Mekong River Commission

Regional Flood and Drought Management Centre

Weekly Situation Report for the Wet Season in the Mekong River Basin

Prepared on: 09/06/2020, covering the week from 01 to 08 June 2020

Weather Patterns, General Behaviours of the Mekong River and Outlook Situation

General weather patterns

From 1st to 8th June 2020, there were some rainfall in the LMB. The weather outlook bulletins (3 months weather forecast: Amy-Jun-Jul) and maps issued by the Thailand Meteorology Department (TMD) were used to verify the weather condition in the LMB. They stated that from May-Jun-Jul 2020, the low-pressures of air mass cells are developed around the Mekong Region that cause some depressions and tropical cyclones, resulting summer thunderstorms and rain in this period. Moreover, coldly high-pressure air masses from China will meet hot air masses already prevailing over LMB, resulting in abnormal rainfall in the first week of June 2020. **Figure 1** presented the weather map on 08 June 2020.

Although the Dry Season 2020 is finished, but still the scattered hotspots were detected in Cambodia and Thailand, and isolated ones were also detected in Myanmar, Lao PDR and southern Viet Nam in early June 2020.

According to the Asian Specialized Meteorological Centre (ASMC), the predicted below normal rainfall in the Mekong region is showed in June 2020. For the season June to August 2020, there is an increased chance of above-normal rainfall for most parts of the equatorial region. **Figure 2** showed the predicted 3 months rainfall in Jun-Jul-Aug 2020 in Southeast Asia.

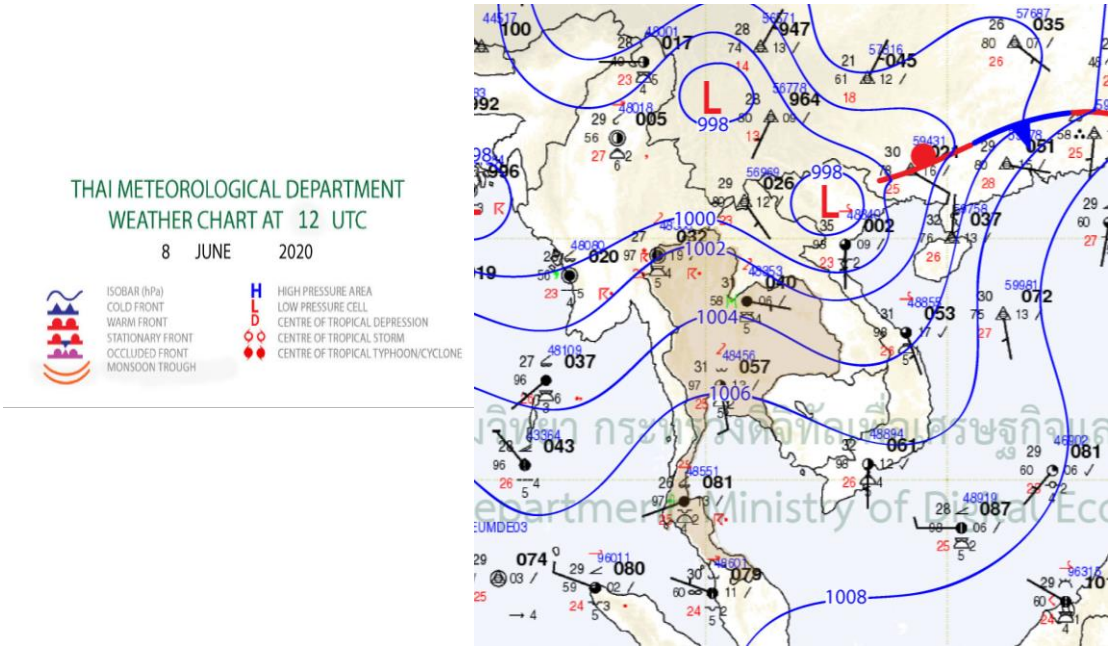


Figure 1 Summary of weather condition over the LMB on 08 June 2020

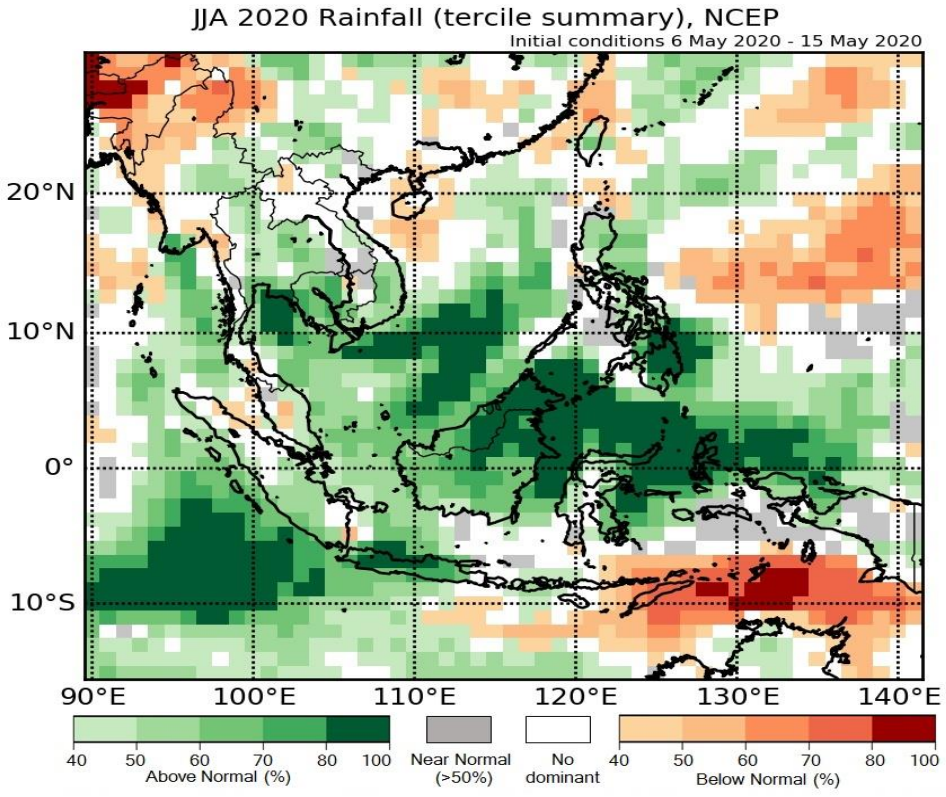


Figure 2 The 3 months predicted rainfall over Asian Countries by ASMC

Tropical depressions (TD), tropical storms (TS) or typhoons (TY)

No Depression or tropical depression (TD), Tropical Storm (TS) or Typhoon (TY) were presented in LMB during this week.

The rainfall pattern over the LMB

The weather of this week was brought low rainfall in the LMB. Rainfall in this week was considered below average, varied from 0.1 mm to 50 mm. The weekly rainfall distribution in the Lower Mekong Basin from 1st to 8th June 2020 is showed in **Figure 3.**

It also indicated that this week rainfall over the LMB varied from place to places, which showed the less rainfall in the upper most part from Chiang Sean to Nong Khai, but the middle part from Paksene to Kratei were showed moderate.

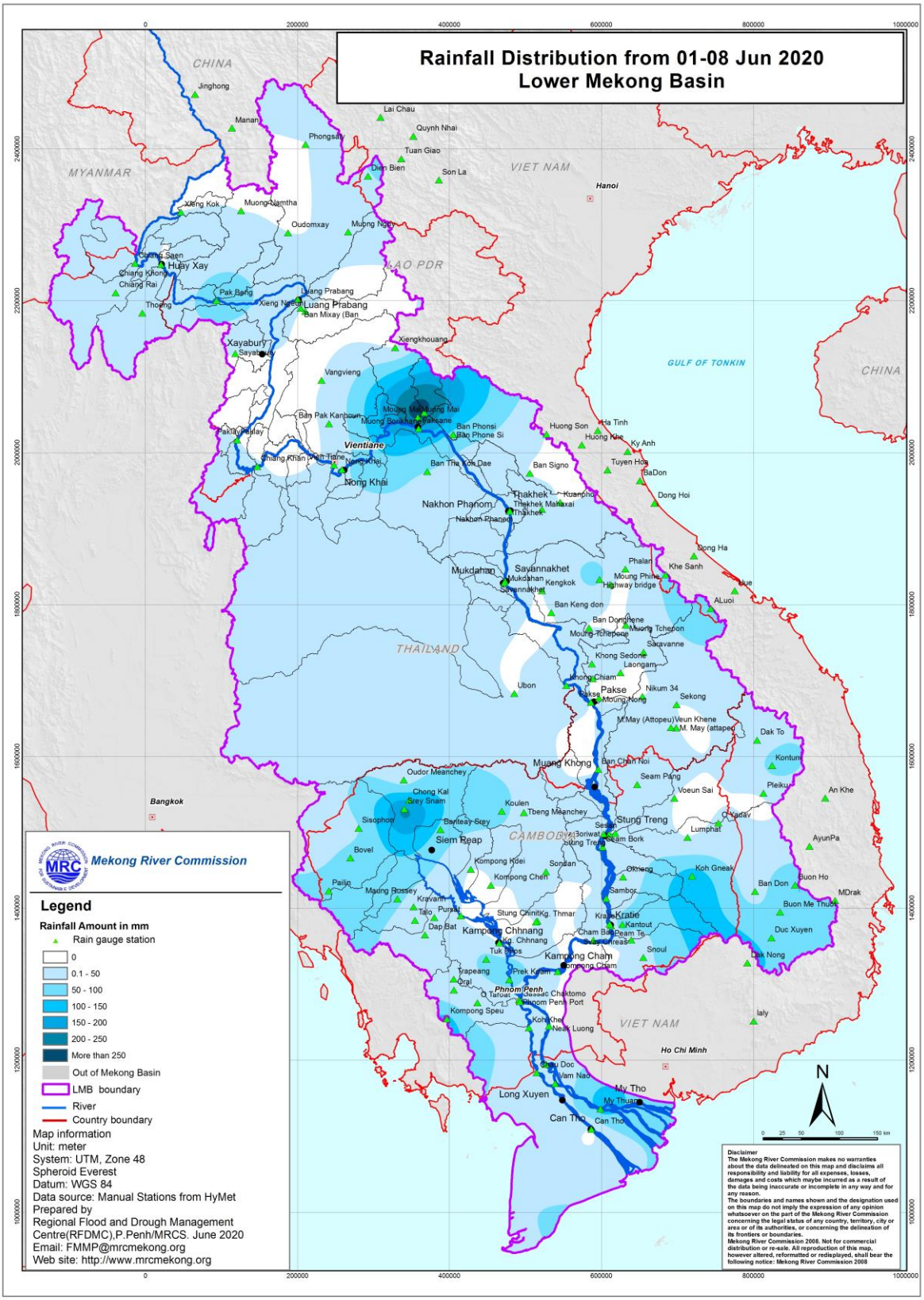


Figure 3 The weekly rainfall distribution from 1st to 08th June 2020 over the LMB

General Situation on water levels of the Mekong River:

This week from 1st to 08th June 2020, water levels at the upper most station of Chiang Sean were fluctuated, varied from -0.02 m to -0.39 m. This fluctuated water levels at this station were due to the inflow from upstream and below average rainfall within this week.

Water levels at Luang Prabang and Chiang Khan are likely impacted by hydropower dam at Xayaburi and upstream hydropower dams. At Lung Prabang, water levels were fluctuated over their long-term average (LTA) levels. Water levels at Chaing Khan (downstream of Xayaburi) were also fluctuated, varied from -0.03 m to -0.18 m. Water levels at stations in the middle part of LMB from Lao's Vientiane to Thailand's Nakhon Phanom were followed the same trends from upstream, which currently water levels at these stations are below their LATs.

Further observation at Thailand's Mukdahan to Laos's Pakse, water levels were also below their LTAs, followed the same trend from upstream reach from 1st to 08th June 2020.

This week water levels at stations of Stung Treng, Kratie Kampong Cham, Neak Luong, on the Mekong, Chaktomuk and Koh Khel on the Bassac and Phnom Penh Port and Prekdam on the Tonle Sap were slightly increased but still below their LTAs.

For the 2 tidal stations at Tan Chau and Chau Doc, water levels are having been fluctuating below their LTAs due to the daily tidal effect from the sea. The attached hydrograph at each key station is showed in **Annex B**. **Figure 4** presented the stations for river monitoring with model application for river monitoring.

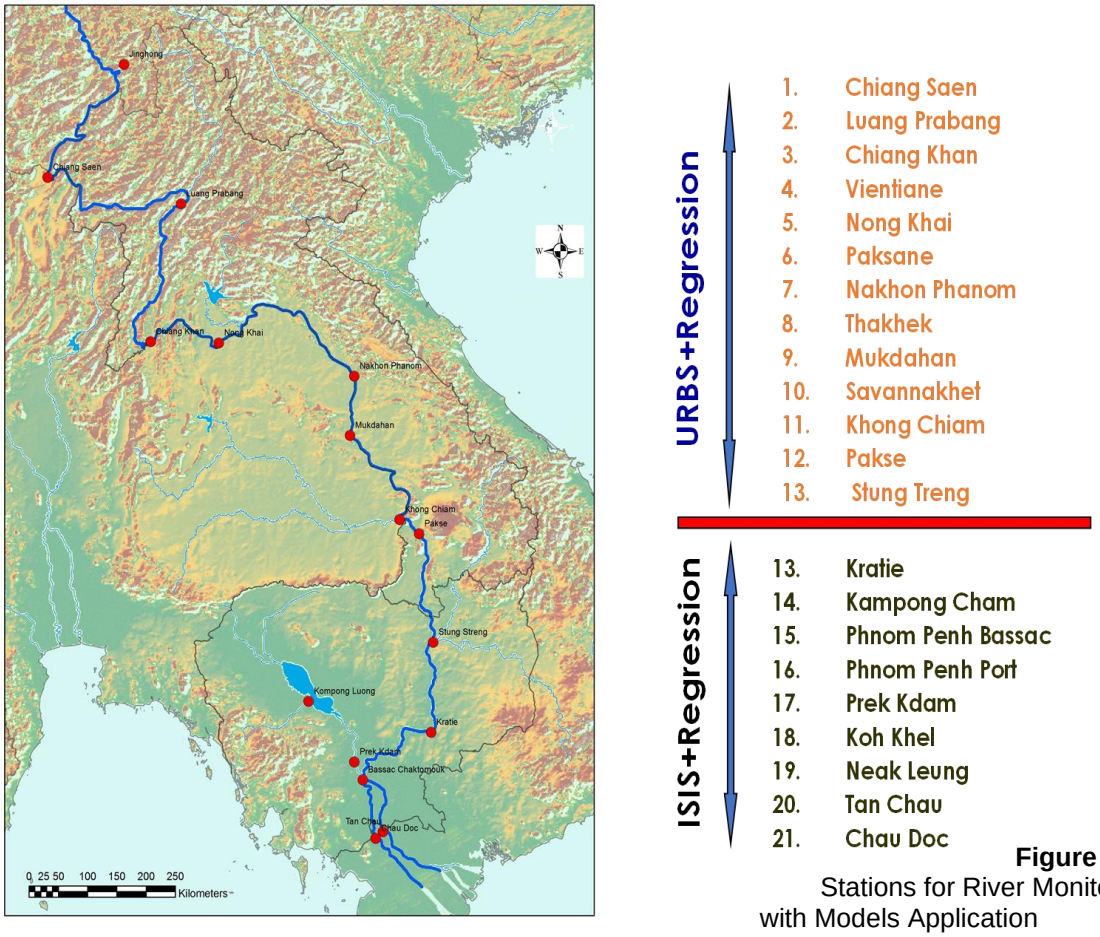


Figure 4
Stations for River Monitoring with Models Application

For stations from Chiang Saen and Luang Prabang

Water levels from 1st to 08th June 2020 at Chiang Sean station were fluctuated, varied -0.02 m to -0.39 m. At Luang Prabang station, water levels were also decreased but still stay over their LTA levels. Water levels at this station are likely impacted by hydropower dam at Xayaburi and upstream hydropower dams.

For stations from Chiang Khan, Vientiane-Nong Khai and Paksane

Water levels from 1st to 08th June 2020 at Chiang Khan station were likely nominated by upstream hydropower dam of Xayaburi, which decreasing from -0.03 m to -0.18 m that caused low inflow to downstream reach at Vientiane, Nong Khai and Paksane. The current observed water levels at these stations are below their LTAs.

For stations from Nakhon Phanom to Pakse

Water levels from 1st to 08th June 2020 at Nakhon Phanom to Pakse stations were decreased, followed the same trend from upstream which varied from -0.02 m to -0.07 m due to the low inflows and less rainfall from upper sub-catchments. This week water levels at these stations were below their LTAs.

For stations from Stung Treng to Kampong Cham/ Phnom Penh to Koh Khel/ Neak Luong

This week from 1st to 08th June 2020, water levels at stations of Stung Treng and Kratie Kampong Cham, Chaktomuk, Koh Khel, Phnom Penh Port and Prekdam were also dropped below their LTAs. As observing at Neak Luong on the Mekong, Chaktomuk on the Bassac and Koh Khel on the Bassac, their water levels were influencing by tidal from the sea due to the low water level of the Mekong from November 2019 to March 2020 (these water levels are followed the same trends of 2015-2016).

For the tidal stations at Tan Chau and Chau Doc

From 1st to 08th June 2020, water levels at the 2 tidal stations at Tan Chau and Chau Doc were dropped below their LTAs due to the strong tidal effect from the sea.

According to the Japan Meteorological Agency (JMA), Sea surface temperature (SST) variability in the tropics Neutral, which has no major impact in to the South China Sea from March to May 2020.

Discussion and Conclusion

From 1st to 08th June 2020, the trend of water levels at Chiang Sean were fluctuated due to the inflow from upstream and catchment rainfall. Water level at Chiang Sean is relied from inflow at Jinghong Hydropower Station on Lancang and its catchment rainfall.

Luang Prabang stations is likely nominated by hydropower dam operation from upstream (tributaries) and downstream (Xayaburi) in which their water levels always fluctuated above their LTAs during the dry season from Nov to May. It was observed that water levels at this station have been affected, since the impounding reservoir at Xayaburi last year in October 2019.

Analysis of the Mekong River Commission's data revealed that the drop of water levels at this week along the Mekong mainstream (Chiang Sean and Luang Prabang) were resulted of less rainfall from catchment inflows and low inflows from upstream due to dam operation, including major tributaries inflows upstream.

Water levels at stations in the middle part of LMB from Vientiane to Pakse were decreased, following the same trend inflows from upstream and less rainfall from sub-catchments. The recent water levels at these stations are below their LTAs. This low flow indicated the low inflow from upstream and less rainfall from catchments network.

From Stung Treng, Kratie, Kampong Cham and Neak Luong on the Mekong, Phnom Penh Port to Prekdam on the Tonle Sap river and Chaktomuk and Koh Khel on the Bassac river, the current water levels are below their LTAs although some rainfall in the floodplain area.

The Mekong river flow depends not only on the flow from the upstream, but also on the rainfall from sub-catchment inflows. The contribution to the Mekong river's flow from the Upper Mekong Basin in China (Yunnan component) is about 16% by the time the river discharges through the Mekong Delta into the South China Sea. By far the major contribution comes from the two majors 'left-bank' (eastern) tributaries

between Vientiane – Nakhon Phanom and Pakse – Stung Treng, which together contribute more than 40% of the flows.

Since the beginning of this year 2020, there were very low water level in the lower Mekong River, due to low rainfall in the basin in 2019. Like many parts of the world, the Mekong region has been affected by the prolonged El Nino phenomenon, the phenomenon that usually causes extreme heat and insufficient rain in 2019. The cause of below average water levels in the Mekong mainstream in Jan-Feb-Mar 2020 is likely due to unusual low rainfall in 2019 and the effected El Nino process over the Mekong region 2019.

The amount of water flowing from Jinghong dam in China could also be a potential contribution of the low flow at the upper part of the LMB (Chaing Saen-Vientiane). According to the notification from China, were decreased about 0.76m, due to the test of equipment of hydropower dam at Jinghong from 27 Dec 2019 to 4 Jan 2020.

Another potential important reason of low flow in the mainstream (Jan-Feb-Mar) was the contribution from major tributary dams. Potentially, there were storing waters that contributed to the Mekong river basin in time of no or low rainfall. This has impacted the basin situation. However, we do not have any official data to quantify their contribution.

The Tonle Sap Flow

At the end of wet season when the inflow of the Mekong is receded, the flow of the Tonle Sap Lake (TLS Lake) is being flow out. **Figure 4** showed the seasonal change of inflow/reversed flows and outflows. It was indicated that the outflows of the Tonle Sap Lake are matched to their LTAs, since early April 2020. **Table 1** showed the monthly change in volume of the Tonle Sap Lake with hydrographs comparing the flow between its LTA, 2018, 2019 and the recent year 2020 (up to 08 June). The low inflow from the Mekong and the less rainfall in the surrounding sub-catchments caused the outflow volume from the TLS Lake in 2020 is very low. The low outflow from the Tonle Sap Lake could affect the Mekong Delta of low water levels during the dry season, which could face of water shortage for agricultural production in that area. Since last week the outflows for the Tonle Sap Lake is returned to normal situation due to the rainfall from catchments.

The low outflow from the Tonle Sap could also affect the expanding unsaturated soil that may cause bank erosion and increase salinity intrusion from the sea in the Mekong Delta.

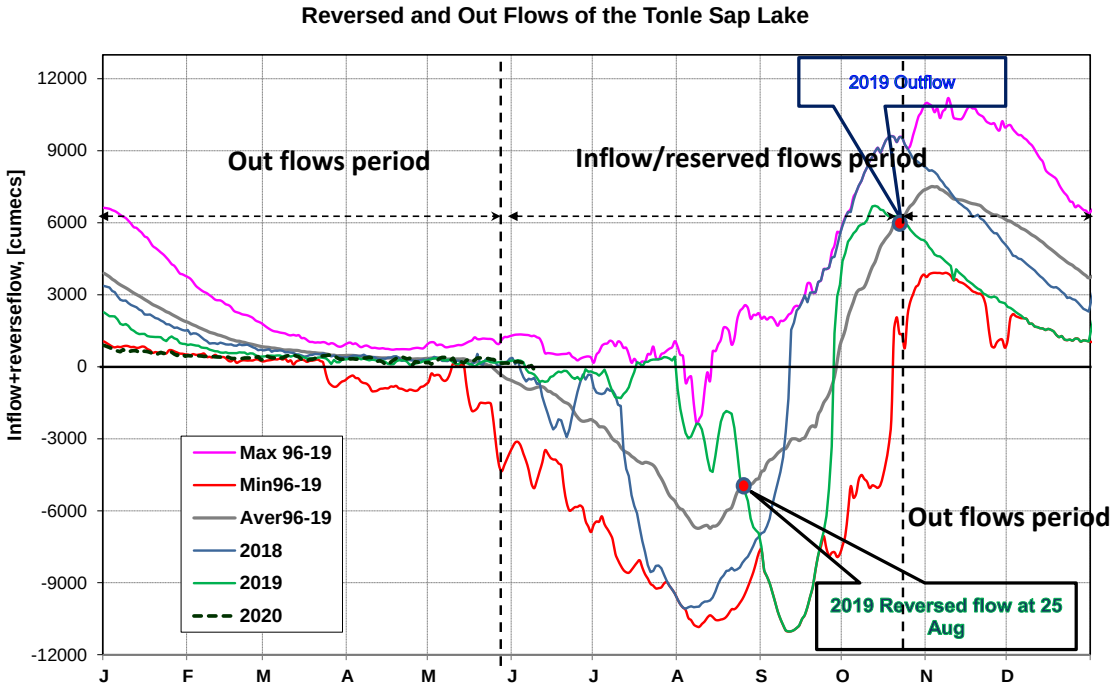
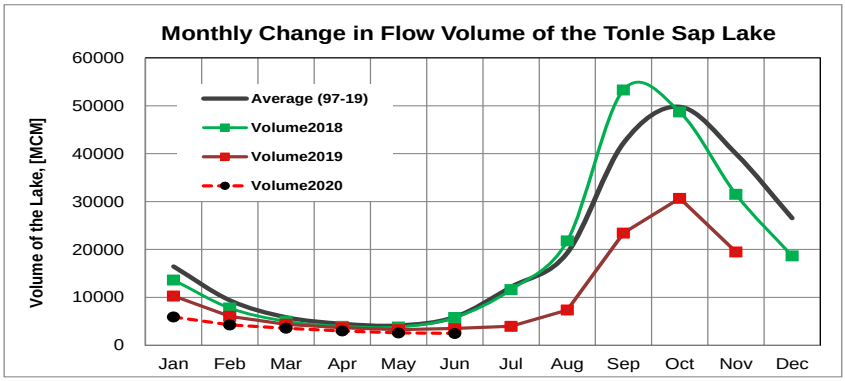


Figure 4 The seasonal change of inflows and outflows of the Tole Sap Lake

Table 1: The monthly change in flow volume of the Tonle Sap Lake.

Month	Average (97-19)	Volume2018	Volume2019	Volume2020
Jan	16452.95	13633.41	10285.31	5906.80
Feb	9392.13	7784.12	6057.31	4264.19
Mar	5868.92	5037.06	4387.48	3560.35
Apr	4502.51	3978.57	3667.47	2992.61
May	4154.68	3838.63	3266.43	2594.92
Jun	5919.22	5814.46	3508.31	2488.68
Jul	12179.21	11628.51	3979.76	
Aug	19275.58	21784.36	7364.72	
Sep	42196.41	53310.21	23434.07	
Oct	49773.40	48716.52	30680.83	
Nov	39996.78	31540.68	19471.72	
Dec	26537.70	18656.94	10697.45	
	Low-flow condition, comapred with LTA (Long term average)			
	Normal condition, compared with LTA (Long term average)			



The Trend of water level and its Outlook

Based on daily flood bulletin on 09 June 2020, water levels along the lower Mekong River from 09 to 14 June 2020 at Thailand's Chiang Saen to Lao PDR's Luang Prabang will expect to increase that can be varied from 0.05 m to 0.35 m. From Lao PDR's Vientiane and Thailand's Nong Khai, water levels will also increase, followed the same trend from upstream which can be varied from 0.03 m to 0.25 m. From Thailand's Nakhon Phanom to Lao PDR's Pakse, water levels will increase from 0.04 m to 0.20 m.

From Cambodia's Stung Treng to Neak Loung on the Mekong River, water will be increased varies from 0.05 m to 0.23 m. The water levels of the Tonle Sap Lake at Prekdam and Phnom Penh Port will also be increased from 0.02 m to 0.08 m. Also, water levels at Phnom Penh Chaktomuk on the Bassac River will increase vary from 0.02 m to 0.07 m.

For Viet Nam's Tan Chau on the Mekong River and Chau Doc on the Bassac River, water levels will be increased and fluctuated below their LTAs, follow the daily effect tidal from the sea.

Perhaps even more expecting based on the historical hydrology phenomenon, the abnormal rainfall can be occurred at the end June 2020, which can contribute to the flow in the Mekong River.

According to the Asian Specialized Meteorological Centre (ASMC), from June to August 2020, there will increase chance of above-normal rainfall in the Mekong-sub region. Although the Dry Season 2020 is finished, but still the scattered hotspots were detected in Cambodia and Thailand, and isolated ones were also detected in Myanmar, Lao PDR and southern Viet Nam in early June 2020.

Additionally, some tropical cyclones from the Pacific Ocean or the South China Sea may feasibly move near or toward Mekong region, based the seasonal outlook of TMD.

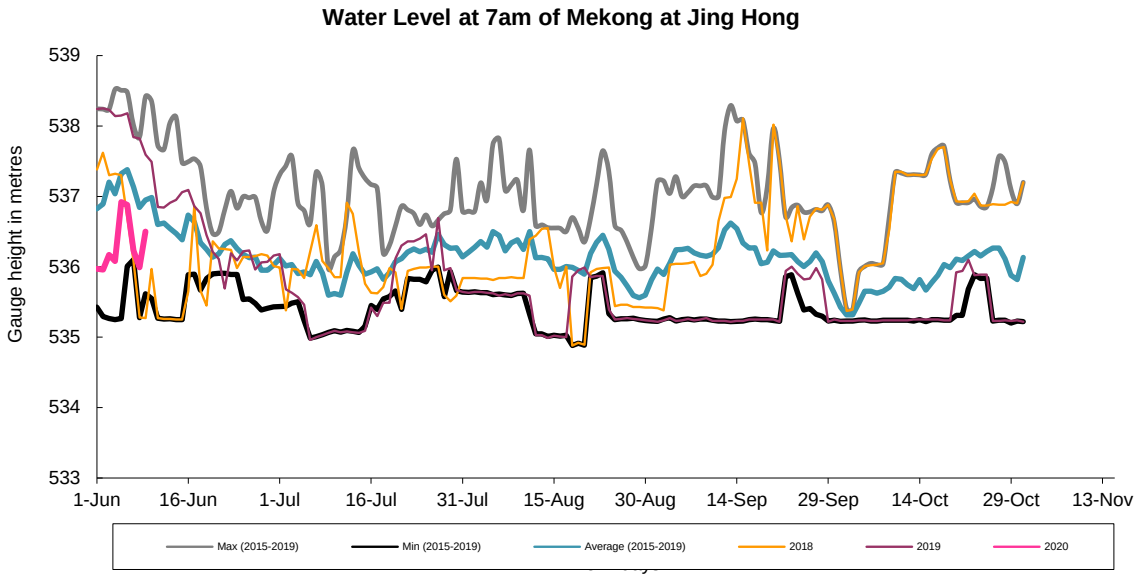
For details information on water levels and rainfall at each key station are presented in **Annex A** and **Annex B** are presented the Accuracy and performance of weekly flood forecasting.

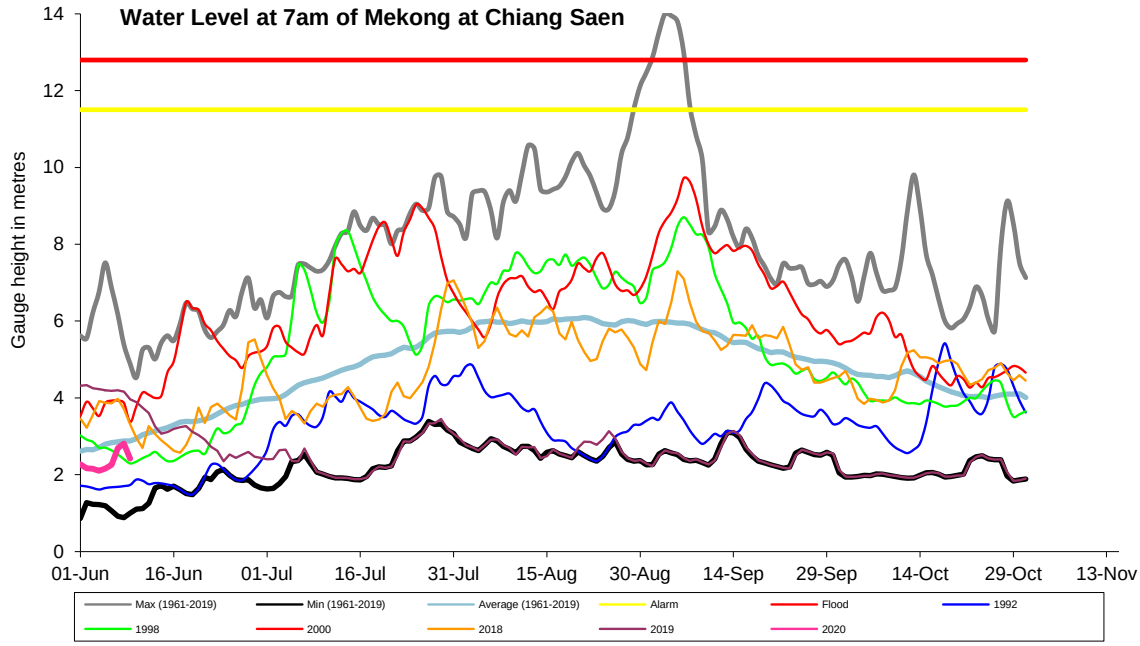
- The water levels hydrographs showing the observed water levels for the dry season (**Annex A**)

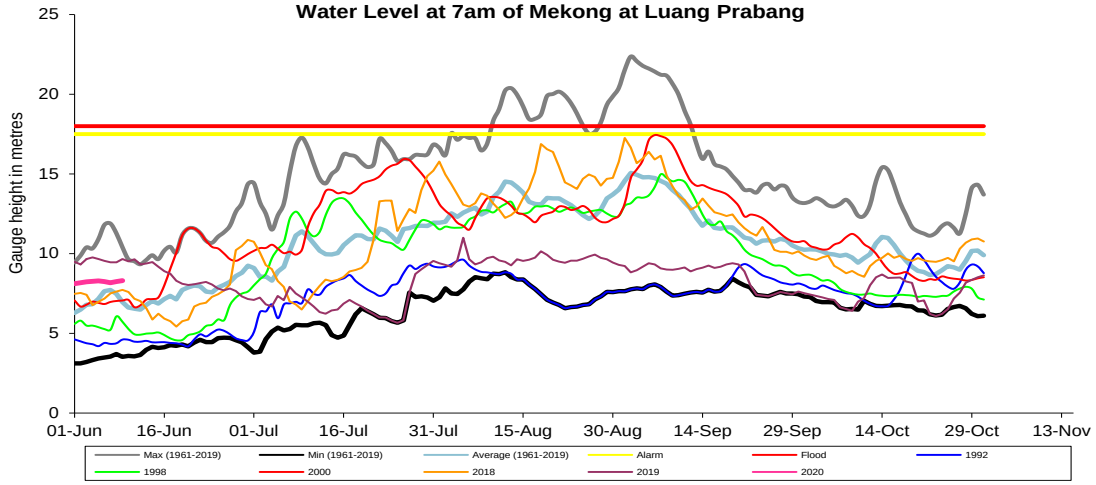
- Weekly Accuracy and Performance of flood forecasting (**Annex B**)

Annex A: Weekly Water Level Hydrographs at each key station

HYDROGRAPHS OF THE MEKONG AT MAINSTREAM STATIONS IN FLOOD SEASON UP TO 31 OCTOBER 2020






Water Level at 7am of Mekong at Luang Prabang
Gauge height in metres
25
20
15
10
5
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1961-2019)
Min (1961-2019)
Average (1961-2019)
Alarm
Flood
1992
1998
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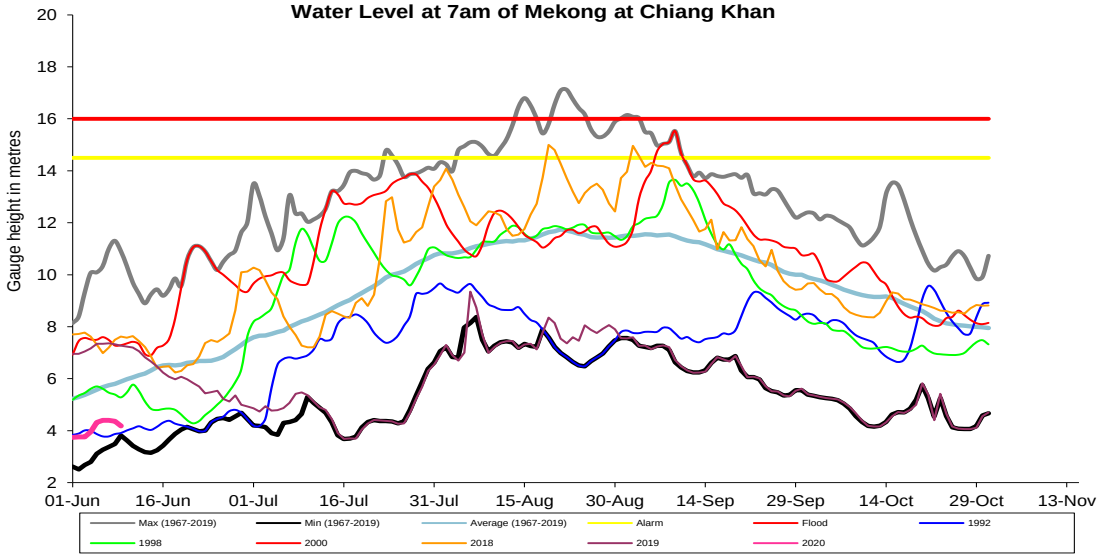
2020


Water Level at 7am of Mekong at Chiang Khan
Gauge height in metres
20
18
16
14
12
10
8
6
4
2
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1967-2019)
Min (1967-2019)
Average (1967-2019)
Alarm
Flood
1992
1998
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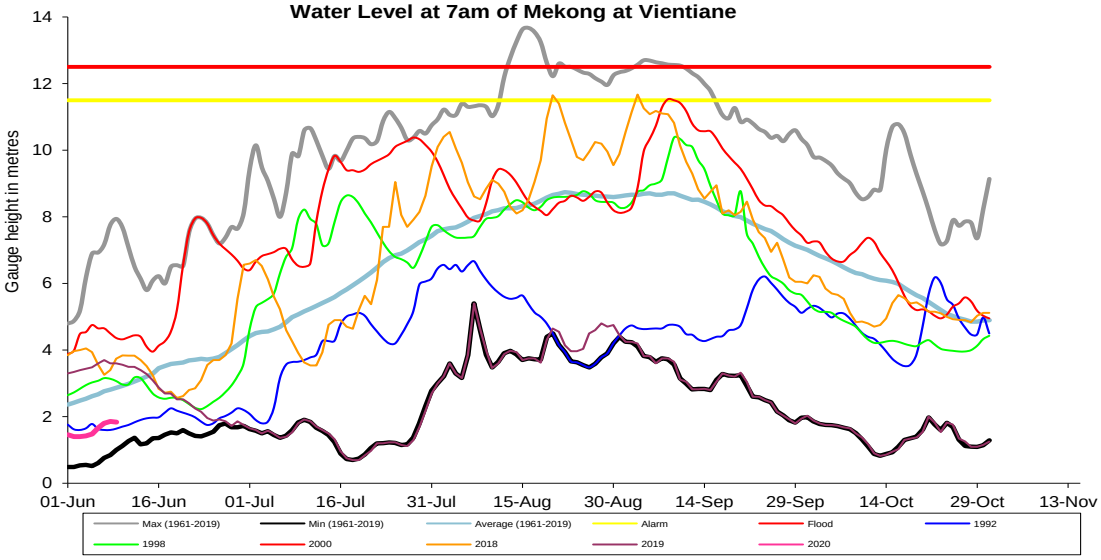
2020


Water Level at 7am of Mekong at Vientiane
Gauge height in metres
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1961-2019)
Min (1961-2019)
Average (1961-2019)
Alarm
Flood
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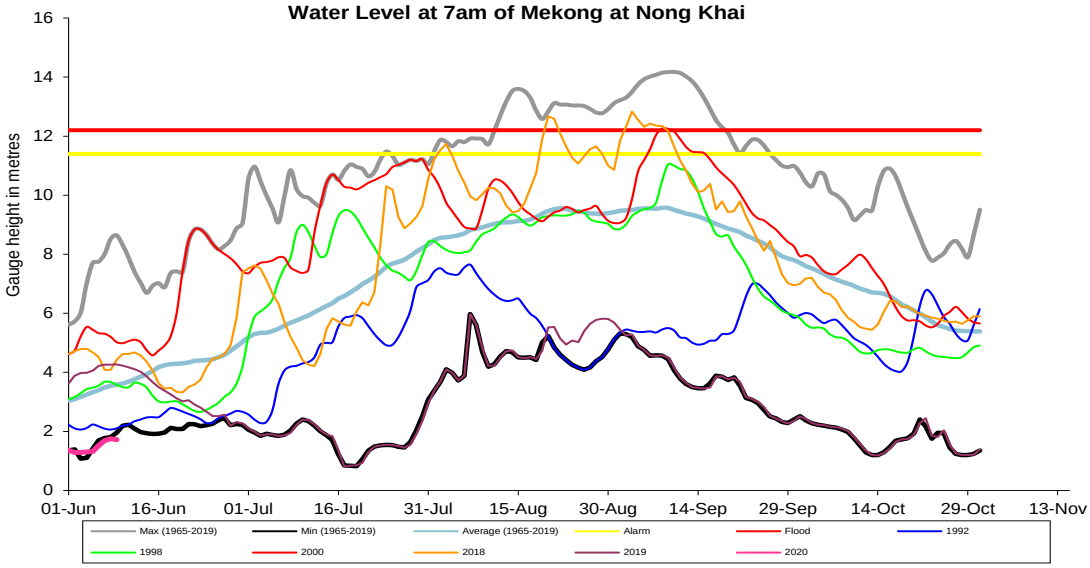
Water Level at 7am of Mekong at Nong Khai
Gauge height in metres
16
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1965-2019)
Min (1965-2019)
Average (1965-2019)
Alarm
Flood
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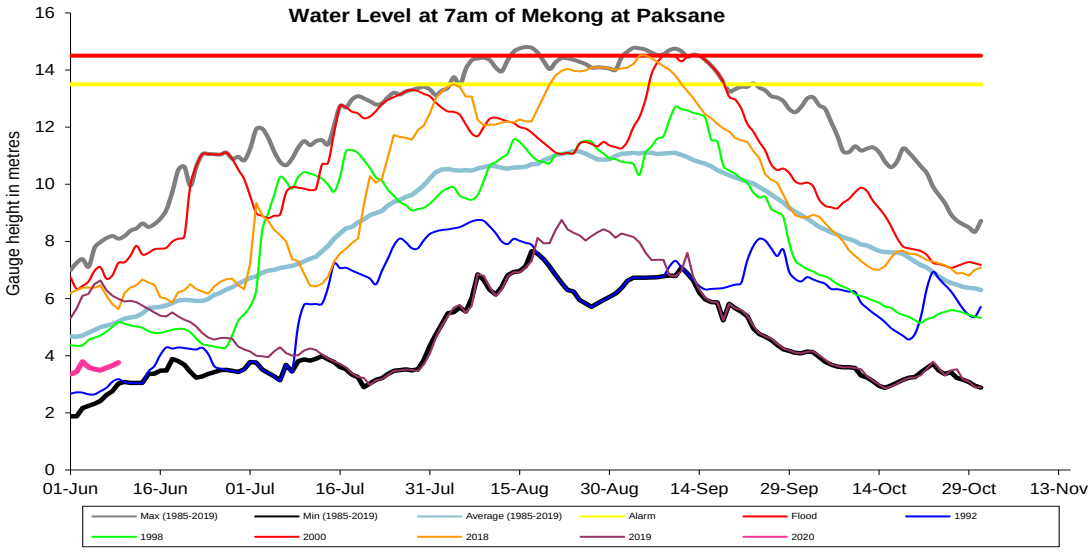
2019
2020


Water Level at 7am of Mekong at Paksane
Gauge height in metres
16
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1985-2019)
Min (1985-2019)
Average (1985-2019)
Alarm
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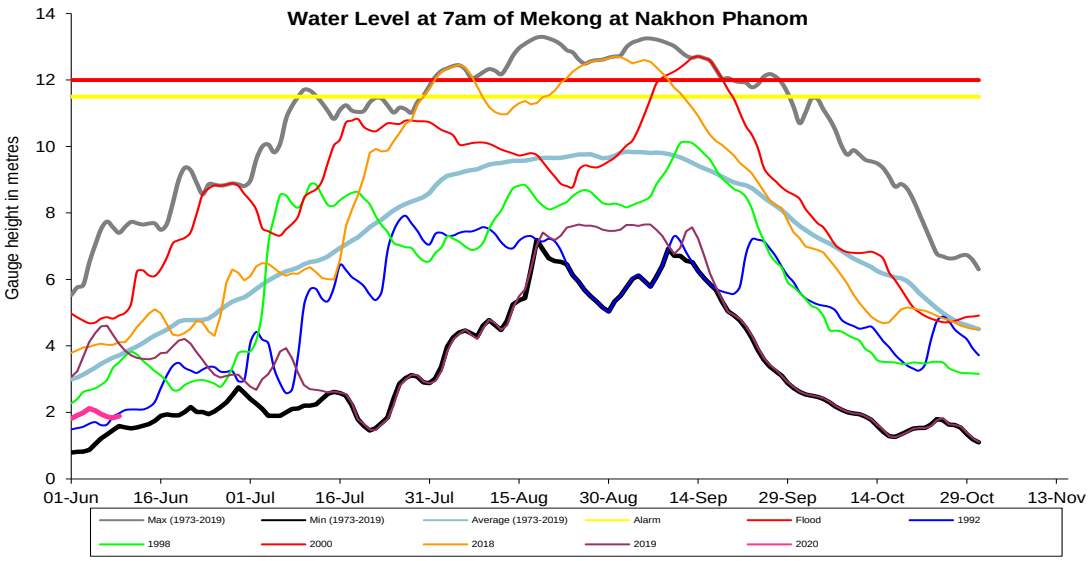
Water Level at 7am of Mekong at Nakhon Phanom
Gauge height in metres
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1973-2019)
Min (1973-2019)
Average (1973-2019)
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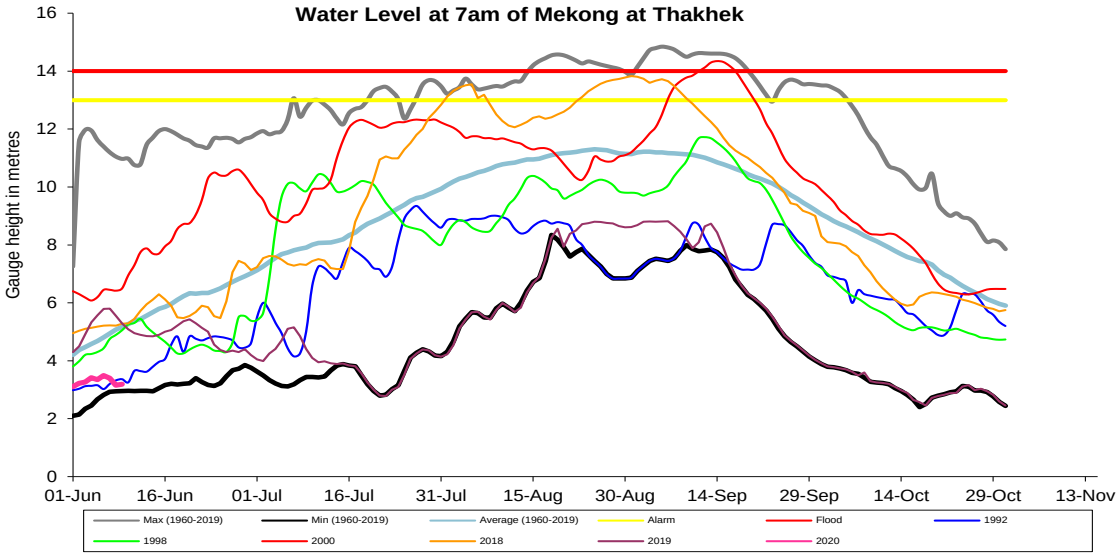
2020


Water Level at 7am of Mekong at Thakhek
Gauge height in metres
16
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1960-2019)
Min (1960-2019)
Average (1960-2019)
Alarm
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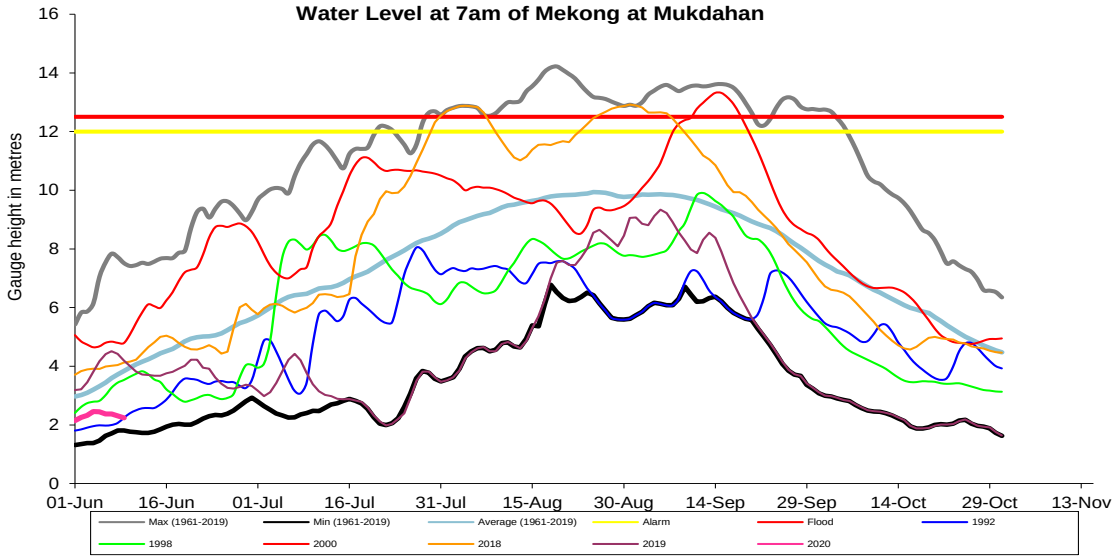
Water Level at 7am of Mekong at Mukdahan
Gauge height in metres
16
14
12
10
8
6
4
2
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01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1961-2019)
Min (1961-2019)
Average (1961-2019)
Alarm
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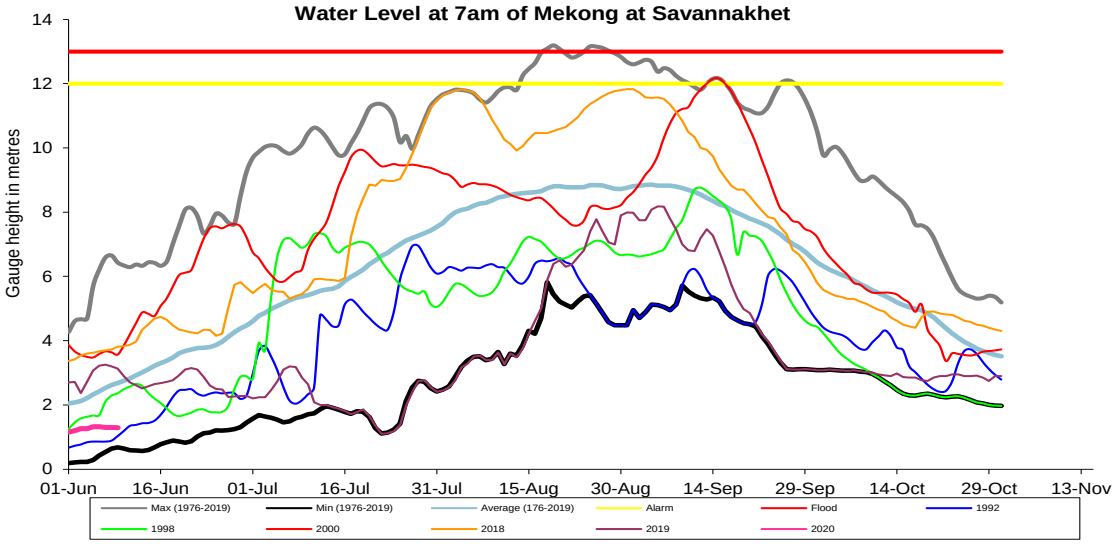
Water Level at 7am of Mekong at Savannakhet
Gauge height in metres
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1976-2019)
Min (1976-2019)
Average (176-2019)
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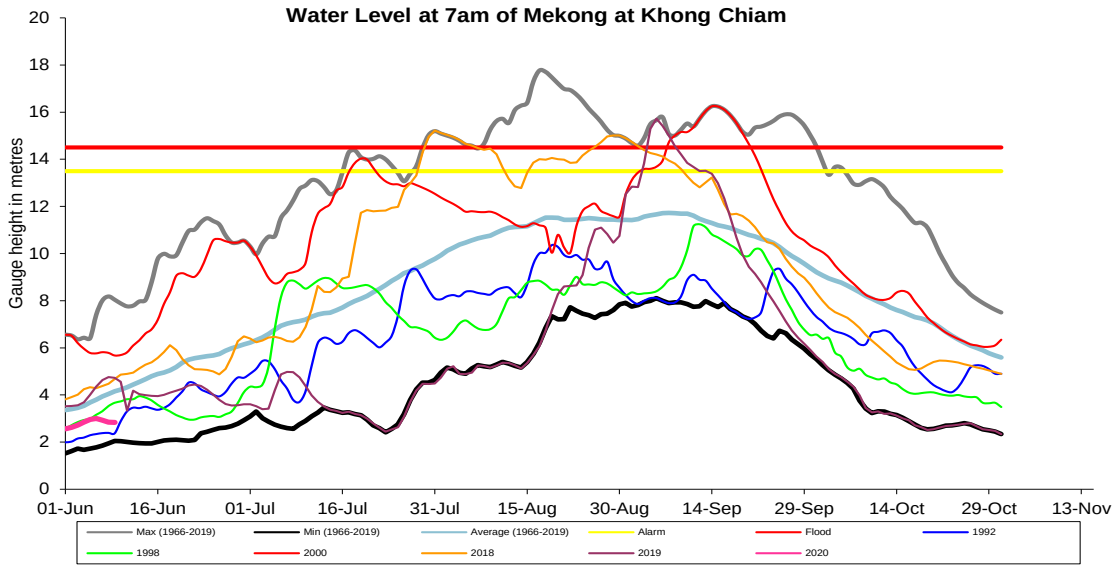
2020


Water Level at 7am of Mekong at Khong Chiam
Gauge height in metres
20
18
16
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1966-2019)
Min (1966-2019)
Average (1966-2019)
Alarm
Flood
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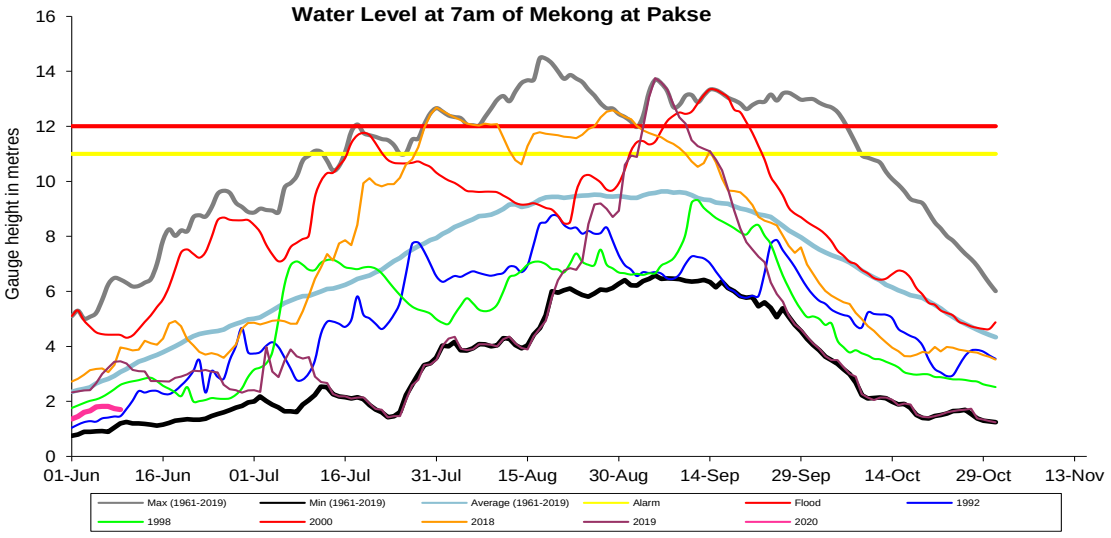
2020


Water Level at 7am of Mekong at Pakse
Gauge height in metres
16
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1961-2019)
Min (1961-2019)
Average (1961-2019)
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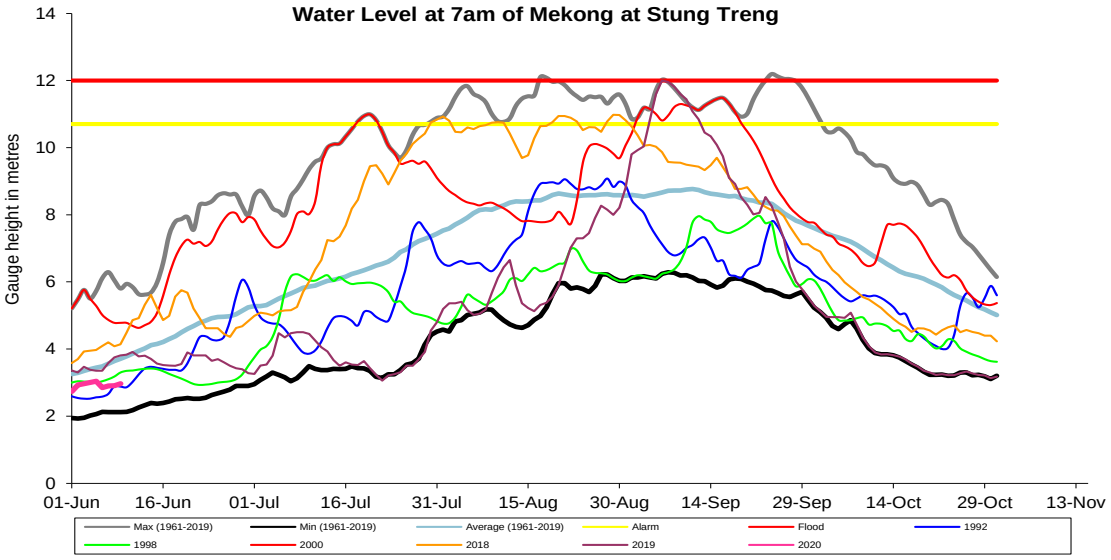
Water Level at 7am of Mekong at Stung Treng
Gauge height in metres
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1961-2019)
Min (1961-2019)
Average (1961-2019)
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Flood
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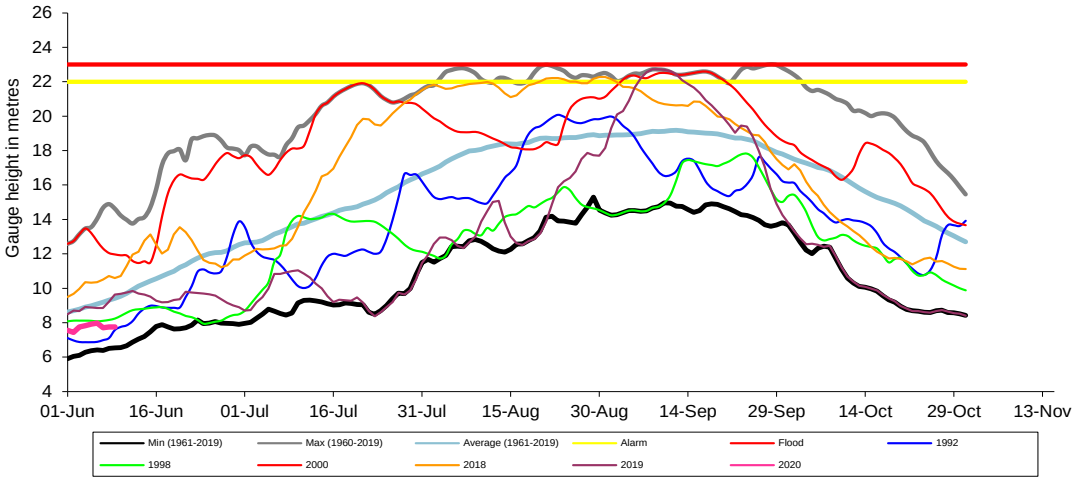
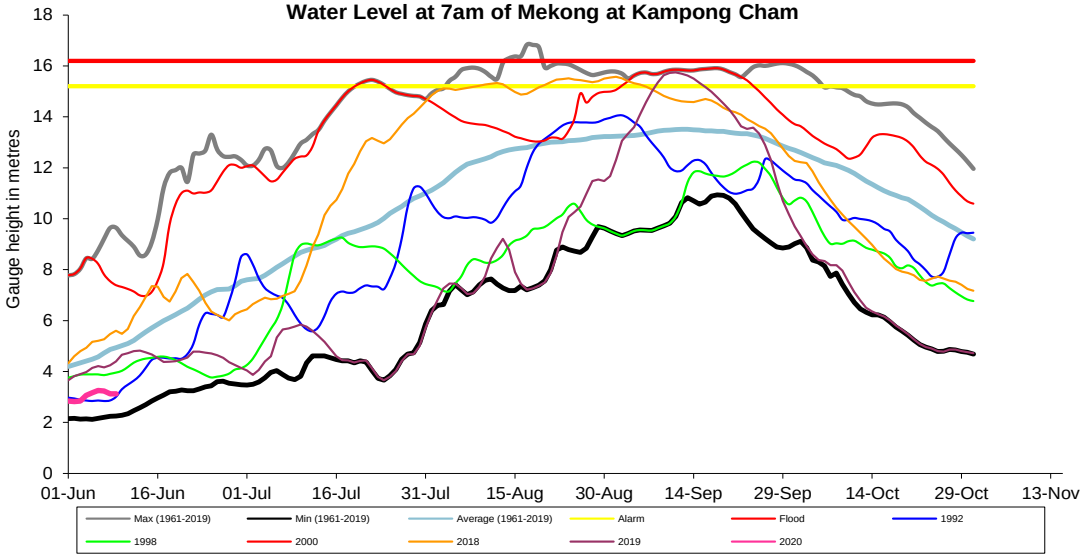
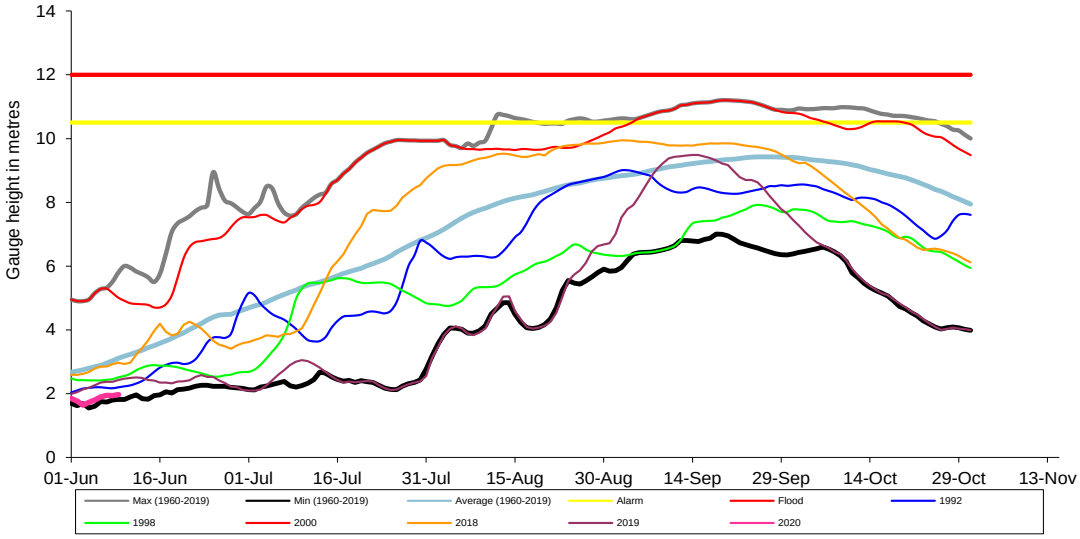
Water Level at 7am of Mekong at Kratie

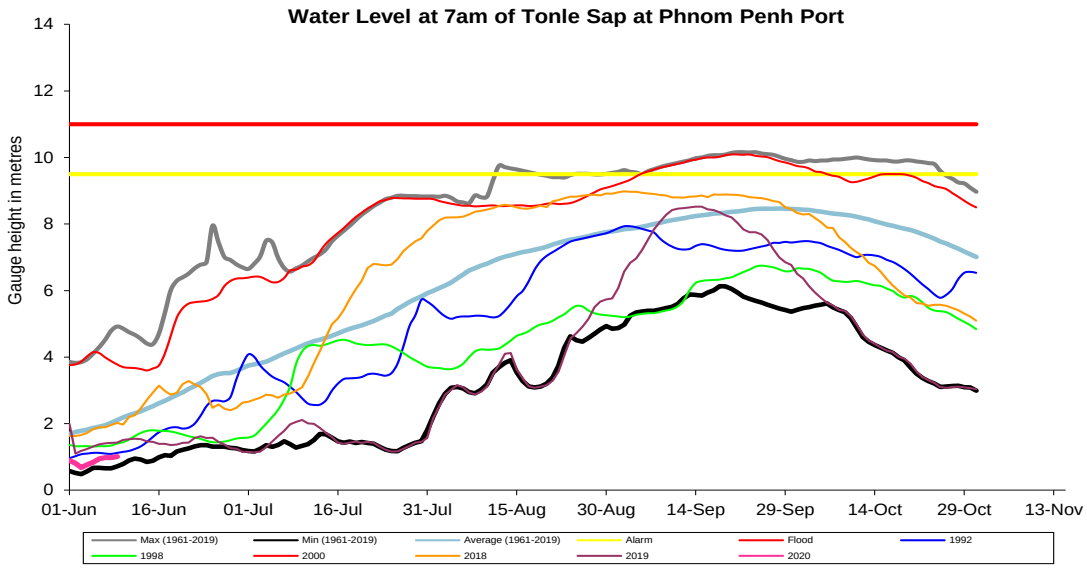


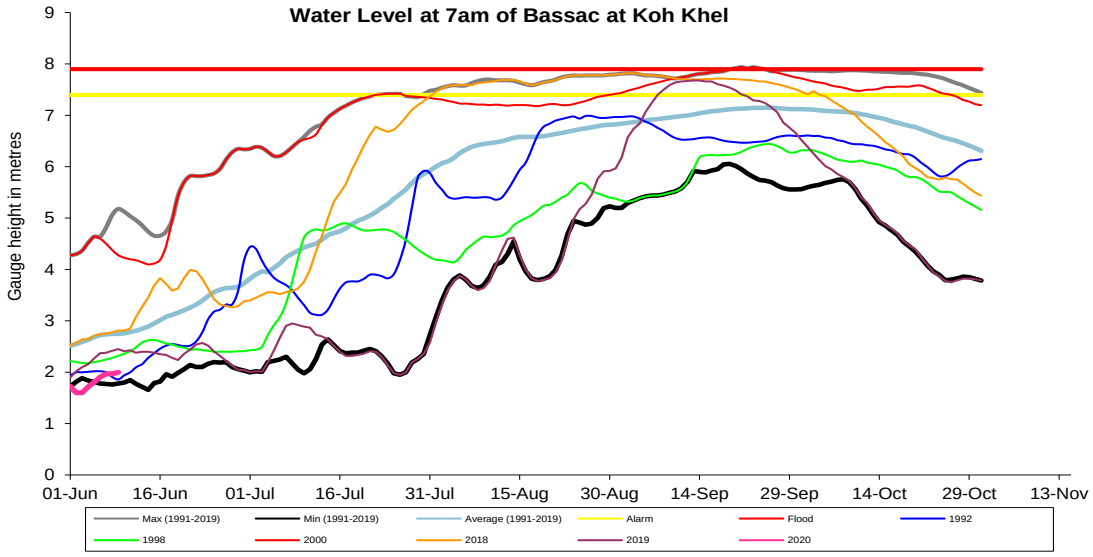
Water Level at 7am of Mekong at Kampong Cham

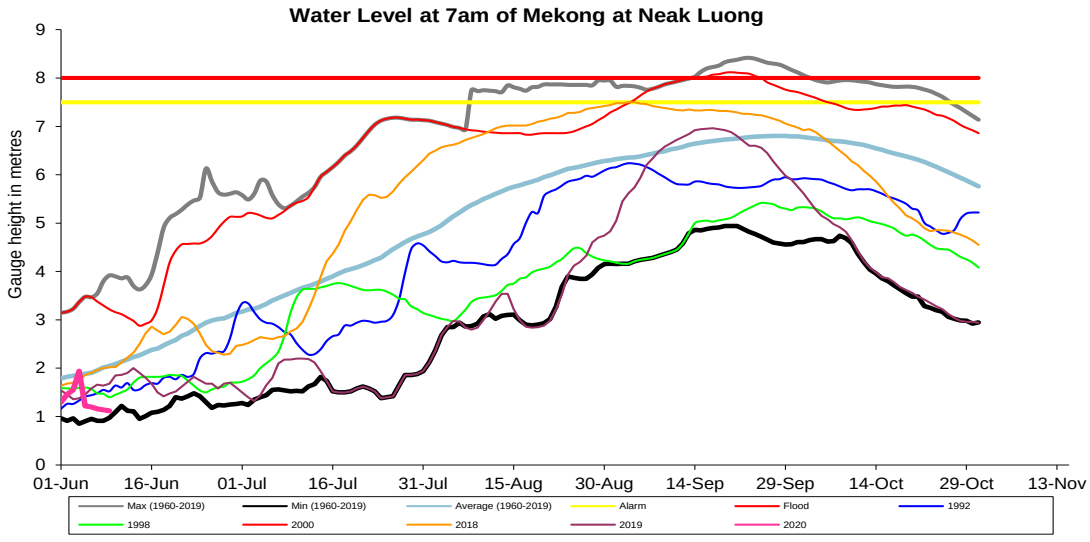


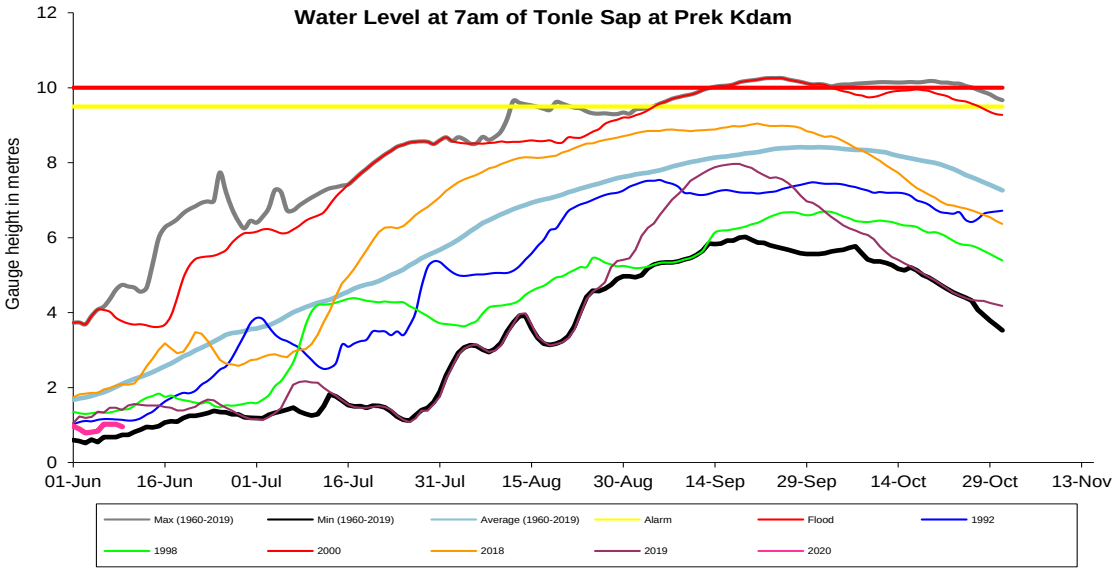
Water Level at 7am of Mekong at Phnom Penh Chaktomuk

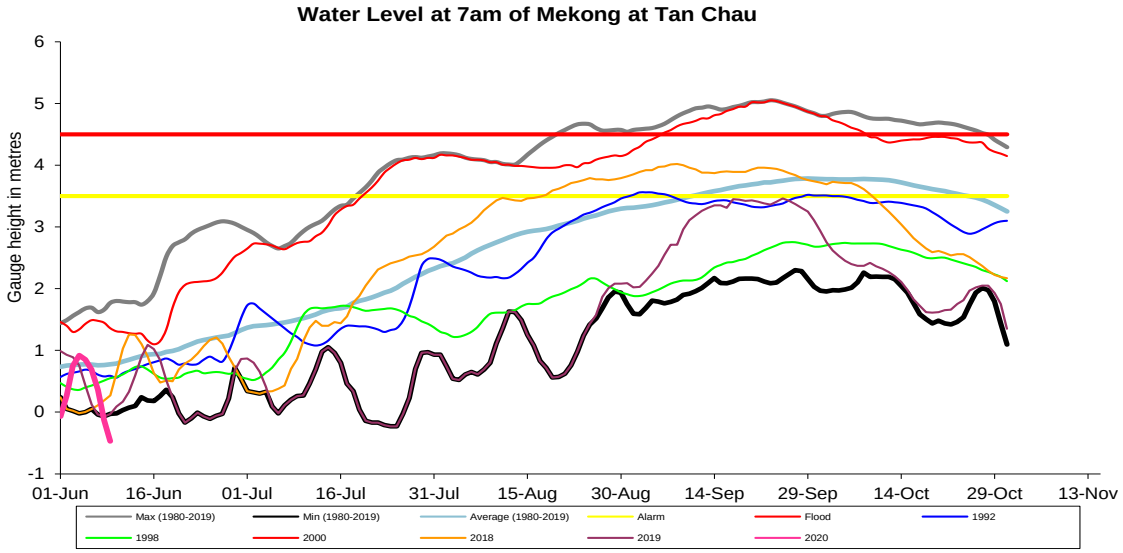


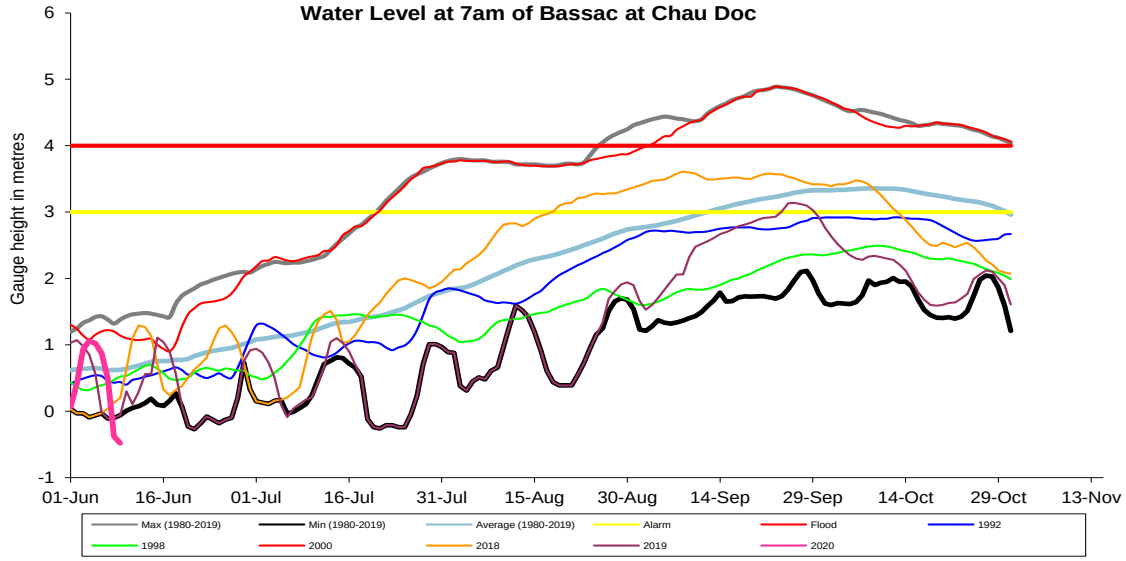

Water Level at 7am of Tonle Sap at Phnom Penh Port
Gauge height in metres
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1961-2019)
Min (1961-2019)
Average (1961-2019)
Alarm
Flood
1992
1998
2000
2018
2019
2020


Water Level at 7am of Bassac at Koh Khel
Gauge height in metres
9
8
7
6
5
4
3
2
1
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1991-2019)
Min (1991-2019)
Average (1991-2019)
Alarm
Flood
1992
1998
2000
2018
2019
2020


Water Level at 7am of Mekong at Neak Luong
Gauge height in metres
9
8
7
6
5
4
3
2
1
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1960-2019)
Min (1960-2019)
Average (1960-2019)
Alarm
Flood
1992
1998
2000
2018
2019
2020


Water Level at 7am of Tonle Sap at Prek Kdam
Gauge height in metres
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1960-2019)
Min (1960-2019)
Average (1960-2019)
Alarm
Flood
1992
1998
2000
2018
2019
2020


Water Level at 7am of Mekong at Tan Chau
Gauge height in metres
6
5
4
3
2
1
0
-1
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1980-2019)
Min (1980-2019)
Average (1980-2019)
Alarm
Flood
1992
1998
2000
2018
2019
2020


Water Level at 7am of Bassac at Chau Doc
Gauge height in metres
6
5
4
3
2
1
0
-1
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Max (1980-2019)
Min (1980-2019)
Average (1980-2019)
Alarm
Flood
1992
1998
2000
2018
2019
2020

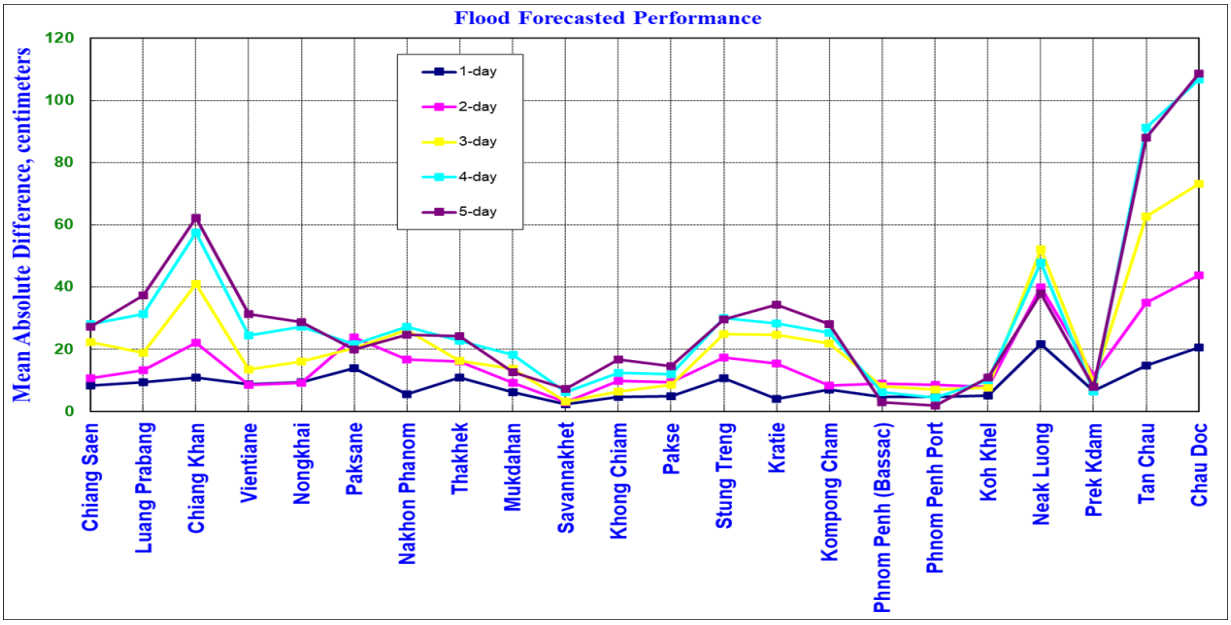
Annex B: Accuracy and Performance

1. Accuracy

"Accuracy" describes the accuracy of the adjusted and published forecast, based on the results of the MRC Mekong Flood Forecasting System, which are then adjusted by the Flood Forecaster in Charge referred to data input and knowledge in response to the output from the model system and hydrological connection from upstream to downstream of the Mekong River Basin. The information presented in a graph below showed the average flood forecasting accuracy at each key station along the Mekong mainstream.

In general, the overall accuracy is fair for 1-day to 5-day forecast lead time at stations in the upper and lower parts of the LMB. However, the accuracies at upper and middle reaches of the LMB stations at Luang Prabang, Chiang Khan and from Kratie to Tan Chau and Chau Doc for 4-day to 5-day forecast were considered large.

The above differences due to three main factors: (1) data input was not sufficient and internal model functionality in forecasting; for which the parameter adjustment in the model were not possible especially at stations in the upper part where it is effluent by hydropower operation and in the lower part of Mekong delta where are affected by tidal; (2) the adjustment by utilizing the practical knowledge and experience of flood forecaster-in-charge; and (3) the forecasted accumulated rainfall from satellite was not well represented.



Forecast Achievement

The flood forecasting achievement indicated the % of days that the forecast at a particular station for a lead-time is successful against a respective benchmark (Table B2).

Table B1: Evaluation performance forecasting (from 01 to 08 June 2020) base on New Benchmark (%).

Unit in %

Lead-time Forecasted	Chiang Saen	Luang Prabang	Chiang Khan	Vientiane	Nongkhai	Paksane	Nakhon Phanom	Thakhek	Mukdahan	Savannakhet	Khong Chiam	Pakse	Stung Treng	Kratie	Kompong Cham	Phnom Penh (Bassac)	Phnom Penh Port	Koh Khel	Neak Luong	Prek Kdam	Tan Chau	Chau Doc	Average
1-day	100.0	100.0	85.7	57.1	57.1	71.4	85.7	42.9	85.7	100.0	85.7	100.0	57.1	85.7	71.4	100.0	100.0	85.7	42.9	85.7	42.9	28.6	***76.0***
2-day	100.0	100.0	83.3	100.0	100.0	66.7	83.3	83.3	100.0	100.0	83.3	100.0	66.7	66.7	100.0	83.3	83.3	100.0	0.0	33.3	0.0	0.0	***74.2***
3-day	100.0	100.0	60.0	80.0	80.0	80.0	40.0	80.0	100.0	100.0	100.0	100.0	40.0	40.0	60.0	80.0	100.0	60.0	0.0	60.0	0.0	0.0	***66.4***
4-day	100.0	100.0	25.0	100.0	100.0	75.0	100.0	75.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	75.0	100.0	50.0	25.0	100.0	0.0	0.0	***78.4***
5-day	100.0	100.0	33.3	100.0	100.0	66.7	100.0	66.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	33.3	100.0	33.3	33.3	***84.8***

Unit in cm

Lead-time Forecasted	Chiang Saen	Luang Prabang	Chiang Khan	Vientiane	Nongkhai	Paksane	Nakhon Phanom	Thakhek	Mukdahan	Savannakhet	Khong Chiam	Pakse	Stung Treng	Kratie	Kompong Cham	Phnom Penh (Bassac)	Phnom Penh Port	Koh Khel	Neak Luong	Prek Kdam	Tan Chau	Chau Doc
1-day	8	9	11	9	9	14	6	11	6	2	5	5	11	4	7	5	5	5	22	7	15	21
2-day	11	13	22	9	9	24	17	16	9	3	10	9	17	16	8	9	9	8	40	12	35	44
3-day	22	19	41	14	16	20	26	16	14	3	6	9	25	25	22	8	7	8	52	9	63	73
4-day	28	31	58	25	27	22	27	23	18	6	13	12	30	28	25	6	5	10	48	7	91	107
5-day	27	37	62	31	29	20	25	24	13	7	17	15	30	34	28	3	2	11	38	8	88	109

2. Performance

Performance is assessed based on the evaluating number of performance indicators, as described in Table B and Figure B1, B2 and B3 for and data received from Member Countries (MCs) and missing data and completed time for flood forecasting:

Table B: Overview of performance indicators for the past 8 days including the current report date

	FF time sent				Arrival time of input data								Missing data (number-mainstream and trib.st.)							
2020	FF completed and sent (time)	Stations without forecast	FF2 completed and sent (time)	Weather data available (time)	NOAA data	China	Cambodia - DHRW	Cambodia - DOM	Lao PDR - DMH	Thailand - DWR	Viet Nam - SRHMC	Viet Nam - HMS	NOAA data/2dataset	China/2	Cambodia - DHRW/15	Cambodia - DOM/34	Lao PDR - DMH/32	Thailand - DWR/13	Viet Nam - SRHMC/6	Viet Nam - HMS/39
week	*10:35*	*00:00*	-	-	*08:15*	*07:10*	*08:06*	*08:00*	*09:00*	*08:22*	*07:33*	*08:26*	*0*	*0*	*14*	*0*	*116*	*0*	*0*	*38*
month	*10:32*	*00:00*	-	-	*08:15*	*07:10*	*08:06*	*08:00*	*09:00*	*08:22*	*07:44*	*08:28*	*0*	*0*	*14*	*0*	*0*	*0*	*0*	*38*

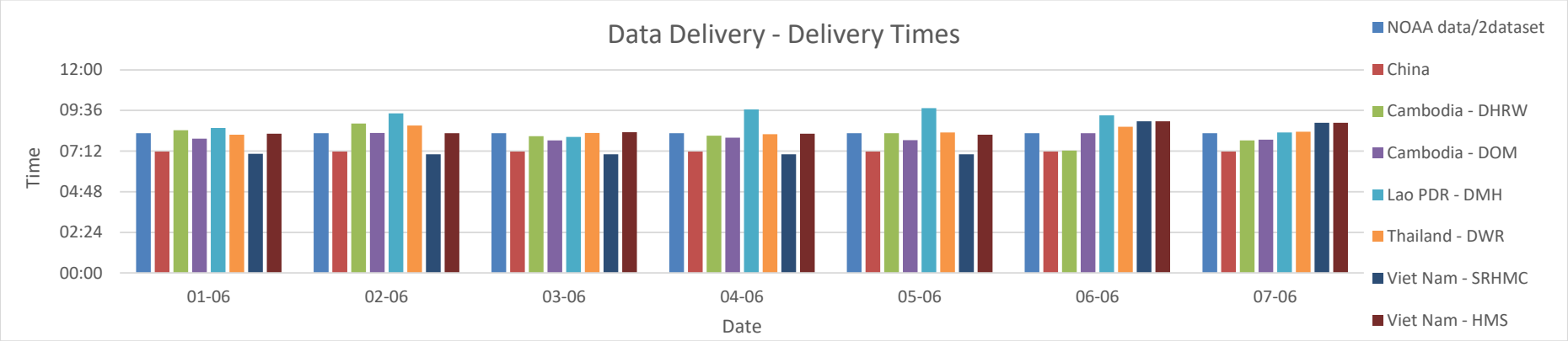


Figure B: Data delivery times for the past 8 days including the current report date

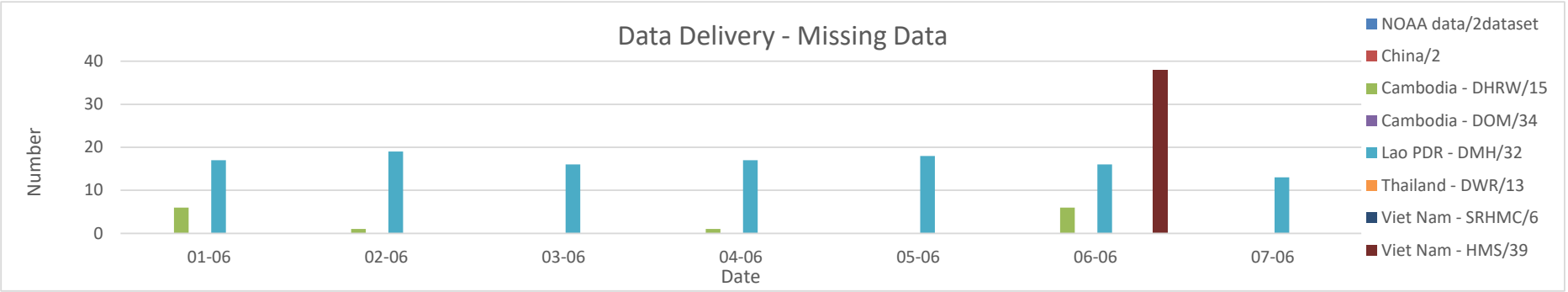


Figure B3: Missing data for the past 7 days including the current report date

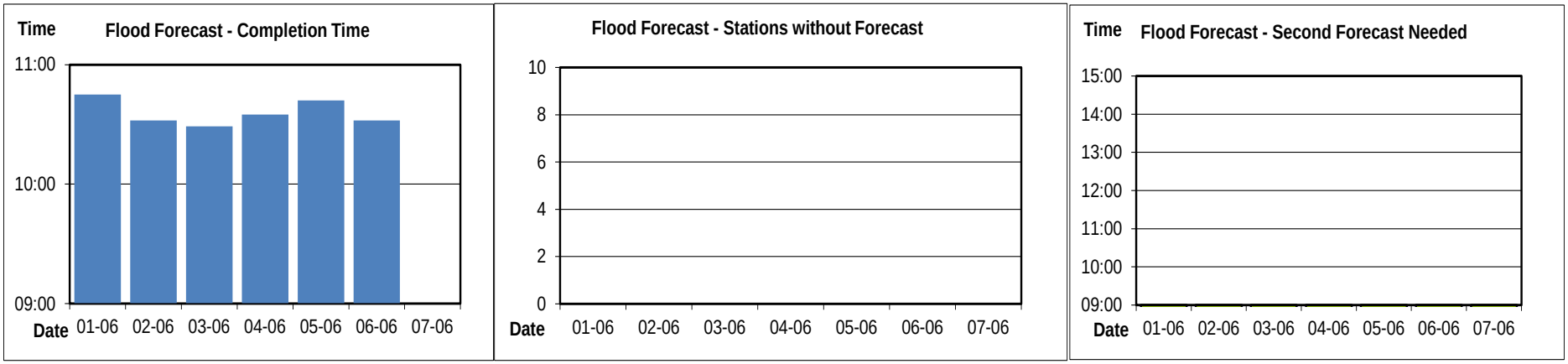


Figure B4: Flood forecast completion time, stations without forecast and second forecast need