Thai Meteorological Department
Ministry of Thailand Digital Economy

Three-month Climate Outlook

For May – July 2018

Issued on 30 April 2018

Climate Outlook:

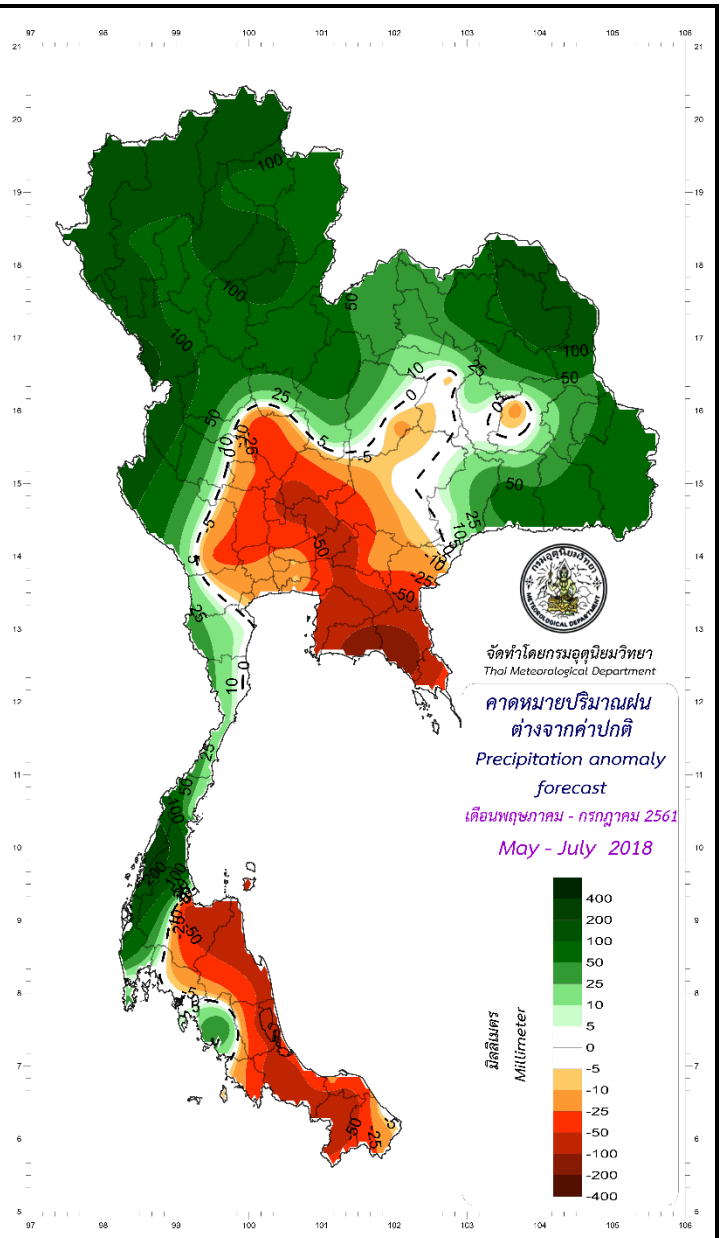
1. During the next 3 months, the total rain of Thailand at northern part will be 10% above normal (or about 610 mm, Normal: 510 mm) whereas that of northeastern part is 5% above normal (or about 660 mm, Normal: 620 mm).

On the other hand, the total rain of Southern Thailand (west coast) will be 5% above normal (or about 1,030 mm, Normal: 960 mm).

Furthermore, the total rain of central and eastern parts and Southern Thailand (east coast) will be 5% below normal or about 410 mm (Normal: 470 mm), 710 mm (Normal: 760 mm), and 340 mm (Normal: 380 mm) consecutively.

Moreover, the total rain of Bangkok Metropolis will be near normal or about 550 mm.

Mean temperature of Thailand will be near normal.



2. In May 2018, the total rain of the Upper Thailand will be 5-10% below normal whereas that of the Lower Thailand is near normal.

The mean temperature of Thailand will be near normal.

3. In June 2018, the total rain of Thailand will be near normal except that that of the northeastern part and the Southern Thailand (east coast) is 5-10% below normal. However, the total rain of the central part and Bangkok Metropolis will be 5-10% above normal.

The mean temperature of Thailand will be near normal.

4. In July 2018, the total rain of Thailand in the northern, northeastern and eastern parts and the Southern Thailand (west coast) will be 10-20% above normal.

Besides, the total rain of the central part, the Southern Thailand (east coast) and Bangkok Metropolis will be 5% below normal.

The mean temperature of Thailand will be near normal.

*** The information supporting this 3-month climate outlook are at the following pages:**

Thailand climate for May-June-July 2018 from baseline: 1981-2010

May 2018: As being the transition month from summer to rainy seasons, usually weather during the 1st half of this month is commonly sweltering and thunder rain or summer thunderstorms often occurs. Sometimes, falling hail may happen too due to heat low-pressure air mass cells. Later during the 2nd half of this month, the rainy season will start. Also, temperature will reduce with more abundant rainfall because the prevailing wind over Thailand starts to become the southwest monsoon. In addition, the low-pressure trough placing over Malaysia tends to move upward toward the Southern Thailand and the central part of Thailand consecutively. In addition, some tropical cyclones may develop in the Andaman Sea or the Bay of Bengal and then move toward or near the western side of Thailand further.

June 2018: Usually, abundant rainfall occurs during the 1st half of this month due to the influential southwest monsoon prevailing over Thailand together with low-pressure air mass cells placing over the central portion of Thailand. Afterward, rainfall will reduce and dry spell may happen for about 1-2 weeks, specifically at the Upper Thailand. The reason is that a low-pressure trough moves upward to the southern portion of China along with the southwest monsoon prevailing over Thailand weakens. Additionally, some tropical cyclones from the Northwest Pacific or the South China Sea may move near or toward Thailand further, especially at the eastern side of Thailand.

July 2018: During the 1st half of this month, the dry spell will continue from late June 2018 because a low-pressure trough still places over the southern portion of China. Together with the southwest monsoon prevailing over the Upper Thailand mostly weakens influencing many areas to meet slight or no rain continuously for many days.

While during the 2nd half of this month, more abundant rainfall appears because of the low-pressure trough moving downward to place over the Upper Thailand again including with the southwest monsoon prevailing over Thailand becoming more active periodically.

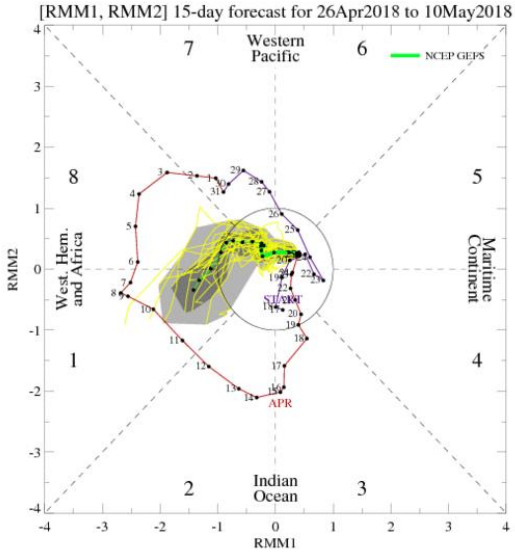
In addition, some tropical cyclones may move near or toward Thailand along the eastern side of the country.

Outlook of phenomena influencing climate of Thailand

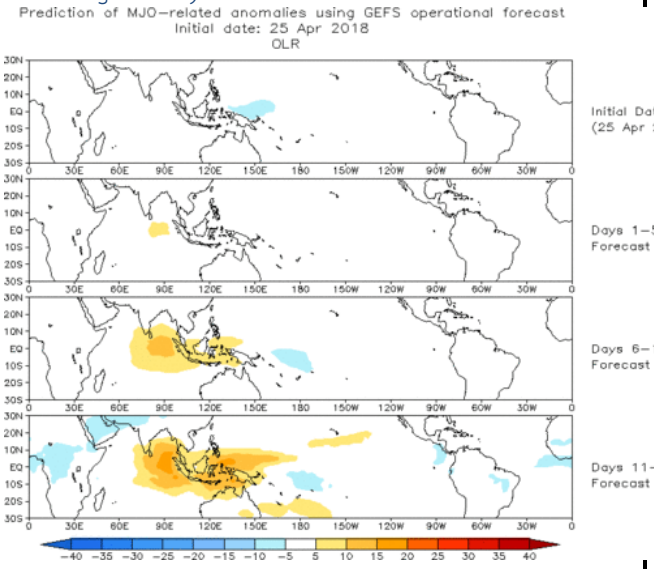
1. Madden Julian Oscillation (MJO)

During the past middle April 2018, MJO became less active when moving through the Indian Ocean.Then, during late April 2018, MJO moved toward the Andaman Sea and influenced for air mass uplifting around the middle Indian Ocean. Thus, the westerly wind wave at the Andaman Sea became more active.

And from MJO index and OLR (Orthogonal Longwave Radiation) forecast models, they predict that during late April until middle May 2018, MJO will weaken and move pass the Andaman Sea, Thailand and the Western Pacific slowly. As a result, the rain of Thailand during the 1st half of May will increase a little. For the 2nd half of May, MJO still needs to be under monitoring closely further.



Graph of MJO index and phase forecast from global climate centers (source: IRI/CPC)

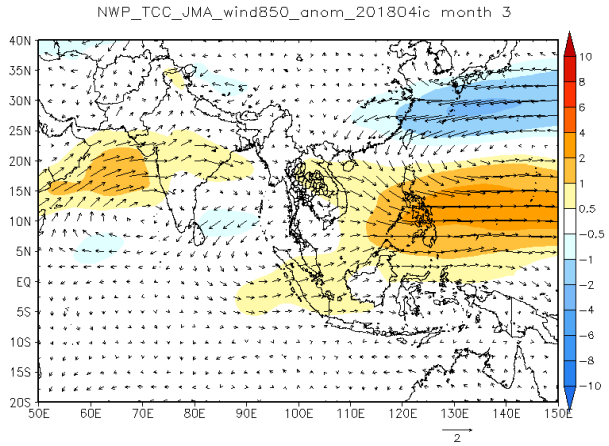


3-phase forecast maps of mean OLR, each phase consists of 5 days. (source: IRI/CPC)

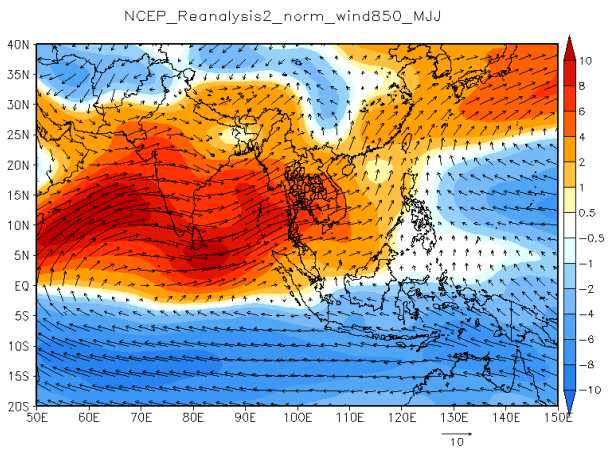
2. Asian Monsoon (Southwest and Northeast monsoon)

From wind forecast analyses at the 850-hPa and 200-hPa during April until early May 2018, monsoon will be near-normal active before turning to become southwest monsoon during middle May 2018 when the southwest monsoon is slightly-above-normal active at the Southern Thailand.

Then during June to July 2018, the southwest monsoon will be near-normal to slightly-above-normal active for overall Thailand. Consequently, Thailand will meet near-normal rain.



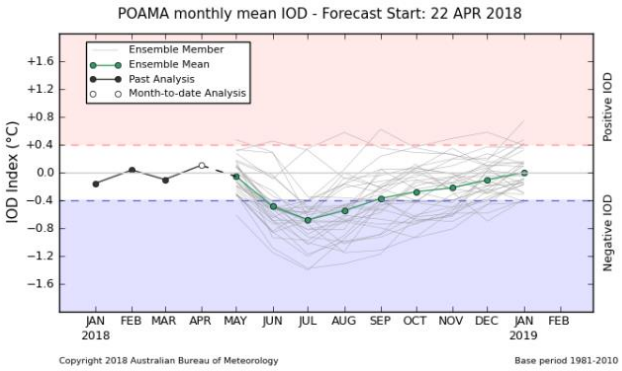
850 hPa wind anomalies forecast for May to July 2018 (TCC/JMA)



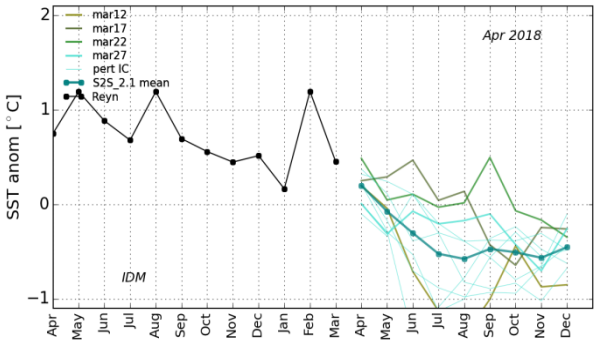
May to July average 850 hPa wind climatology using the 1981-2010 base period (NCEP)

3. Indian Ocean Dipole (IOD)

During the past March till April 2018, IOD was still neutral. Moreover, from forecast models of IOD index, IOD scenario probability and sea surface temperature around the Indian Ocean, they predicted that IOD will still be neutral for May 2018 and slightly negative during June and July 2018. In other words, IOD will not influence on the total rain and mean temperature of Thailand in May 2018. Nevertheless, during June and July 2018, IOD will cause 5-10% more slight rain from normal and about 5-10% reducing temperature from normal.



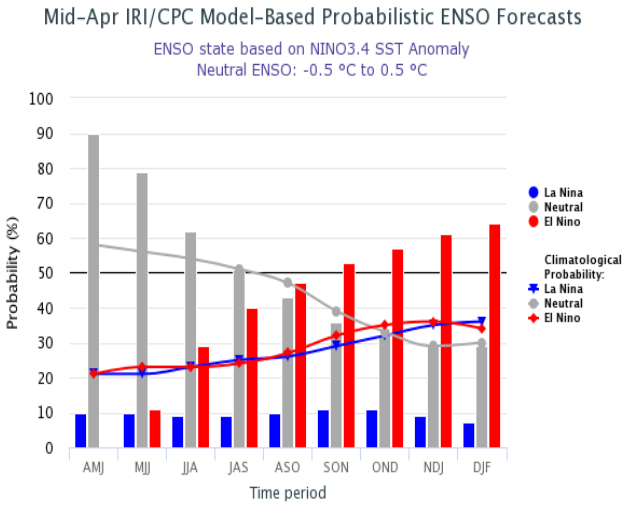
Model forecast of IOD index
(source: Bureau of Meteorology, Australia (BOM))



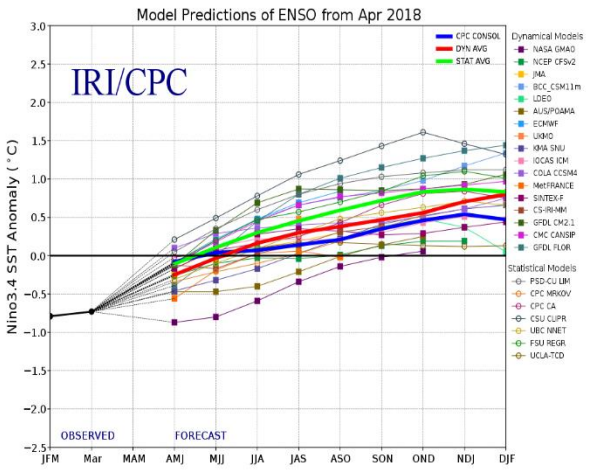
Model forecast of IOD index
(source: Japan Meteorological Agency (JMA))

4. El Niño Southern Oscillation (ENSO)

During the past March until middle April 2018, the ENSO phenomenon became weak La Niña (Nino 3.4 = -0.8). And from El Niño/Southern Oscillation (ENSO) Diagnostic Discussion, ENSO probability forecast, and ENSO: Recent Evolution, Current Status and Predictions, global climate centers predict that ENSO favors 55% chance to return back becoming neutral around April – May 2018. Furthermore, ENSO will still be neutral for the whole 2nd half of 2018.



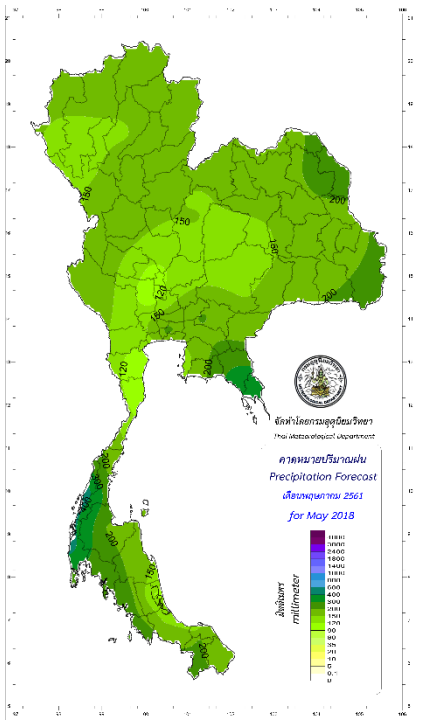
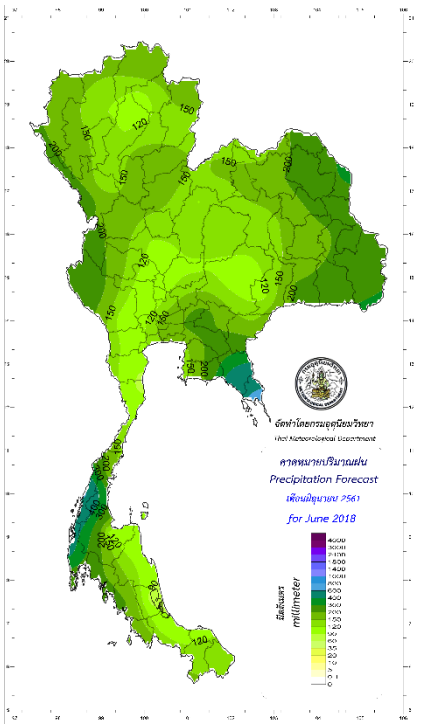
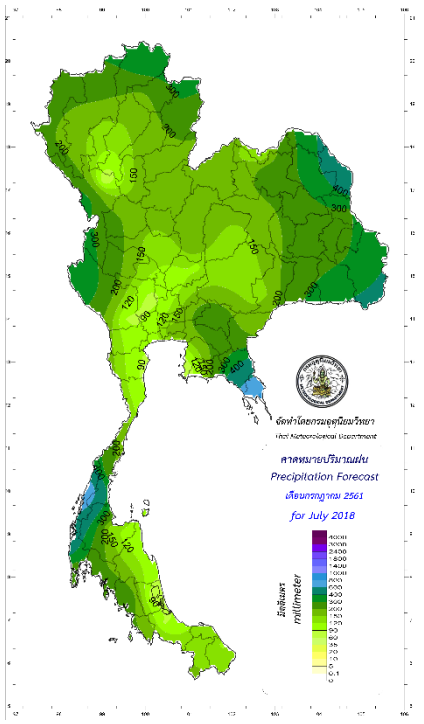
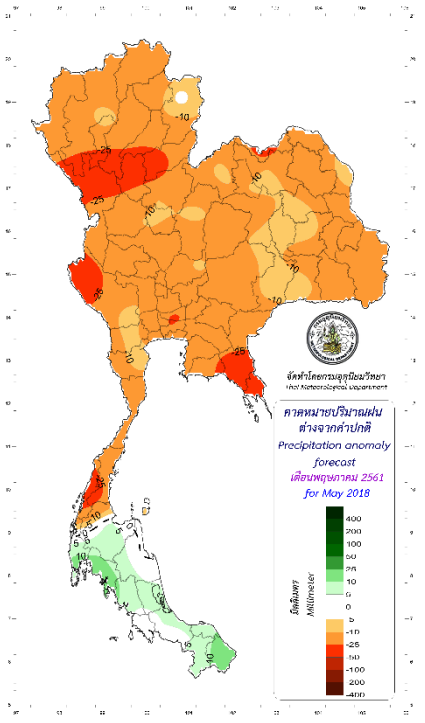
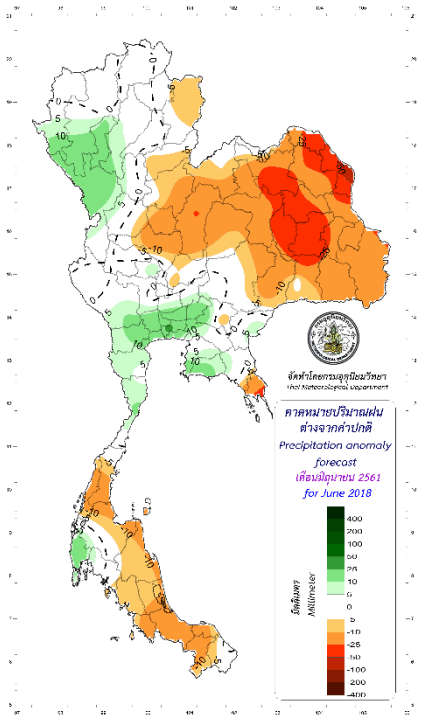
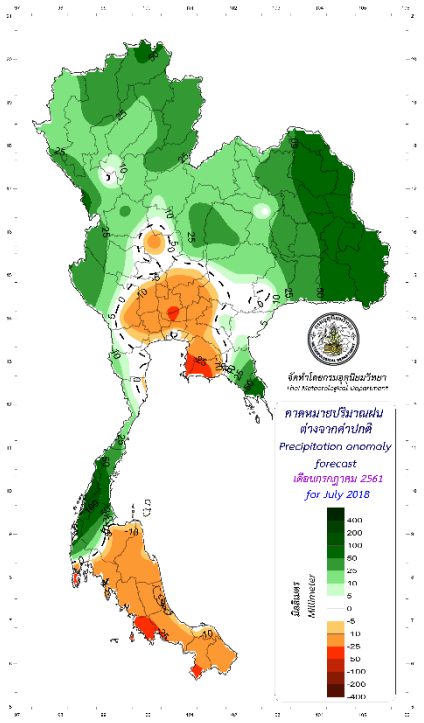
Graph of probabilistic ENSO forecasts
(source: IRI/CPC)



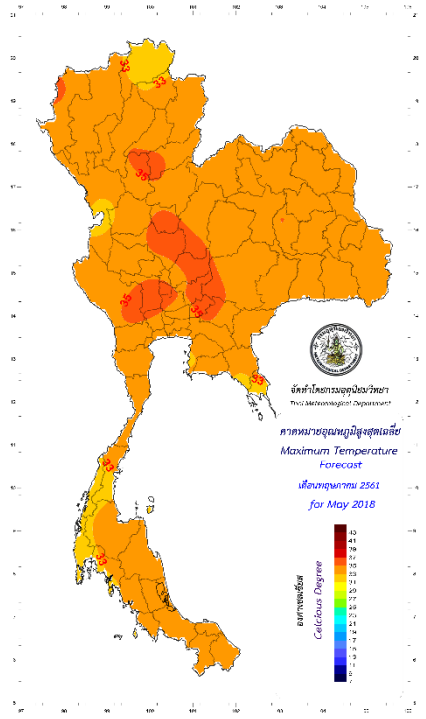
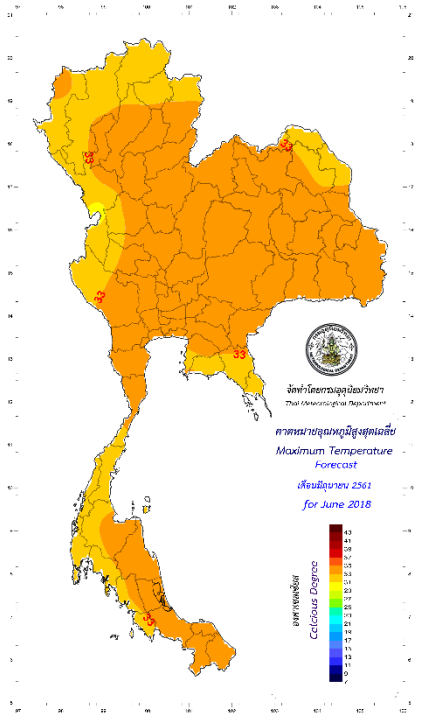
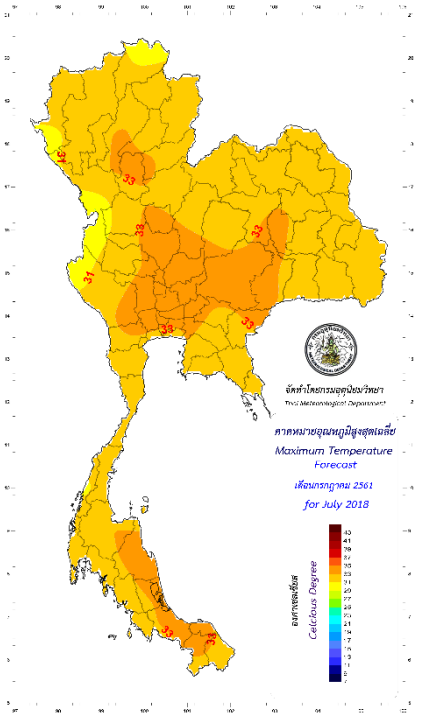
Mean sea surface temperature anomaly forecast
on Nino 3.4 region
from global climate centers
(source: IRI/CPC)

**** For further information, please visit www.tmd.go.th/en and www.climate.tmd.go.th ****

Precipitation (mm/month) and Precipitation Anomaly (mm/month) Forecast:

Precipitation forecast for May 2018	Precipitation forecast For June 2018	Precipitation forecast for July 2018
		
Precipitation anomaly forecast for May 2018	**Precipitation anomaly forecast for June 2018**	**Precipitation anomaly forecast for July 2018**
		

Mean Maximum Temperature (℃) and anomaly (℃) Forecast:

Mean maximum temperature for May 2018	Mean maximum temperature for June 2018	Mean maximum temperature for July 2018
		
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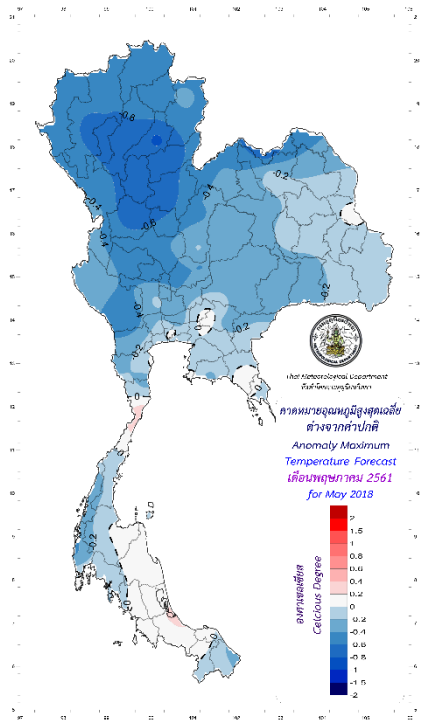	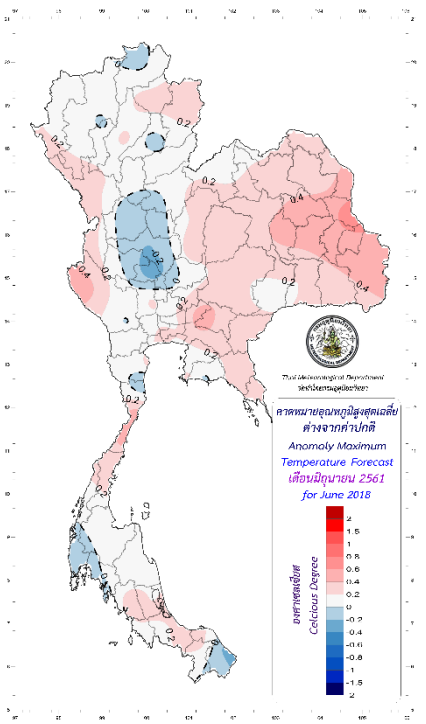	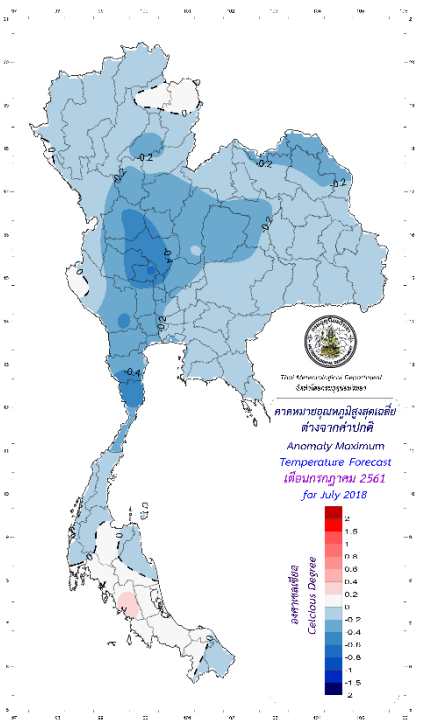

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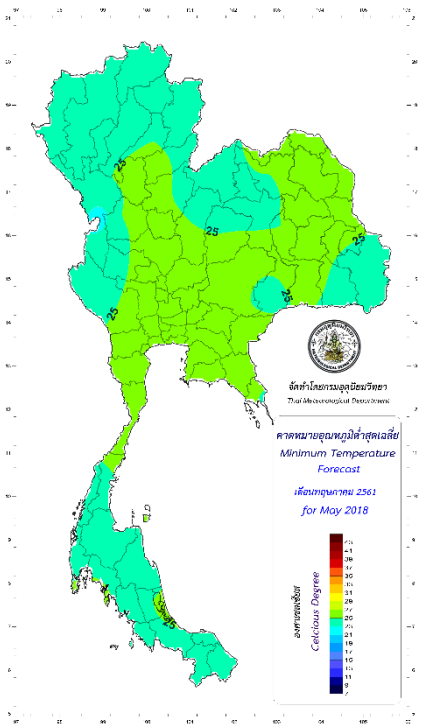
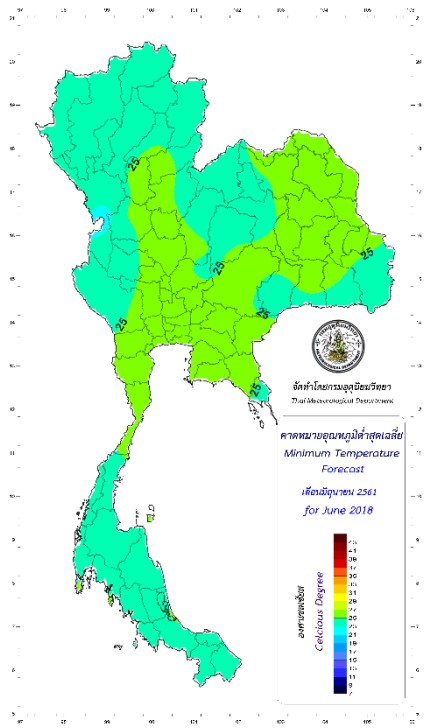
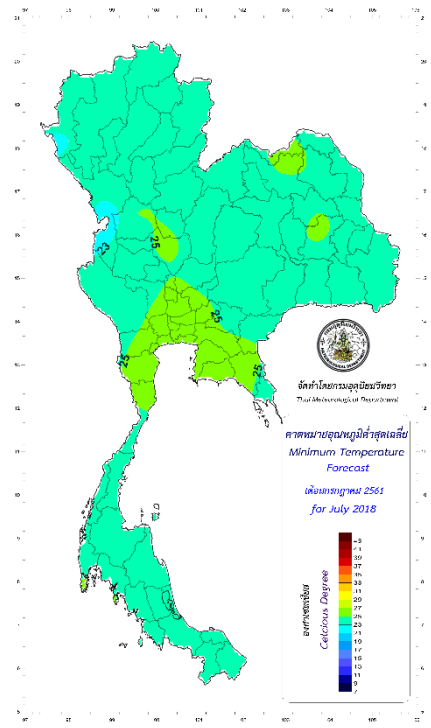
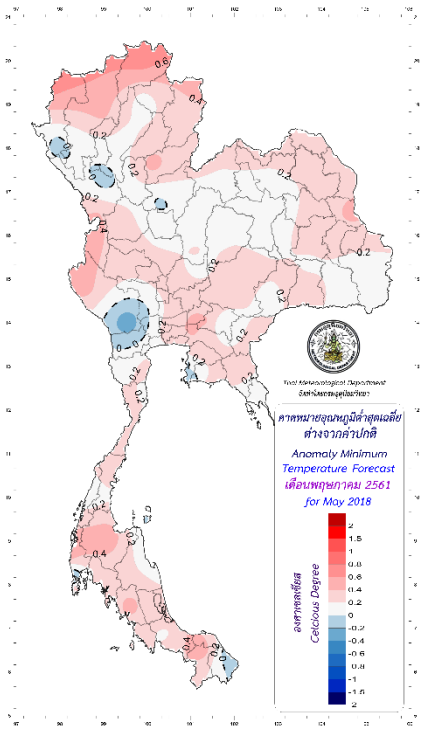
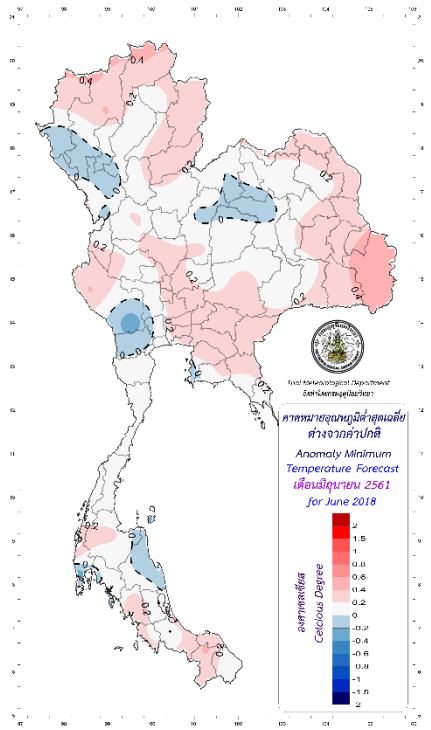
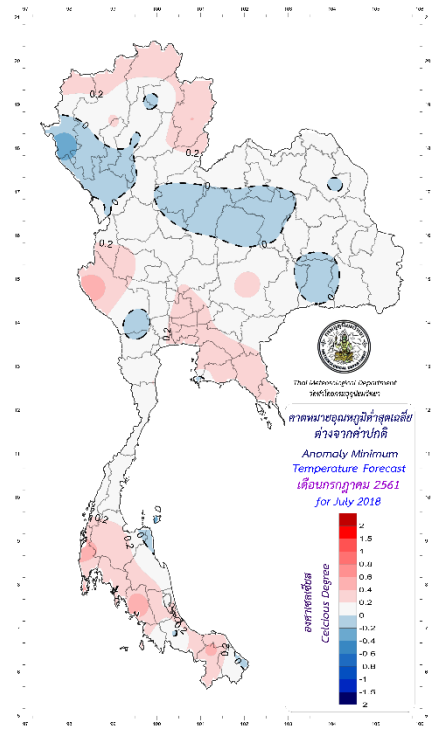
		
Mean minimum temperature anomaly forecast for May 2018	Mean minimum temperature anomaly forecast for June 2018	Mean minimum temperature anomaly forecast for July 2018
		

*** **Caution:** ***

May 2018: Some low-pressure air mass cells possibly develop around the Andaman Sea and may strengthen to become depressions, tropical storms or cyclones. Their movements are toward the western side of Thailand. As a result, the western portion at both of the northern and central parts including with that of the Southern Thailand will meet more rain.

June and July 2018: Some tropical cyclones often develop at the western side of the North Pacific and they may move pass the Philippines toward the South China Sea. This will influence the prevailing southwest monsoon over Thailand and the Gulf of Thailand to become more active. As a result, Thailand will meet more rain, specifically at the coastal region of the eastern part and the Southern Thailand (west coast).

Late June till early July 2018: Dry spell often occurs. In other words, the amount and distribution of rain will lessen greatly. This will cause water shortage for agriculture at many areas, specifically at the repeated drought areas outside irrigation zones.

Prediction of Rain (mm), Rainy Days (days) and comparing to normal:

Part	Prediction									Normal (Baseline period 1980-2010)					
	May 2018			June 2018			July 2018			May		June		July	
	Rain (mm)	Rainy Days (days)	Comparing To Normal	Rain (mm)	Rainy Days (days)	Comparing To Normal	Rain (mm)	Rainy Days (days)	Comparing To Normal	Rain (mm)	Rainy Days (days)	Rain (mm)	Rainy Days (days)	Rain (mm)	Rainy Days (days)
Northern	115-170	14-16	10 % Below normal	110-205	17-19	Near normal	165-220	19-21	15 % Above normal	177.8	15.5	156.2	17.8	176.0	19.4
Northeastern	145-190	14-16	5 % Below normal	110-220	15-17	10 % Below normal	205-280	17-19	20 % Above normal	187.1	15.3	203.4	16.1	211.4	17.4
Central	100-145	13-15	10 % Below normal	95-185	15-17	5 % Above normal	115-160	15-17	5 % Below normal	172.1	14.3	145.2	15.4	155.5	16.4
Eastern	150-200	14-16	10 % Below normal	190-340	16-18	Near normal	220-300	17-19	Near normal	223.9	15.8	261.5	16.7	277.5	17.2
Southern Thailand (East Coast)	115-165	14-16	Near normal	60-140	12-14	5 % Below normal	85-125	13-15	5 % Below normal	143.7	14.3	113.0	13.7	118.9	14.5
Southern Thailand (West Coast)	270-355	19-21	Near normal	220-380	18-20	Near normal	285-395	19-21	10 % Above normal	310.1	19.9	312.4	18.9	336.5	19.8
Bangkok Metropolis and Vicinity	145-215	15-17	10 % Below normal	155-295	16-18	15 % Above normal	110-155	16-18	5 % Below normal	247.7	16.2	157.1	16.2	175.1	17.1

Prediction of Mean Maximum Temperature (Tmax) and Mean Minimum Temperature (Tmin) (°C) and comparing to normal:

Part	Prediction									Normal (Baseline period 1980-2010)					
	May 2018			June 2018			July 2018			May		June		July	
	Tmax mean	Tmin mean	Comparing to Normal	Tmax mean	Tmin mean	Comparing to Normal	Tmax mean	Tmin mean	Comparing to Normal	Tmax mean	Tmin mean	Tmax mean	Tmin mean	Tmax mean	Tmin mean
Northern	33-36	23-25	Near normal	32-34	23-25	Near normal	31-33	23-25	Near normal	34.7	24.2	33.0	24.3	32.1	24.0
Northeastern	33-35	24-26	Near normal	33-35	24-26	Near normal	31-34	24-26	Near normal	34.4	24.8	33.4	24.9	32.8	24.6
Central	34-36	24-26	Near normal	33-35	24-26	Near normal	32-34	24-26	Near normal	35.2	25.7	34.0	25.5	33.4	25.1
Eastern	32-35	25-27	Near normal	32-34	25-27	Near normal	31-33	25-27	Near normal	33.7	25.8	32.8	25.7	32.2	25.3
Southern Thailand (East Coast)	32-35	24-26	Near normal	33-34	24-26	Near normal	32-34	24-26	Near normal	33.5	24.9	33.1	24.7	32.8	24.4
Southern Thailand (West Coast)	32-34	24-26	Near normal	31-33	24-26	Near normal	31-33	24-26	Near normal	32.7	24.6	32.0	24.6	31.7	24.3
Bangkok Metropolis and Vicinity	33-36	25-28	Near normal	33-35	25-27	Near normal	32-34	25-27	Near normal	34.4	26.3	33.6	26.1	33.2	25.7

Remarks:

- Normal means average during the 30-year period (A.D. 1981 – 2010 or B.E. 2524 – 2553).
- This long range climate forecast is created by applying some climate models and statistical methods, the public then should follow the daily weather forecast news from the Thai Meteorological Department for more accuracy further.
- The next 3-month climate forecast will be published online before the end of May 2018.
- Further enquiry of monthly climate, 3-month climate and seasonal forecasts can be preceded at Tel: 02-398-9929 or Fax: 02-383-8827.
- Also, please follow monthly climate, 3-month climate and seasonal forecasts at http://www.tmd.go.th/en/ at the climate tab.

Climate Center, Meteorological Development Division,
Thai Meteorological Department, Ministry of Digital Economy and Society.