	+0.1	-0.1	+0.1	+0.1	+1.1	+2.1	+3.0	+0.9
East													
Mean Temperature (°C)	27.2	28.2	29.3	30.0	29.3	29.0	28.2	28.4	27.5	28.1	28.0	28.1	28.4
Normal	26.2	27.5	28.7	29.5	29.1	28.6	28.2	28.0	27.6	27.3	26.8	25.7	27.8
Departure from normal (°C)	+1.0	+0.7	+0.6	+0.5	+0.2	+0.4	+0.0	+0.4	-0.1	+0.8	+1.2	+2.4	+0.6
South(East Coast)													
Mean Temperature (°C)	26.4	27.4	28.2	28.7	28.7	28.7	28.2	28.4	27.5	27.4	27.3	27.0	27.8
Normal	25.9	26.7	27.7	28.7	28.5	28.1	27.8	27.7	27.3	26.9	26.2	25.6	27.2
Departure from normal (°C)	+0.5	+0.7	+0.5	+0.0	+0.2	+0.6	+0.4	+0.7	+0.2	+0.5	+1.1	+1.4	+0.6
South(West Coast)													
Mean Temperature (°C)	27.1	28.1	27.9	28.1	28.2	28.4	27.7	27.9	26.9	27.4	27.5	27.5	27.7
Normal	26.9	27.7	28.4	28.5	28.0	27.8	27.4	27.3	26.9	26.7	26.6	26.5	27.4
Departure from normal (°C)	+0.2	+0.4	-0.5	-0.4	+0.2	+0.6	+0.3	+0.6	+0.0	+0.7	+0.9	+1.0	+0.3
Over Country													
Mean Temperature (°C)	25.4	27.0	28.3	29.4	28.9	28.5	27.9	27.8	27.5	27.6	27.5	26.4	27.7
Normal	24.4	26.1	28.1	29.4	28.7	28.2	27.8	27.5	27.2	26.7	25.4	23.9	27.0
Departure from normal (°C)	+1.0	+0.9	+0.2	+0.0	+0.2	+0.3	+0.1	+0.3	+0.3	+0.9	+2.1	+2.5	+0.7

Remark : Based on 1971 - 2000 normal

Climatological Center, Meteorological Development Bureau



Climatological Center

Track of Tropical Cyclone affecting Thailand in 2012