Mekong River Commission
Regional Flood Management and Mitigation Centre

Weekly Flood Situation Report for the Mekong River Basin

Prepared at: 12/06/2018, covering the week from the 04th to 11th June 2018

Weather Patterns, General Behaviour of the Mekong River and Flood Situation

General weather patterns

During the week of 04th – 11th June 2018 the first weather bulletins were issued by the Thai Meteorological Department (TMD). The observed weather maps of the 5th – 10th June, 2018 from TMD are presented in the **Figures 1 & 2.**

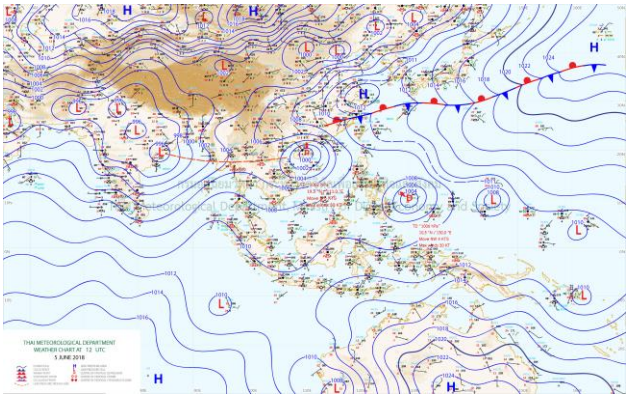


Figure 1: Weather map for 05th June 2018

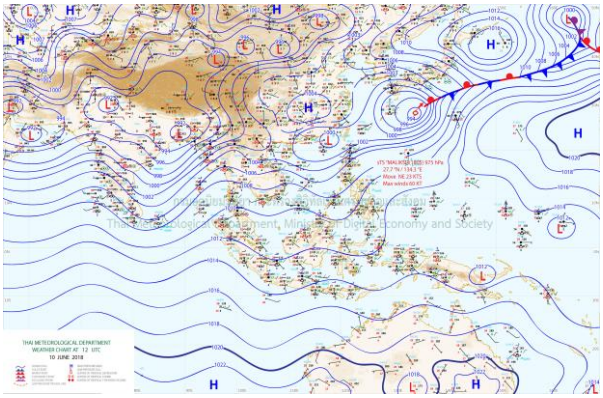


Figure 2: Weather map for 10th June 2018

Moderate South-West (SW) Monsoon

The moderate Southwest monsoon prevailed over Andaman Sea, the Gulf of Thailand, Thailand and Indochina Peninsular at the surface, which revealed some sporadic rainfall covered the Lower Mekong Basin-LMB (See Figure 1& 2).

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

No TD, TS or TY was presented in LMB during last week.

Other weather phenomena that affect the discharge

The Inter Tropical Convergence Zone (ITCZ) laid across the middle of Myanmar, the upper North of Thailand, the North of Lao PDR and Viet Nam while the moderate Southwest monsoon prevailed over Andaman Sea, the Gulf of Thailand, Thailand and Indochina Peninsular at the surface. The trough laid across Myanmar, Thailand and Indochina Peninsular at the height of 1.5km (850 hPa)

Over weather situation

During last week, the weather was influenced by ITCZ, trough of low pressure and moderate Southwest monsoon. However, on the mainstream of LMB not much heavy rain occurred, except the total accumulated rainfall at Paksane was 102.9 mm; Figure 3 showed the rainfall distribution in weekly covered the LMB, and Table A1 and A2 provided the observed water level and rainfall at key stations from 04th to 11th June 2018.

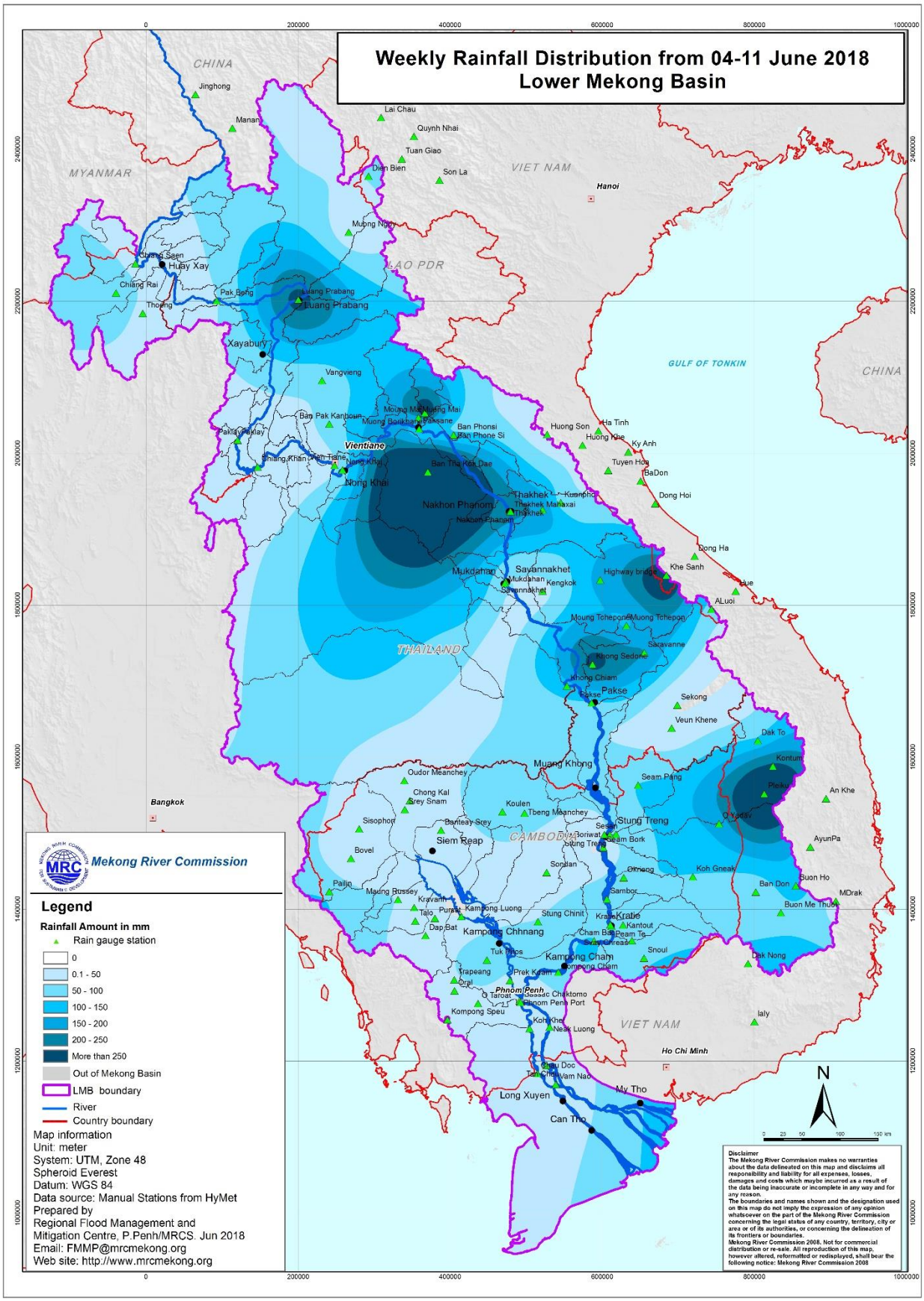


Figure 3: Weekly Rainfall Distribution over the LMB from 4th – 11th June 2018

General behaviour of the Mekong River

During the last week, the water levels at stations from upper to middle part of LMB has been decreasing due to inflow operation upstream part, while at downstream part has been slightly rising.

For stations from Chiang Saen and Luang Prabang

Compared to the long-term average (LTA), weekly water levels from 04th to 11th June from Chiang Sean station were fluctuated just below the LTA, while at Luang Prabang station water level were raised at the end of week.

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

Compared to the long-term average (LTA), water levels at these stations were increasing above the LTAs.

For stations from Nakon Phanom/Thakhet to Pakse

Compared to the long-term average (LTA), water levels at Chaing Khan station were about LTA, while at Vientiane to Pakse stations were slightly decrease below their LTAs.

For stations from Stung Treng to Kompong Cham

Compared to the long-term average (LTA), water levels at these stations were increasing above their LTAs.

For stations from Phnom Penh to Koh Khel/Neak Luong

Compared to the long-term average (LTA), water levels at these stations were slightly fluctuated and rising slightly above their LTAs.

Tan Chau and Chau Doc

Compared to the long term average (LTA), water levels at these two tidal stations were fluctuated around their LTAs.

Note: For areas between forecast stations, please refer to the nearest forecast station.

Flood Situation

- Flood stage or alarm stage:

No alarm stage (where the forecast is expected to reach flood level within three days) was reported anywhere on the mainstream of the Mekong River during the last week. Water levels were still significantly below flood levels (as defined by the national agency) at all forecast stations.

- Damage or victims:

No damage or loss of life due to river flooding was recorded anywhere along the Mekong River during the last week.

For more details see the following annexes:

- tables and graphs for water level and rainfall for the last week in Annex A
- a graph for accuracy in Annex B
- a table of forecast achievement in Annex B
- tables and graphs for performance in Annex B
- the water level graphs showing the observed water level for the season in Annex C

Annex A: Graphs and Tables

Table A1: observed water levels

Unit in m

2018	Jinghong	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
04/06/2018	537.32	3.92	6.77	7.62	4.05	4.80	6.39	3.97	5.14	3.60	3.92	4.25	3.13	3.95	10.35	4.93	2.68	1.72	2.64	1.74	1.86	-0.02	-0.09
05/06/2018	537.30	3.87	6.98	7.31	3.94	4.68	6.38	4.03	5.18	3.62	3.91	4.33	3.18	3.97	10.32	5.17	2.79	1.83	2.71	1.86	1.86	0.00	-0.06
06/06/2018	536.69	3.86	7.19	6.98	3.55	4.52	6.46	4.07	5.21	3.67	3.99	4.29	3.20	4.09	10.36	5.21	2.85	1.89	2.74	1.90	1.95	0.05	-0.03
07/06/2018	536.10	3.98	7.50	7.20	3.26	4.08	6.10	4.03	5.22	3.70	4.02	4.38	3.06	4.20	10.51	5.27	2.85	1.89	2.75	1.96	1.99	0.11	0.04
08/06/2018	535.28	3.71	7.62	7.50	3.40	4.08	5.80	4.03	5.21	3.73	4.04	4.48	3.32	4.08	10.71	5.47	2.92	1.96	2.78	2.00	2.05	0.19	0.13
09/06/2018	535.27	3.30	7.72	7.62	3.74	4.42	5.63	4.11	5.28	3.81	4.12	4.68	3.96	4.14	10.59	5.60	2.97	2.02	2.81	2.02	2.09	0.27	0.20
10/06/2018	535.97	2.95	7.60	7.58	3.84	4.62	6.20	4.11	5.29	3.83	4.16	4.86	3.92	4.49	10.72	5.48	2.93	1.97	2.81	2.02	2.08	0.63	0.63
11/06/2018	535.27	2.70	7.17	7.64	3.83	4.62	6.39	4.31	5.45	3.87	4.22	4.90	3.85	4.86	11.30	5.67	2.97	2.20	2.85	2.12	2.11	1.03	1.10

Table A2: observed rainfall

Unit in mm

2018	Jinghong	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
04/06/2018	0	0	nr	0	nr	0	1.2	0	nr	0	nr	39	15.2	6.5	3.2	1	nr	-	31	nr	5.3	2.2	6.1
05/06/2018	3	0	63.2	0	4.6	3	2	51.8	42.5	0	2	0	nr	nr	0.5	2	1	-	nr	nr	nr	0	nr
06/06/2018	5.5	0.5	80.2	0	0.8	8.5	34.2	3.5	3.1	70	nr	1.6	3	nr	22.6	16.8	nr	-	nr	nr	12.3	0	-
07/06/2018	0.5	14.5	7.5	0	12.4	42.2	19.1	9.2	9.7	0	nr	11.5	18	46.5	nr	15.4	nr	-	nr	1.6	16.2	3.8	3
08/06/2018	0.5	0	2.8	0	0.6	8	2.4	16.2	17	0.2	1.5	31.6	52.7	7	22.8	1.2	0.6	-	2.8	0.2	nr	18.1	5
09/06/2018	1	7	103.6	8	nr	0	14.4	117.1	127.6	0	nr	15.8	nr	2	13.2	17.6	11.4	-	2.1	2.7	nr	3.2	5
10/06/2018	15.5	14.6	3.8	1.8	nr	0	12.8	1.1	0.9	4.5	3	4.8	nr	20	4.4	27.8	nr	-	0	0.4	nr	3.5	4
11/06/2018	0	0	1.2	6	26.5	5.5	18	16.9	14.6	14.5	5	30.4	43.4	nr	nr	nr	nr	-	nr	nr	nr	0.5	nr

Figure A1: Observed water level and rainfall for Jinghong, Chiang Saen, and Luang Prabang

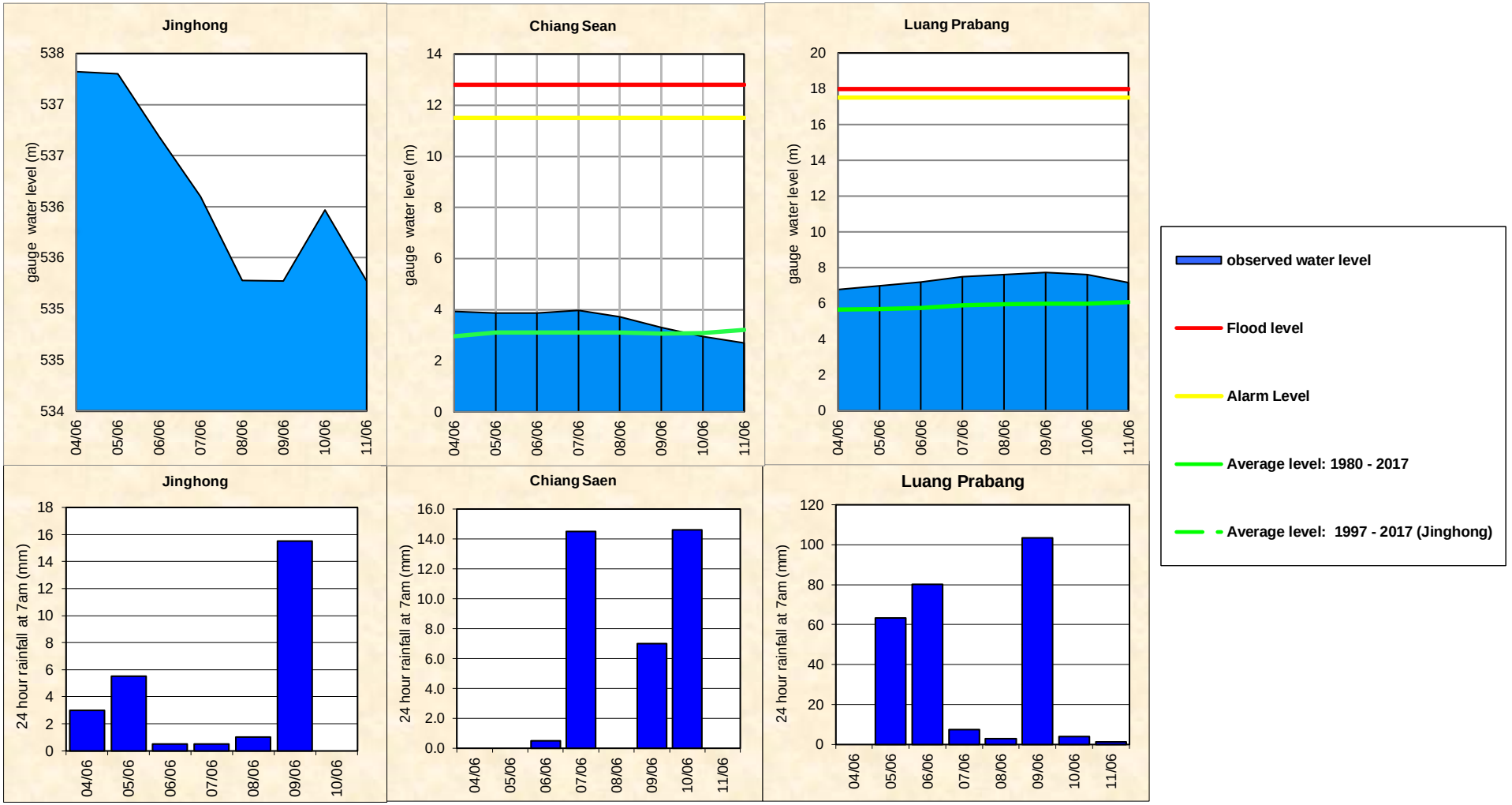


Figure A2: Observed water level and rainfall for Chiang Khan, Vientiane, Nongkhai, and Paksane

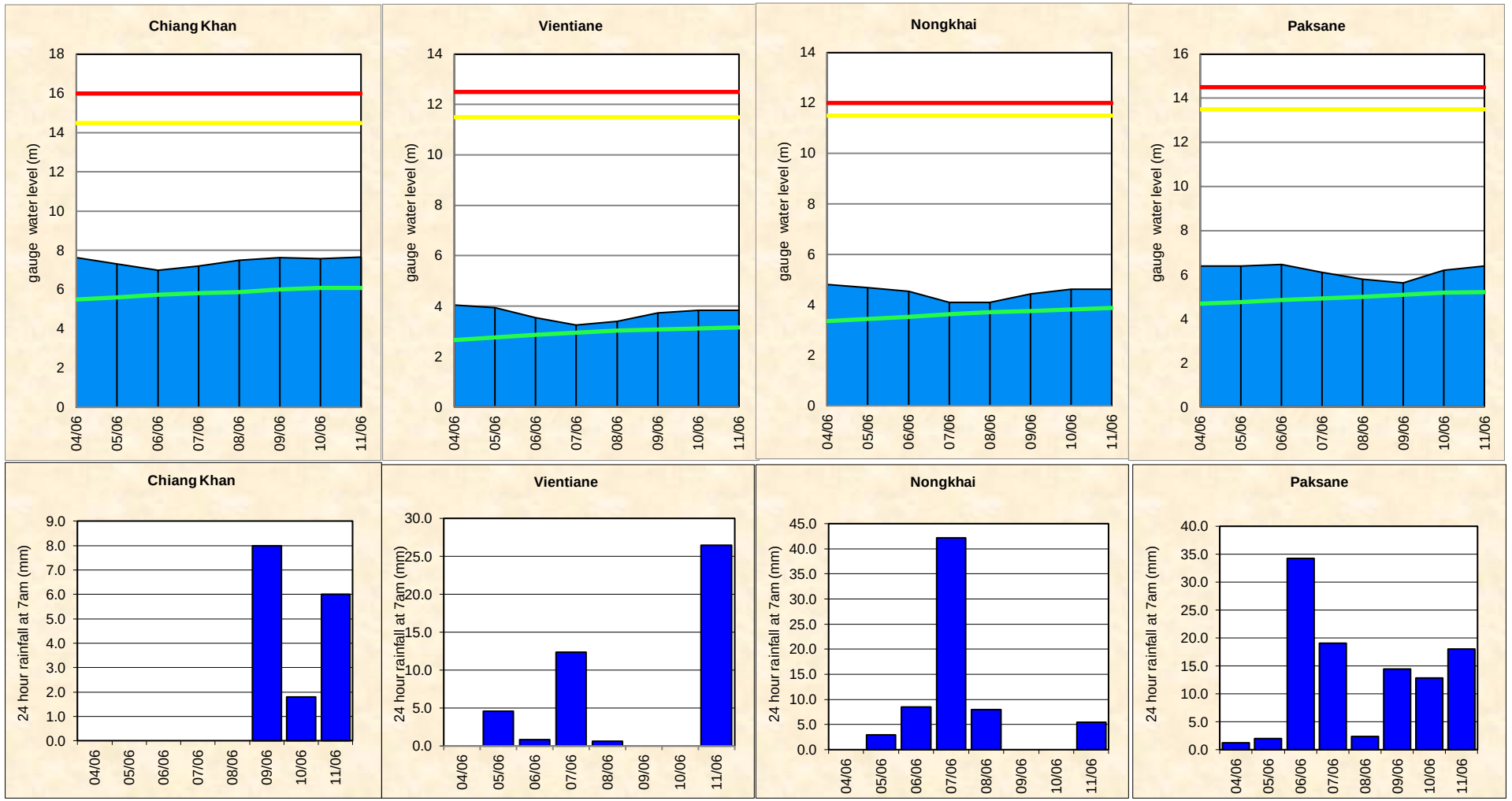


Figure A3: Observed water level and rainfall for Nakhon Phanom, Thakhek, Mukdahan and Savannakhet

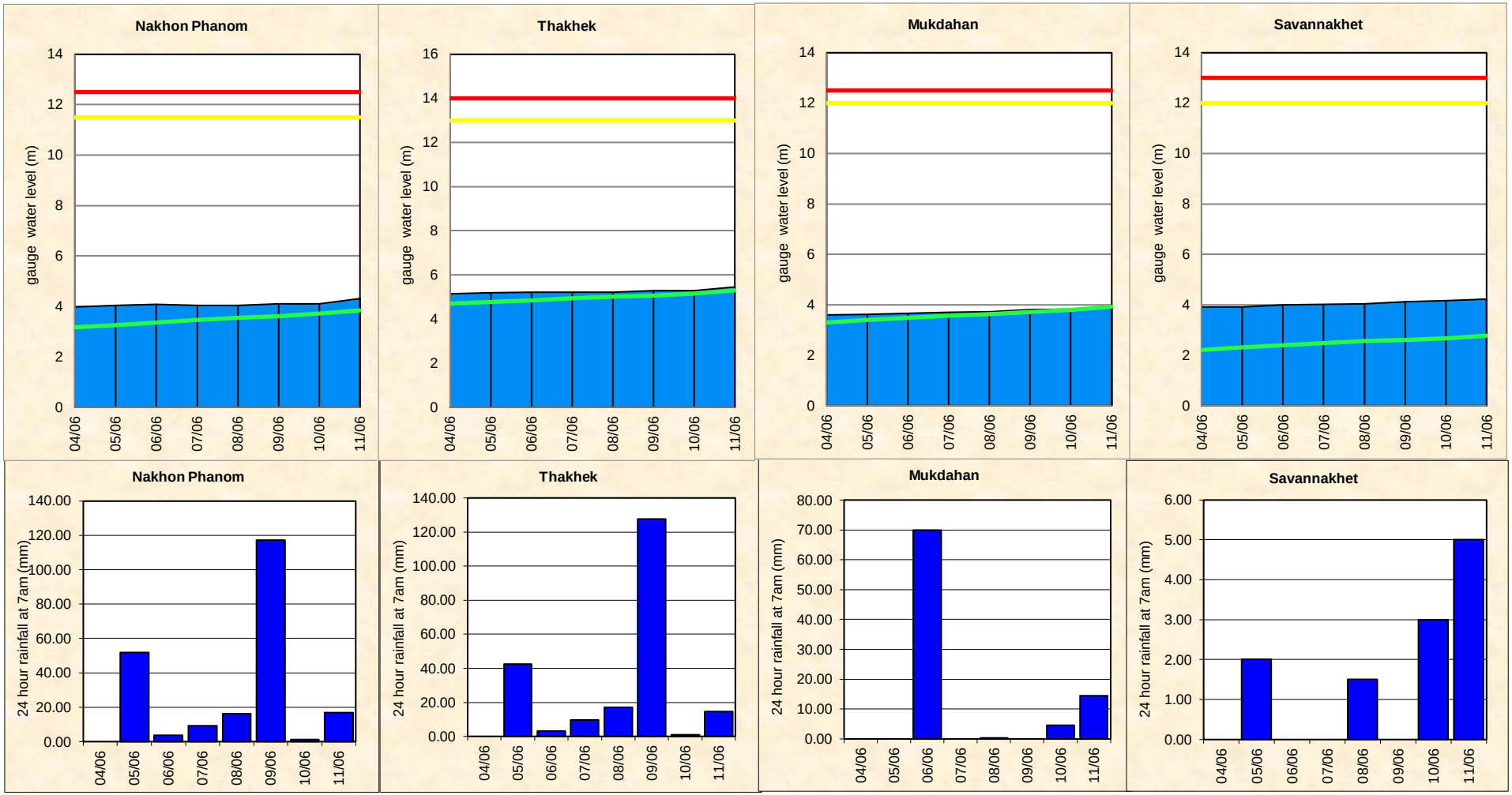


Figure A4: Observed water level and rainfall for Khong Chiam, Pakse, Stung Treng, and Kratie

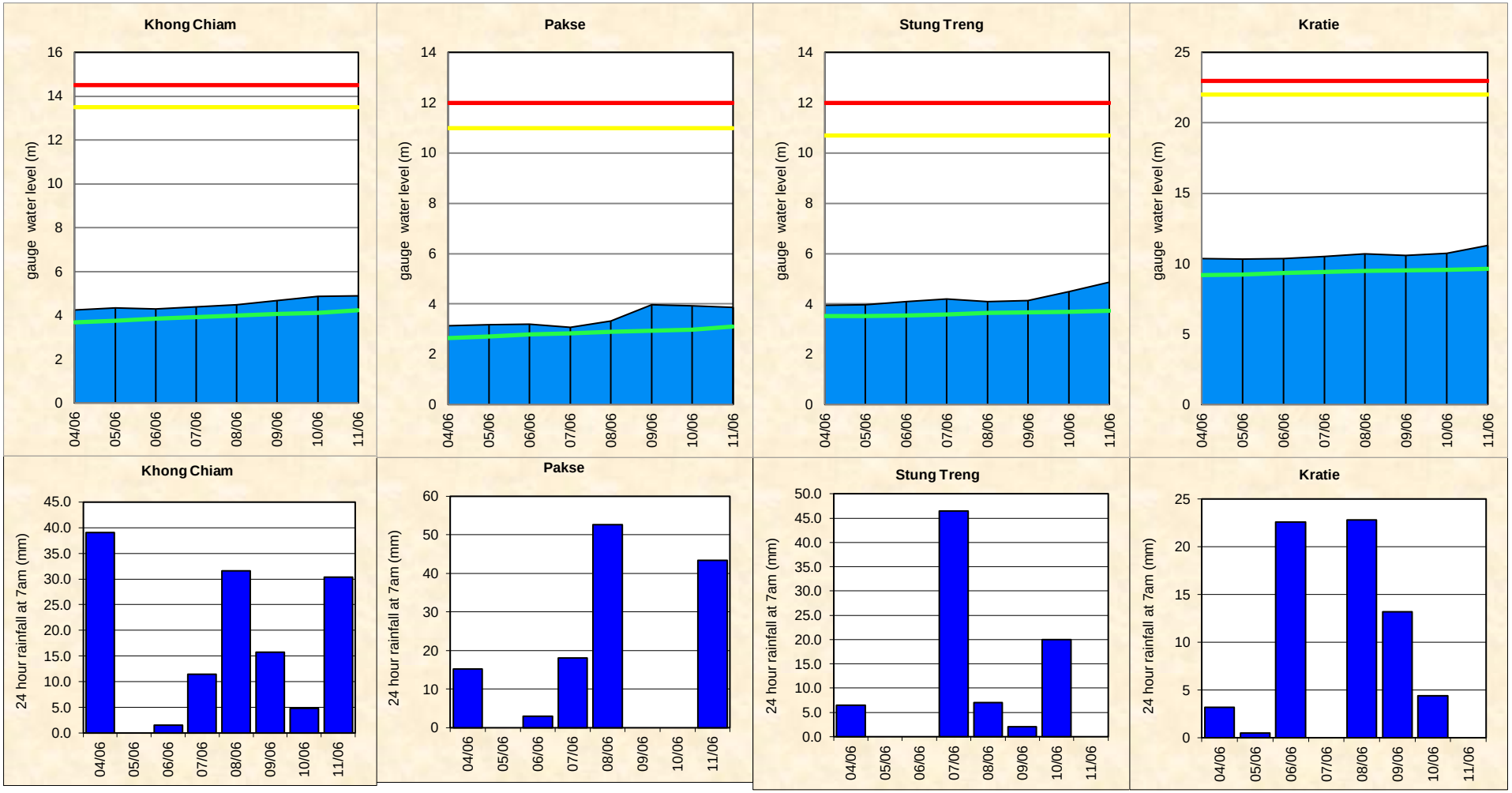


Figure A5: Water level and rainfall for Kompong Cham, Phnom Penh (Bassac and Port), and Koh Khel

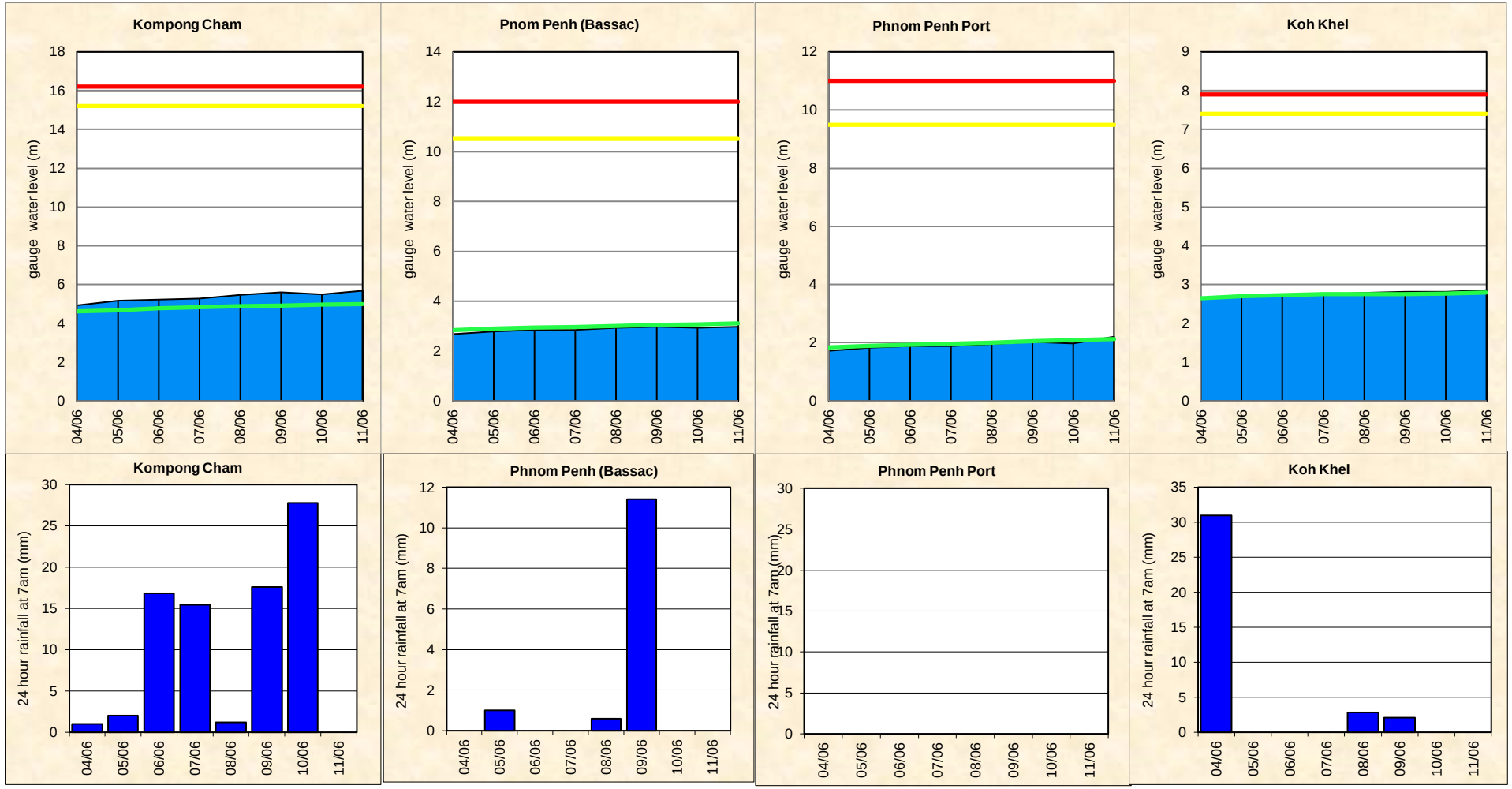
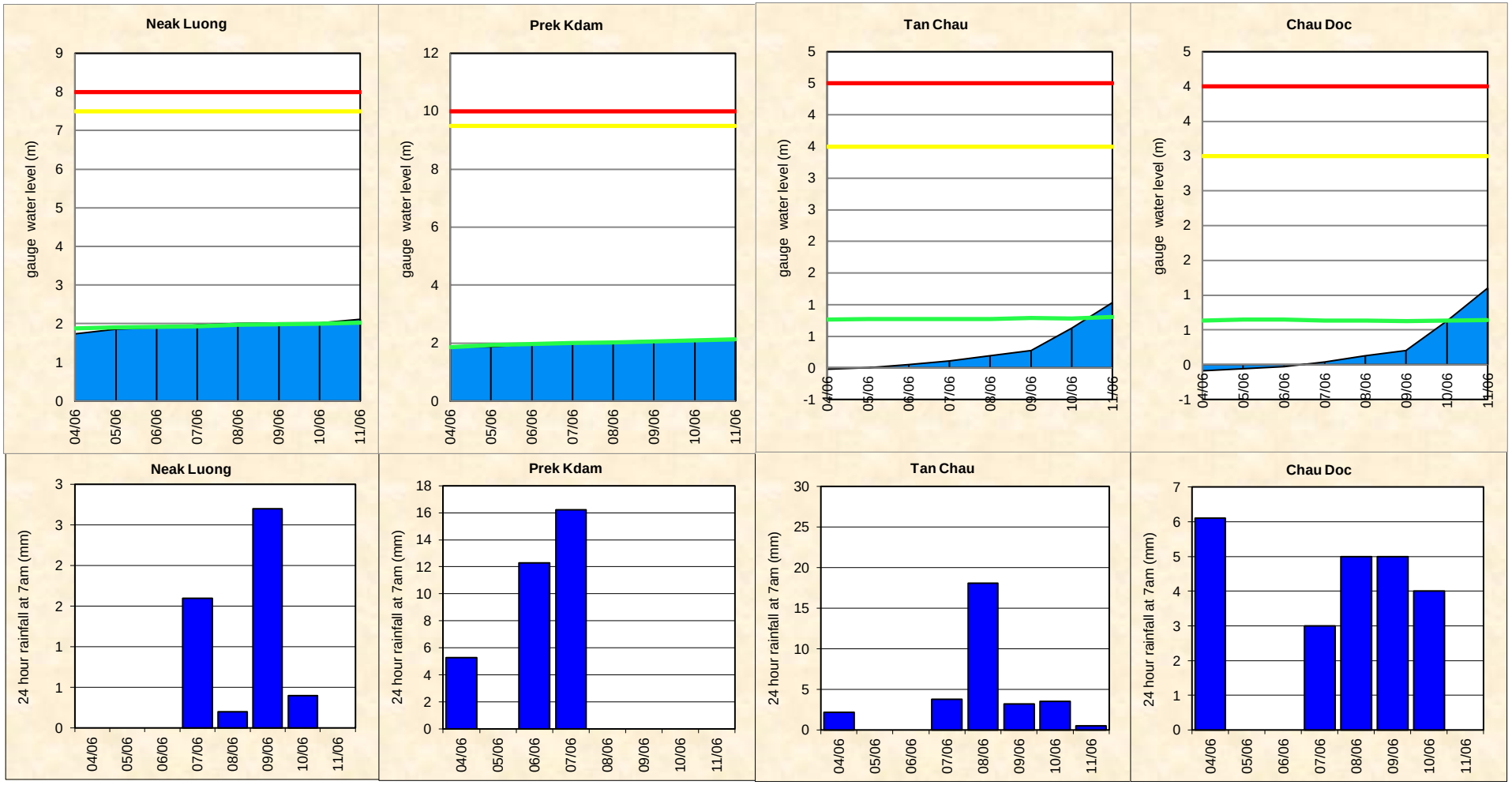


Figure A6: Water level and rainfall for Neak Luong, Prek Kdam, Tan Chau and Chau Doc



Annex B: Accuracy and performance

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 taking into consideration known biases in input data and his/her knowledge of the response of the model system and the hydrology of the Mekong River Basin. The information is presented as a graph below, showing the average flood forecasting accuracy 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 as Chaing Sean, Paksan, Mukdahan and Kratie stations for 4-day to 5-day forecast were considered large.

The above differences due to three main factors: (1) internal model functionality in forecasting; for which the parameter adjustment in the model is not possible especially at stations in the upper part and in the 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 was not well represented.

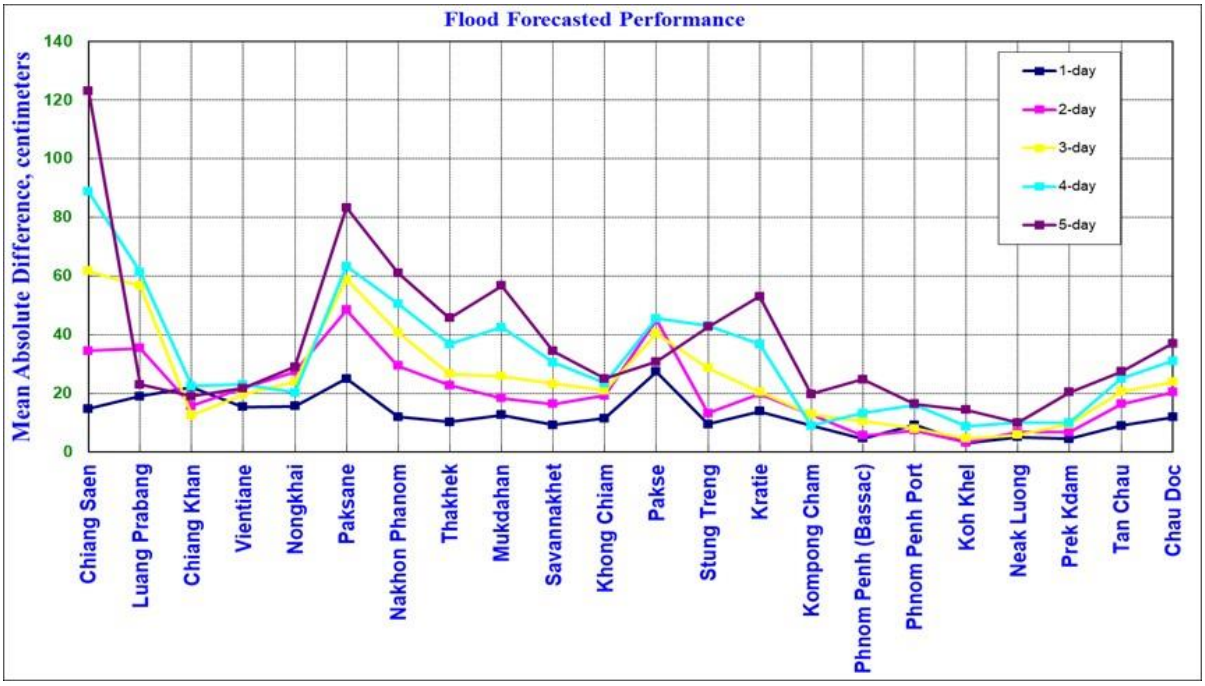


Figure B1: Average flood forecast accuracy along the Mekong mainstream

Forecast Achievement

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

Table B1: Achievement of daily forecast against benchmarks

Unit in %

Lead time Forecast	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	57.1	85.7	71.4	85.7	85.7	57.1	71.4	100.0	85.7	85.7	100.0	57.1	85.7	85.7	100.0	85.7	57.1	100.0	85.7	71.4	71.4	57.1	***79.2***
2-day	50.0	83.3	100.0	83.3	66.7	33.3	83.3	100.0	100.0	83.3	100.0	66.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	66.7	66.7	***85.6***
3-day	40.0	60.0	100.0	80.0	80.0	60.0	100.0	100.0	100.0	100.0	100.0	80.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	60.0	60.0	***87.3***
4-day	25.0	100.0	100.0	100.0	100.0	50.0	100.0	100.0	100.0	100.0	100.0	75.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	50.0	50.0	***88.6***
5-day	0.0	100.0	100.0	100.0	100.0	33.3	100.0	100.0	100.0	100.0	100.0	100.0	66.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	33.3	33.3	***84.8***

Unit in cm

Lead time Forecast	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	85.7	71.4	71.4	28.6	42.9	0.0	57.1	42.9	42.9	85.7	28.6	14.3	71.4	42.9	57.1	100.0	71.4	100.0	100.0	85.7	71.4	71.4	***61.0***
2-day	66.7	83.3	100.0	66.7	66.7	16.7	33.3	66.7	66.7	66.7	83.3	0.0	100.0	66.7	100.0	100.0	83.3	100.0	100.0	83.3	66.7	66.7	***72.0***
3-day	40.0	40.0	100.0	80.0	60.0	20.0	20.0	60.0	20.0	40.0	60.0	40.0	40.0	60.0	80.0	40.0	80.0	80.0	80.0	80.0	60.0	60.0	***56.4***
4-day	50.0	75.0	75.0	100.0	100.0	50.0	25.0	75.0	75.0	75.0	75.0	75.0	50.0	50.0	100.0	50.0	100.0	75.0	100.0	100.0	50.0	50.0	***71.6***
5-day	0.0	100.0	100.0	66.7	100.0	33.3	33.3	33.3	33.3	66.7	66.7	66.7	66.7	33.3	100.0	33.3	100.0	66.7	100.0	66.7	33.3	33.3	***60.6***

Table B2: Benchmarks of success (Indicator of accuracy in mean absolute error)

Unit in %

Lead time Forecast	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	25	25	25	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
2-day	50	50	50	25	25	25	25	25	25	25	25	25	25	25	25	10	10	10	10	10	10	10
3-day	50	50	50	25	25	25	25	25	25	25	25	25	25	25	25	10	10	10	10	10	10	10
4-day	75	75	50	50	50	50	50	50	50	50	50	50	50	50	50	10	25	10	25	25	10	10
5-day	75	75	50	50	50	50	50	50	50	50	50	50	50	50	50	25	25	25	25	25	25	25

Unit in cm

Lead time Forecast	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	22	31	22	23	23	23	20	20	20	20	24	22	18	28	20	9	9	6	7	9	6	6
2-day	39	55	41	42	43	42	38	39	39	38	46	41	33	52	38	18	18	12	14	17	11	11
3-day	51	76	57	59	59	58	54	54	55	54	65	58	46	73	54	26	26	18	20	24	16	16
4-day	60	93	70	72	74	72	68	68	70	68	82	73	57	92	69	34	34	22	26	31	20	21
5-day	66	107	81	84	86	85	81	81	83	80	98	87	67	109	82	41	41	27	31	38	24	24

Note: *An indication of the accuracy given in the Table B2 is based on the performance of the forecast made in 2008 from the new flood forecasting system and the configuration for the 2009 flood season and is published on the website of MRC (http://ffw.mrcmekong.org/accuracy.htm).*

A new set of performance indicators that is established by combining international standards and the specific circumstances in the Mekong River Basin, is applied officially for the flood season of 2011 onward.

Performance

Performance is assessed by evaluating a number of performance indicators, see table and graphs below:

Table B3: Overview of performance indicators for the past 5 days including the current report date

Week is the week for which this report is made; *Month* is actually the last 30 days (or less if the flood season has just begun); *Season* is the current flood season up to the date of this report.

2018	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/34	Thailand - DWR/13	Viet Nam - SRHMC/6	Viet Nam - HMS/39
week	*10:15*	*00:00*	-	-	*08:15*	*07:10*	*07:30*	*07:41*	*08:12*	*08:07*	*07:00*	*08:14*	*0*	*0*	*0*	*0*	*115*	*0*	*0*	*0*
month	*10:16*	*00:00*	-	-	*08:14*	*07:10*	*07:29*	*07:51*	*08:18*	*08:05*	*07:01*	*08:15*	*0*	*0*	*0*	*0*	*180*	*0*	*0*	*0*

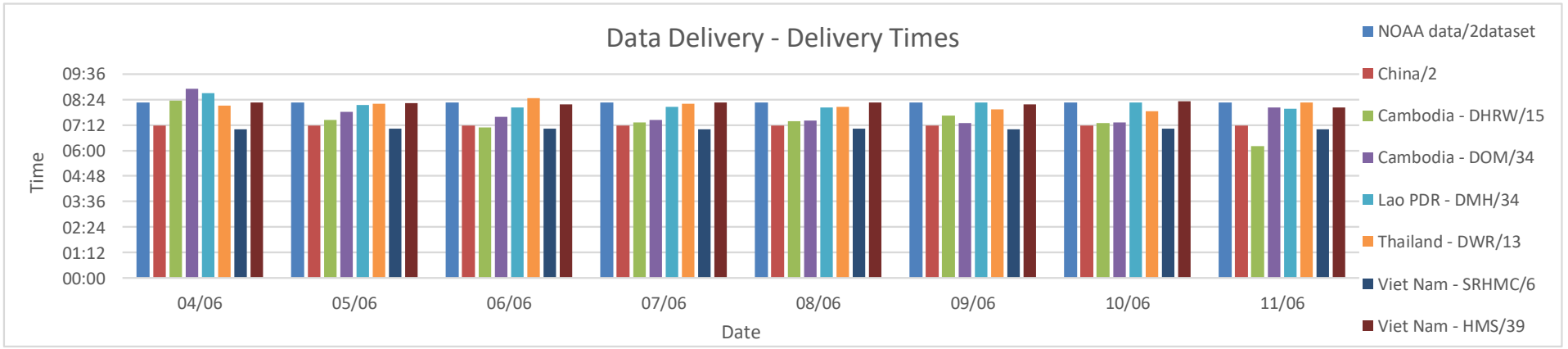


Figure B2: Data delivery times for the past 8 days including the current report date

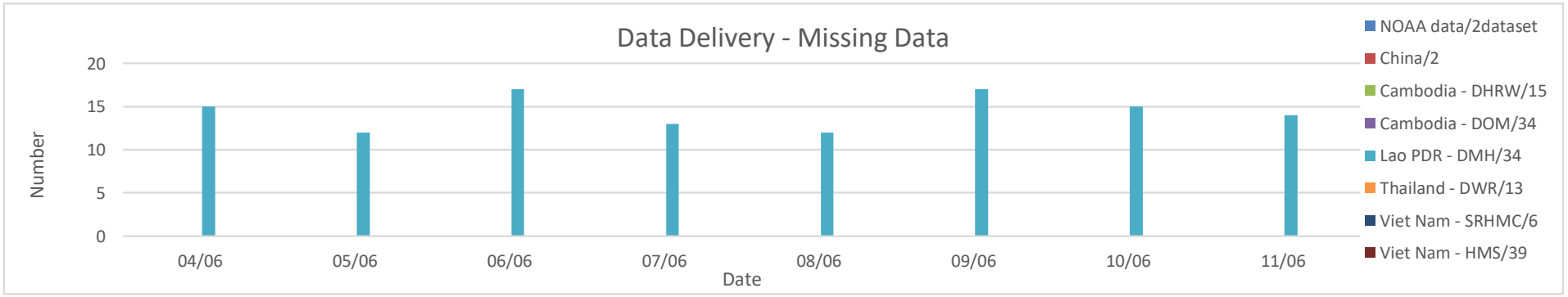


Figure B3: Missing data for the past 8 days including the current report date

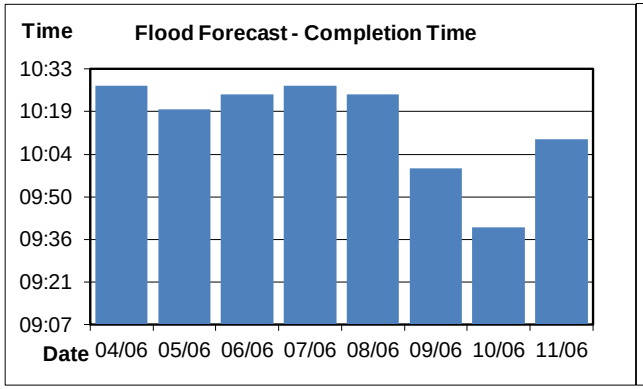


Figure B4: Flood forecast completion time

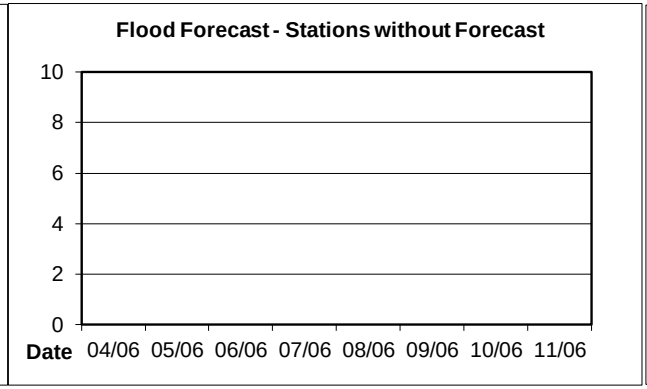


Figure B5: Flood forecast stations without forecast

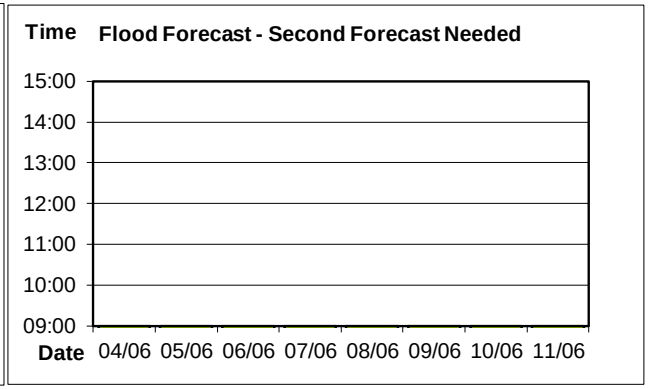


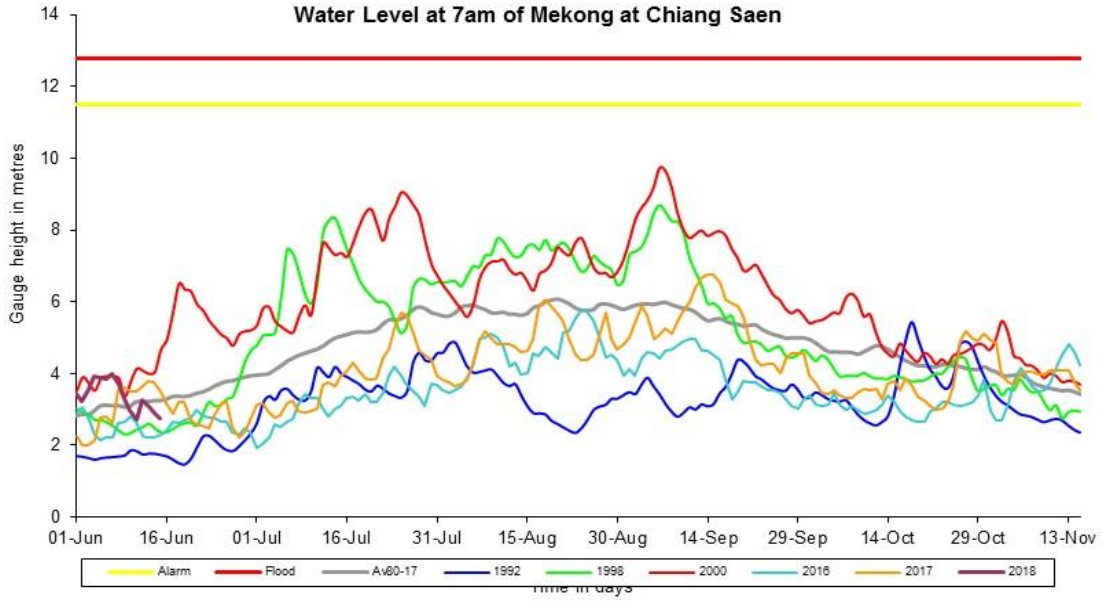
Figure B6: Second forecast needed

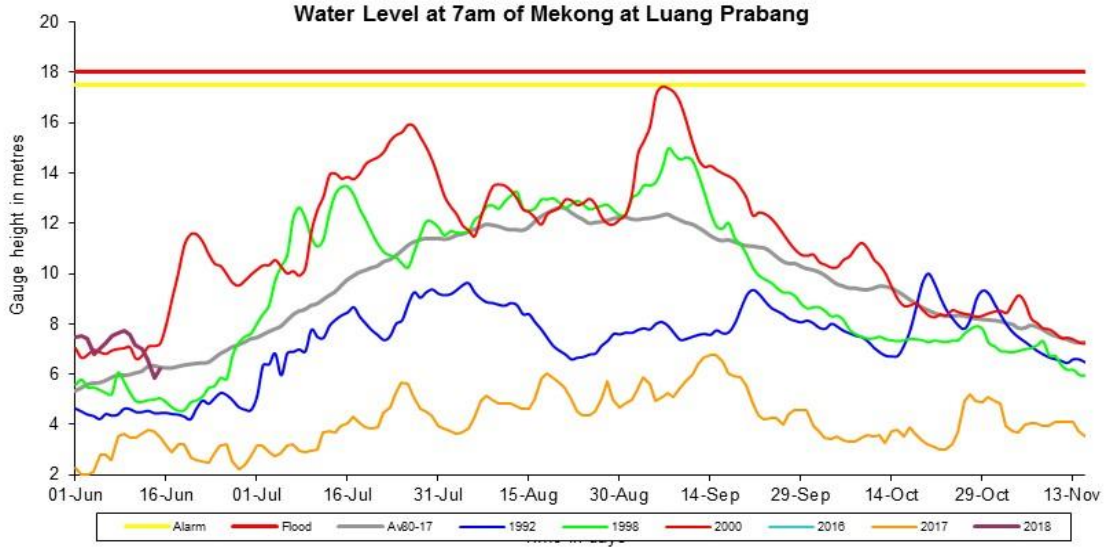
Annex C: Season Water Level Graphs

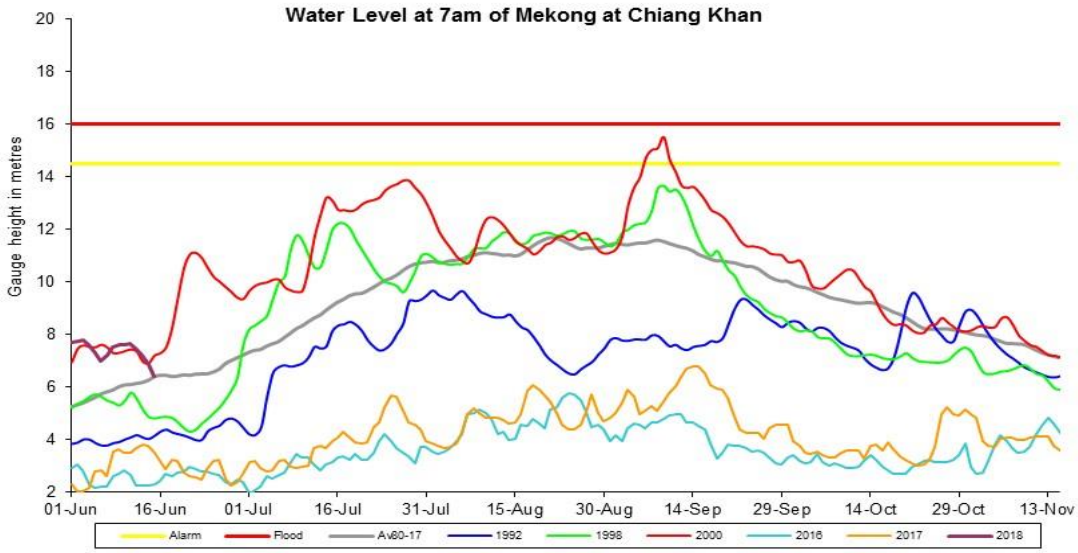
This Annex has the water level graphs of the report date. These graphs are distributed daily by email together with the Flood Bulletins.

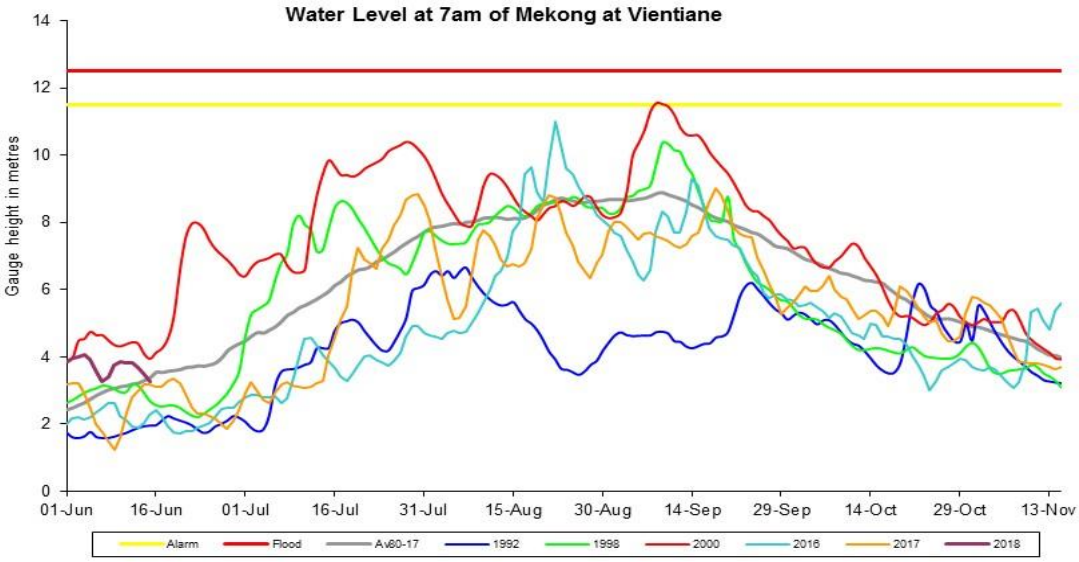
HYDROGRAPHS OF THE MEKONG AT MAINSTREAM STATIONS

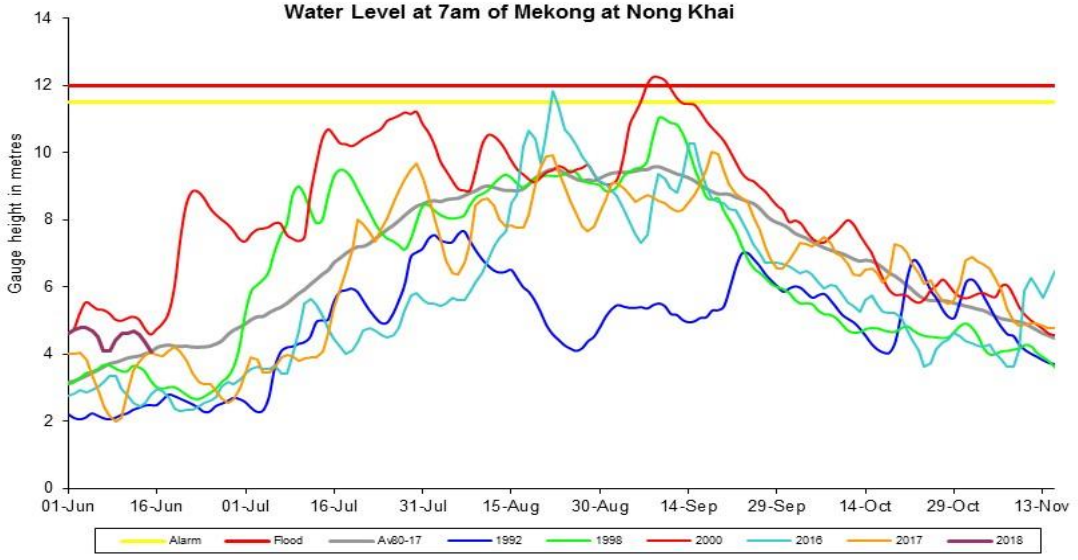
IN FLOOD SEASON FROM 1 JUNE TO 31 OCTOBER

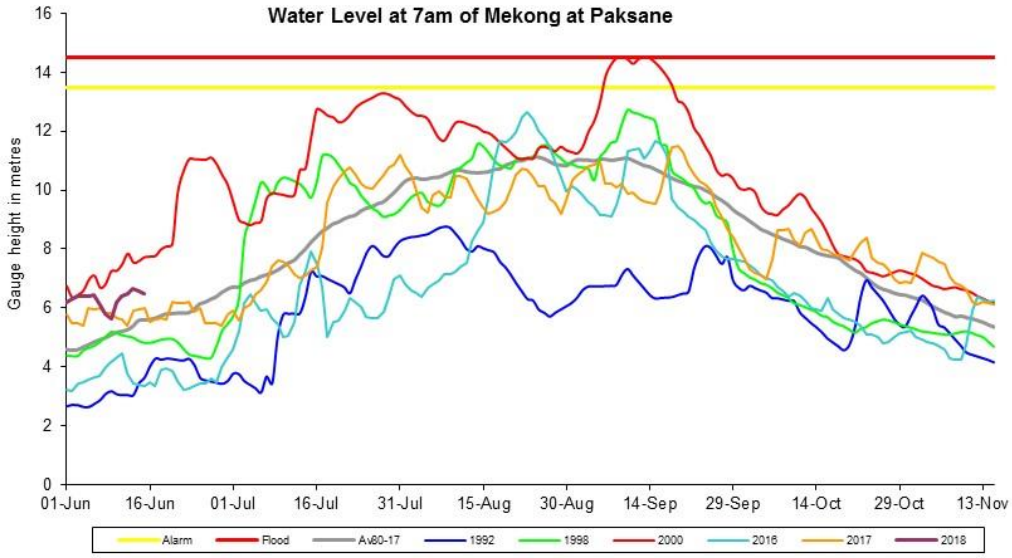


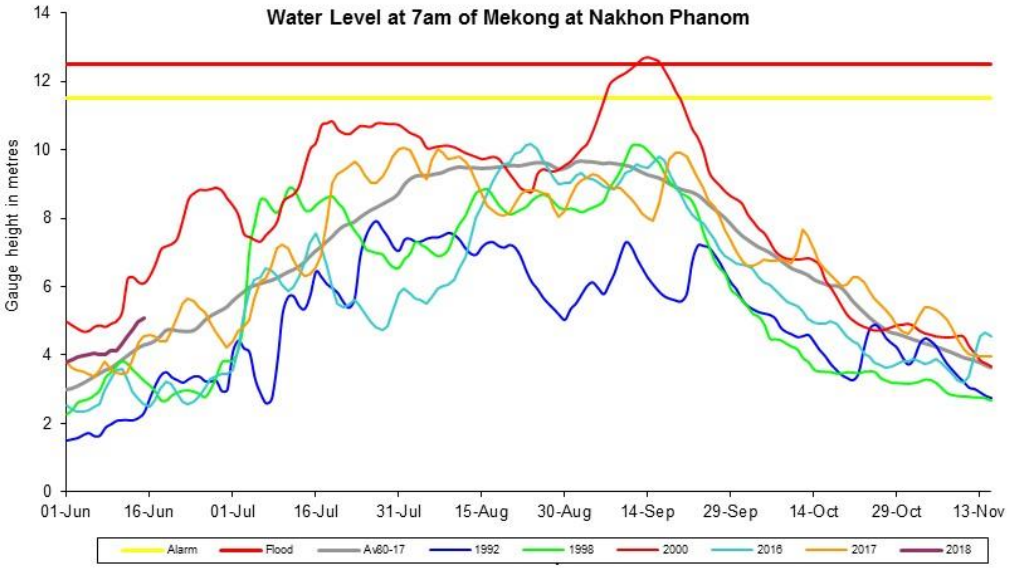


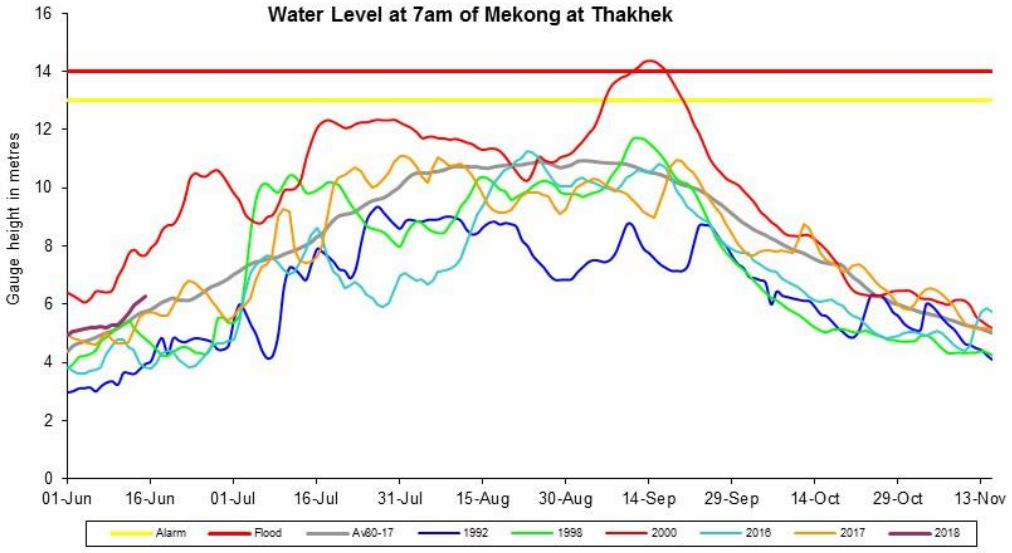

Water Level at 7am of Mekong at Chiang Khan
Gauge height in metres
20
18
16
14
12
10
8
6
4
2
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av60-17
1992
1998
2000
2016
2017
2018

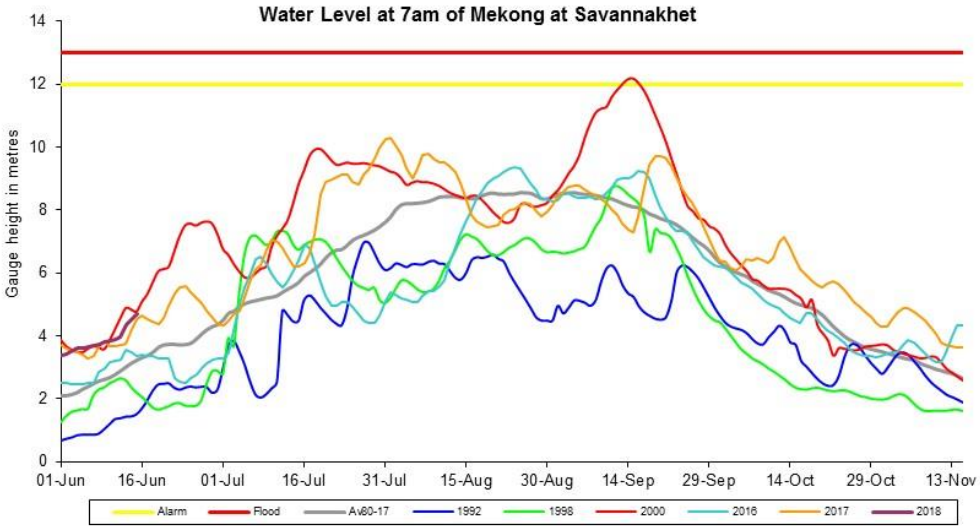

Water Level at 7am of Mekong at Vientiane
Gauge height in metres
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av60-17
1992
1998
2000
2016
2017
2018

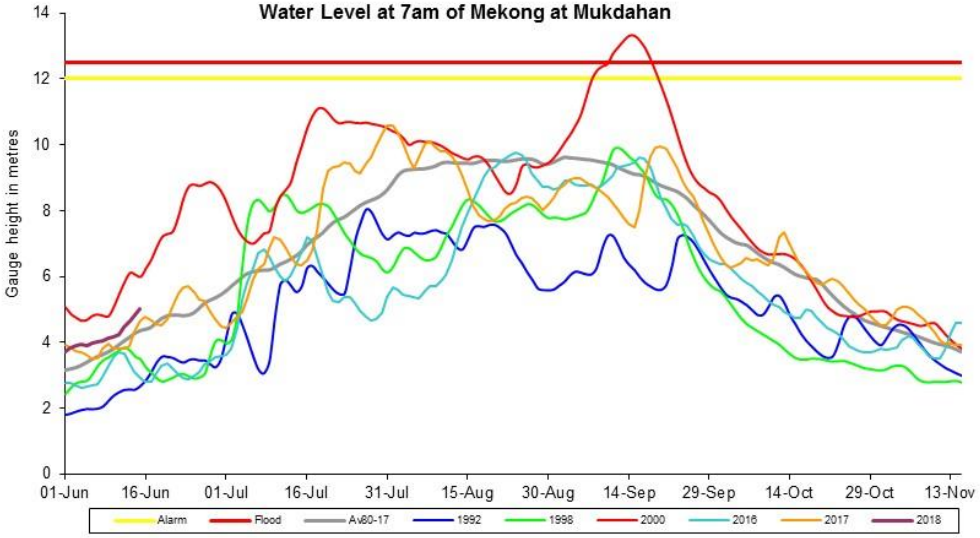

Water Level at 7am of Mekong at Nong Khai
Gauge height in metres
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av60-17
1992
1998
2000
2016
2017
2018

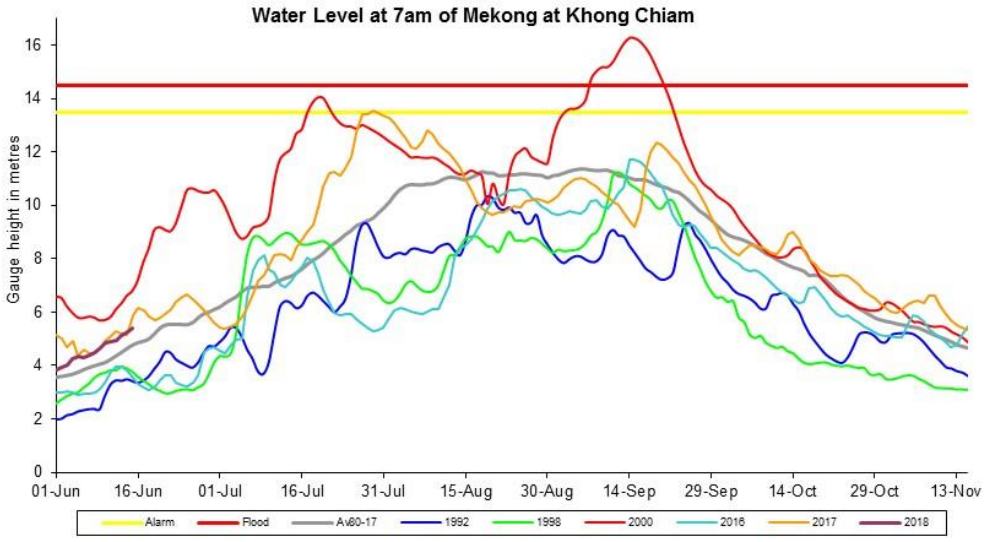

Water Level at 7am of Mekong at Paksane
Gauge height in metres
16
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av60-17
1992
1998
2000
2016
2017
2018

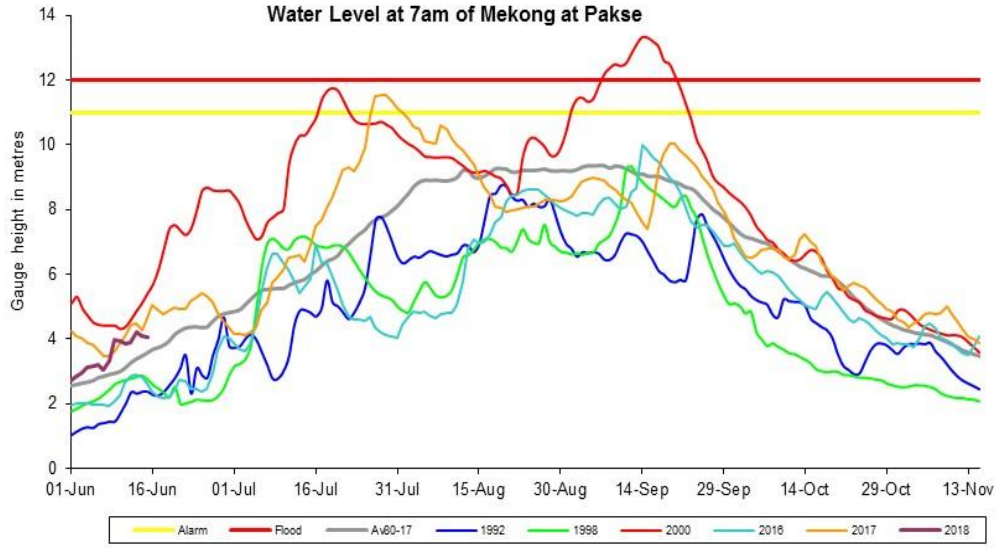

Water Level at 7am of Mekong at Nakhon Phanom
Gauge height in metres
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av60-17
1992
1998
2000
2016
2017
2018

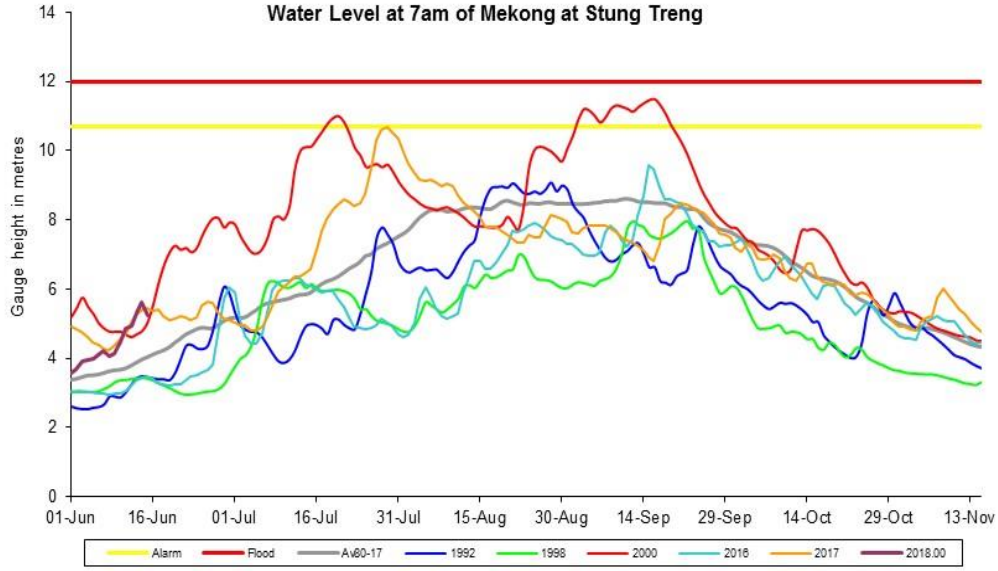

Water Level at 7am of Mekong at Thakhek
Gauge height in metres
16
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av60-17
1992
1998
2000
2016
2017
2018

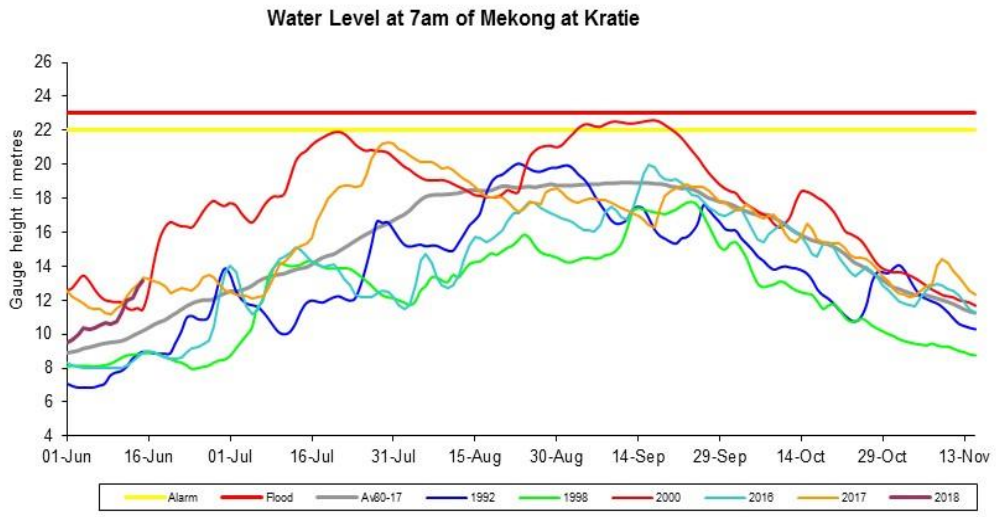

Water Level at 7am of Mekong at Savannakhet
Gauge height in metres
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av60-17
1992
1998
2000
2016
2017
2018

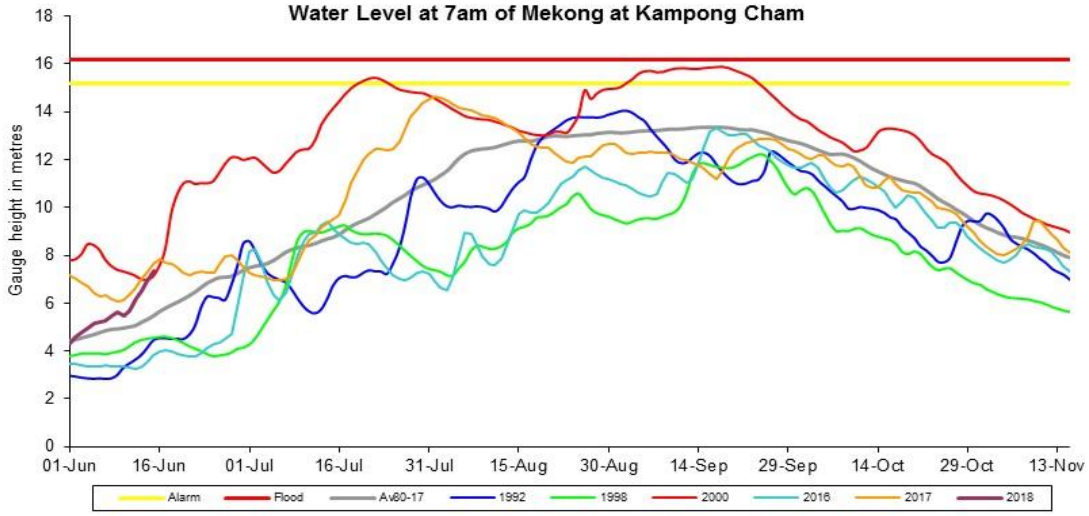

Water Level at 7am of Mekong at Mukdahan
Gauge height in metres
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av60-17
1992
1998
2000
2016
2017
2018

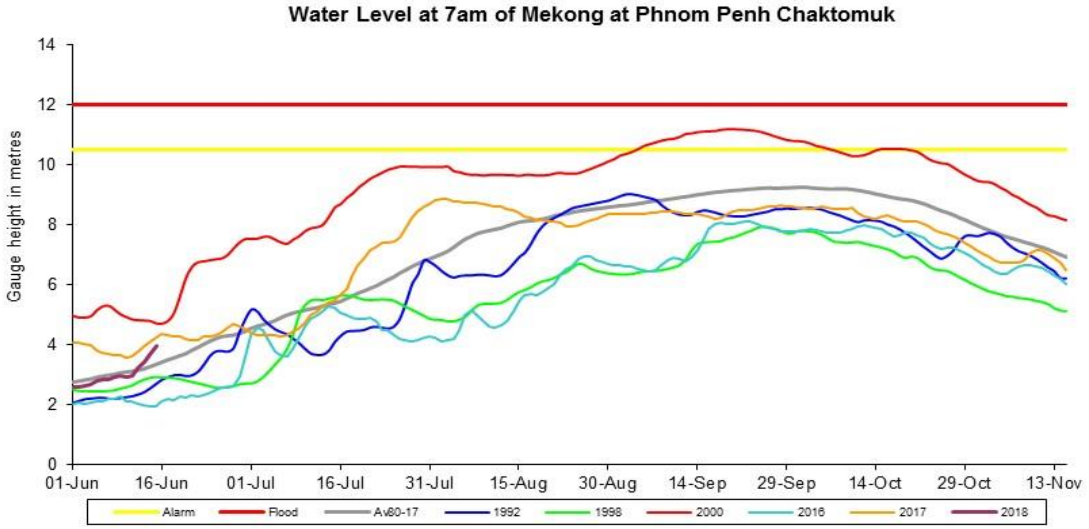

Water Level at 7am of Mekong at Khong Chiam
Gauge height in metres
16
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av60-17
1992
1998
2000
2016
2017
2018

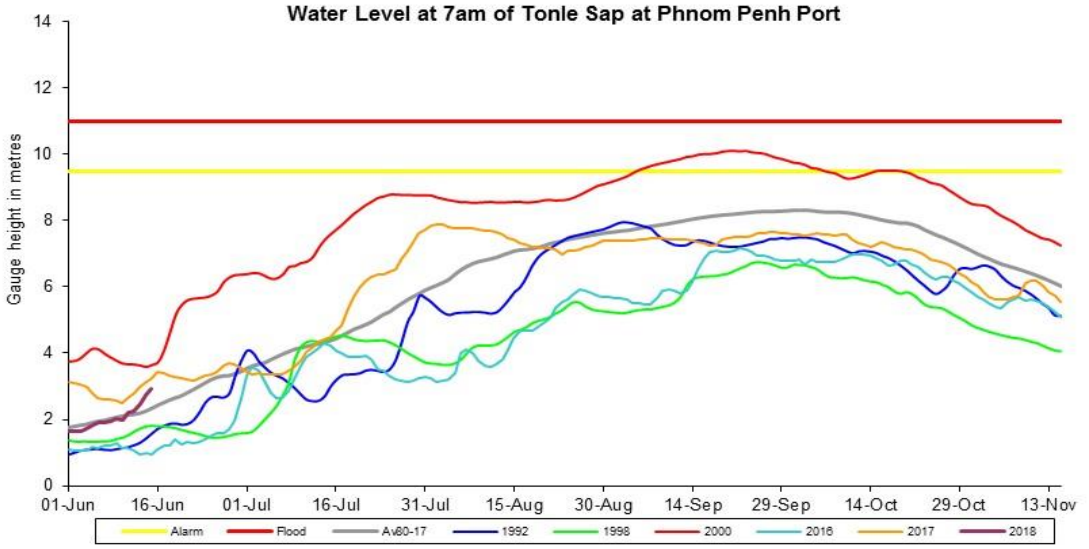

Water Level at 7am of Mekong at Pakse
Gauge height in metres
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av60-17
1992
1998
2000
2016
2017
2018

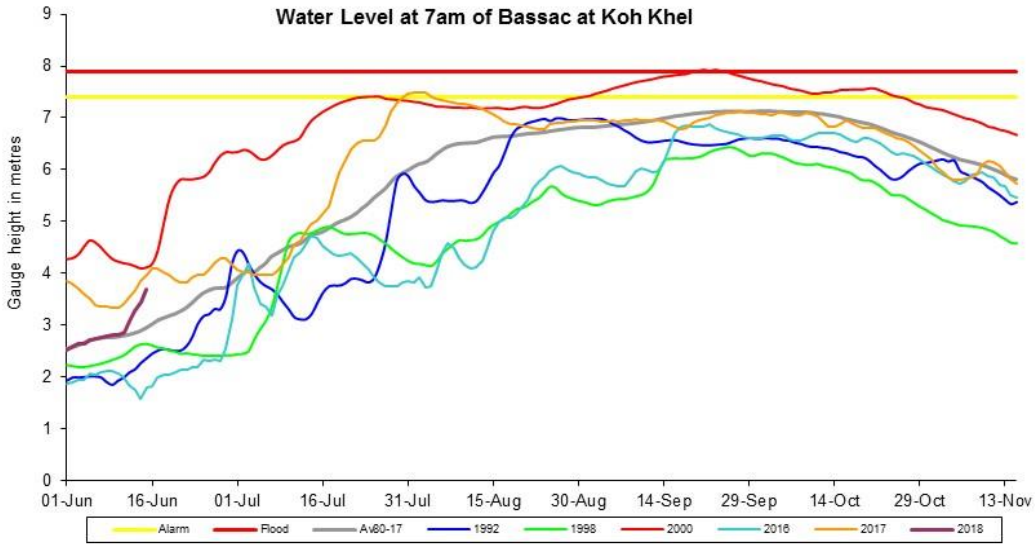

Water Level at 7am of Mekong at Stung Treng
Gauge height in metres
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av60-17
1992
1998
2000
2016
2017
2018.00

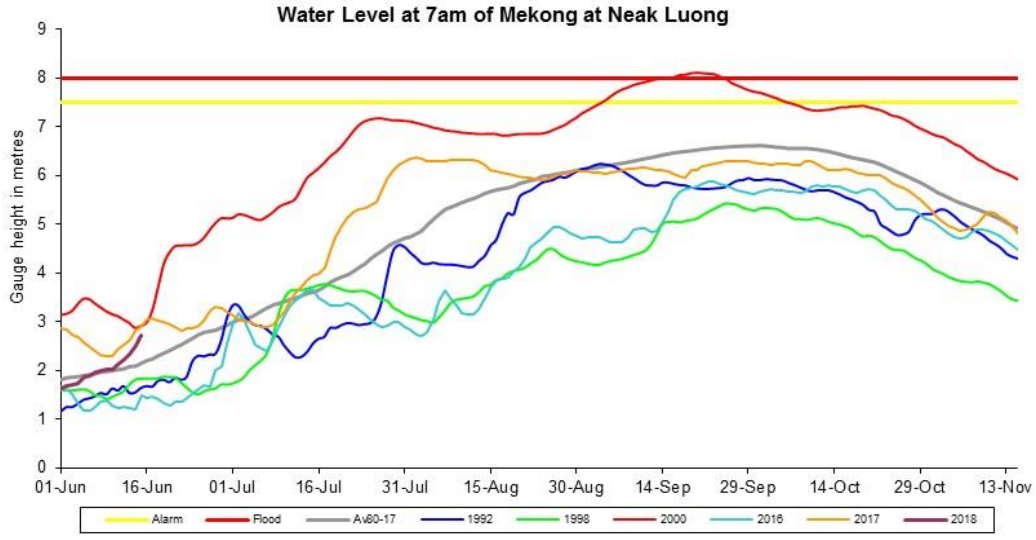

Water Level at 7am of Mekong at Kratie
Gauge height in metres
26
24
22
20
18
16
14
12
10
8
6
4
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av60-17
1992
1998
2000
2016
2017
2018

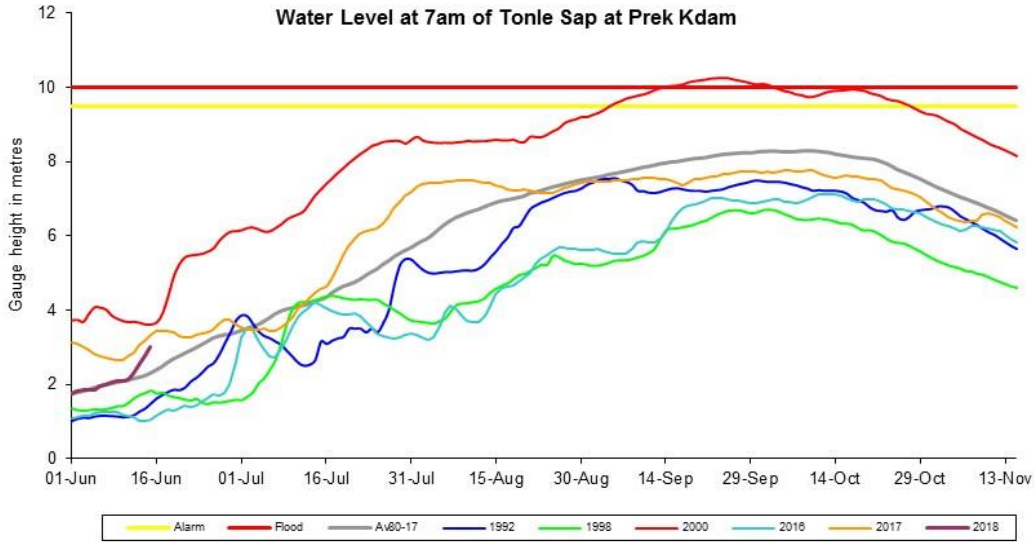

Water Level at 7am of Mekong at Kampong Cham
Gauge height in metres
18
16
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av60-17
1992
1998
2000
2016
2017
2018

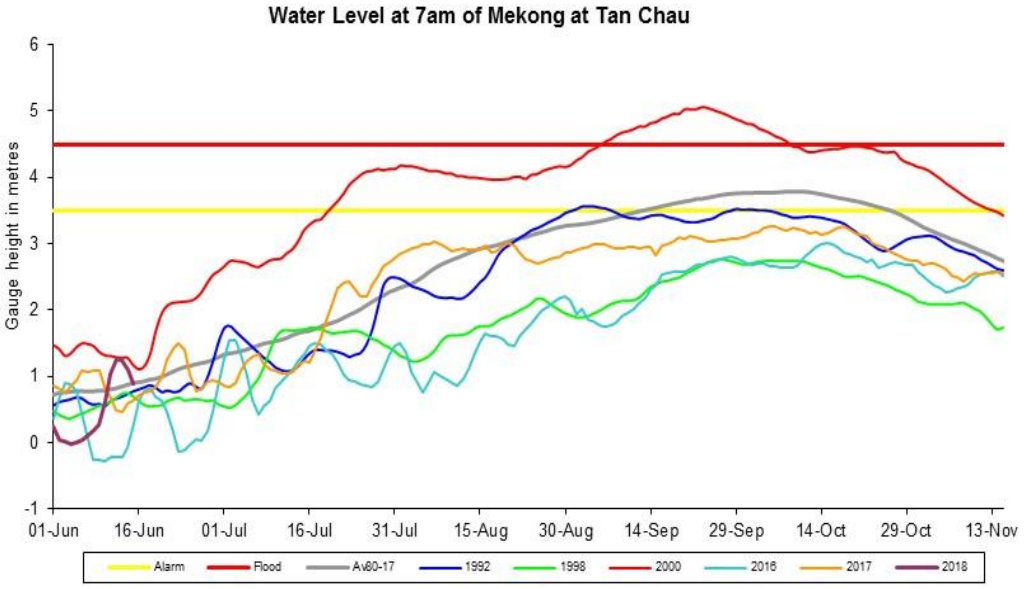

Water Level at 7am of Mekong at Phnom Penh Chaktomuk
Gauge height in metres
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av60-17
1992
1998
2000
2016
2017
2018

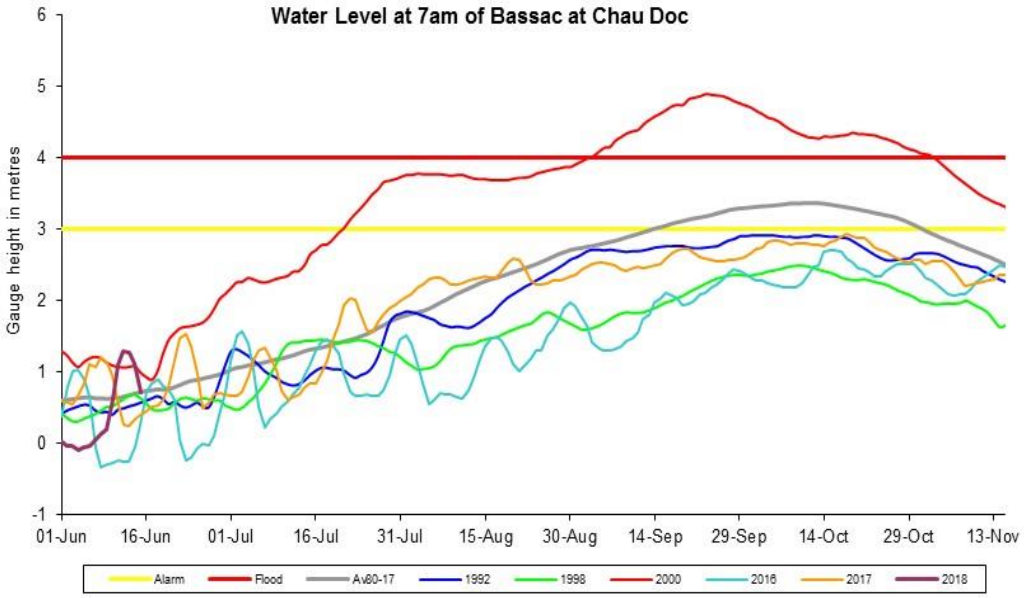

Water Level at 7am of Tonle Sap at Phnom Penh Port
Gauge height in metres
14
12
10
8
6
4
2
0
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av60-17
1992
1998
2000
2016
2017
2018


Water Level at 7am of Bassac at Koh Khel
Gauge height in metres
0
1
2
3
4
5
6
7
8
9
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av80-17
1992
1998
2000
2016
2017
2018


Water Level at 7am of Mekong at Neak Luong
Gauge height in metres
0
1
2
3
4
5
6
7
8
9
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av80-17
1992
1998
2000
2016
2017
2018


Water Level at 7am of Tonle Sap at Prek Kdam
Gauge height in metres
0
2
4
6
8
10
12
01-Jun
16-Jun
01-Jul
16-Jul
31-Jul
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
Alarm
Flood
Av80-17
1992
1998
2000
2016
2017
2018


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
Alarm
Flood
Av80-17
1992
1998
2000
2016
2017
2018


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
Alarm
Flood
Av80-17
1992
1998
2000
2016
2017
2018