

# Weekly Wet Season Situation Report in the Lower Mekong River Basin

03 - 09 June 2025

Prepared by

The Regional Flood and Drought Management Centre

10 June 2025



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First published (2020)

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**Title:** Weekly wet season situation report in the Lower Mekong River Basin for 03 – 09 June 2025.

ISSN: 1728-3248

Keywords: Monitoring/forecasting/weather/the Mekong/the Tonle Sap Lake

For bibliographic purposes, this volume may be cited as:

Mekong River Commission. (2024). Weekly wet season situation report in the Lower Mekong River

Basin for 03 – 09 June 2025. Vientiane: MRC Secretariat.

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## **Key Messages**

Key messages for this weekly report are presented below.

#### Rainfall monitoring and forecast

- In the period of 03 09 June 2024, there has been light to heavy rainfall has been observed over the LMB. The moderate to heavy rainfall has been observed over the LMB in the north and central parts of Lao PDR, the 3S basin, and the northeastern and southwestern part of Cambodia.
- During 10 16 June 2024, the accumulated rainfall over the entire Lower Mekong Basin is distributed with light to heavy rain. However, from 11-13 June, thunderstorms and heavy to very heavy rainfall are expected in some areas in the LMB including the northwestern and central part of Lao PDR, the northeastern part of Thailand; the northeastern and southwestern part of Cambodia.

#### Water level monitoring and forecast

- At 22 key monitoring stations along the Mekong mainstream from 03 09 June 2025, water levels are normal, and the flow threshold (PMFM 6C) are under normal conditions. It is also the same condition for Tan Chau and Chau Doc monitoring stations, which are significantly influenced by sea tidal fluctuation.
- In the period of 10 14 June 2025, Water levels are forecasted to be slightly increasing at all stations. However, the water levels are not expected to reach alarm and flood level thresholds. At Tan Chau and Chau Doc stations, the water levels are predicted to be also fluctuated, resulting from the influence of sea tidal patterns.

#### **Drought condition and forecast**

- During 03 09 June 2025, the LMB is experiencing normal to wet conditions. The monitored drought is caused primarily by meteorological indicator.
- The next three-month from June to August 2025, the total amount of rainfall in most areas of the LMB will be higher than the LTA by around 5 20 mm, except for some areas in the northeastern part of Thailand, the lowland areas of Cambodia, and the Mekong Delta. Overall, in the next 3 months, rainfall will be mainly concentrated in the central part of the LMB and higher than the LTA from 10 20mm.
- The forecast indicates that no drought conditions are expected in over the LMB from June to August 2025 using the Combined Drought Indicator (CDI).

#### 1 Introduction

This Weekly Wet Season Situation Report presents a preliminary analysis of the weekly hydrological situation in the Lower Mekong River Basin (LMB) for **03** – **09 June 2025**. The trend and outlook for water levels are also presented.

This analysis is based on the daily hydro-meteorological data provided by the Mekong River Commission (MRC) Member Countries – Cambodia, Lao PDR, Thailand, and Viet Nam – and on satellite data. The water level indicated in this report refers to an above zero gauge of each station.

The report covers the following topics that are updated weekly:

- General weather patterns, including rainfall patterns over the LMB.
- Water levels in the LMB, including in the Tonle Sap Lake.
- Flash flood and drought situation in the LMB.
- Weather, water level and flash flood forecast, and
- Possible implications.

Mekong River water levels are updated daily and can be accessed from: <a href="http://ffw.mrcmekong.org/bulletin.php">http://ffw.mrcmekong.org/bulletin.php</a>.

Drought monitoring and forecasting information is available at: <a href="http://droughtforecast.mrcmekong.org">http://droughtforecast.mrcmekong.org</a>

Flash flood information is accessible at: <a href="http://ffw.mrcmekong.org/ffg.php">http://ffw.mrcmekong.org/ffg.php</a>

#### 2 General Weather Patterns

At 7:00 AM - 10 June 2025, the tropical depression (TD) was at about 15.7 degrees North latitude & 115.6 degrees East longitude with maximum sustained winds of 39-49 km/h and is moving slowly to the West at a speed of about 5 km/h. In the next 24–48 hours - the TD is likely to strengthen into a Tropical Storm (TS) and move west-northwest at a speed of 10-15km/h, then in the next 48–72 hours - the TS is likely to change direction, moving in a North-Northwest direction at a speed around 10 km/h and is likely to continue to strengthen. While the moderate southwest moon soon prevails over the lower part of the LMB.

**Figure 1** presents mean sea level pressure over the region. It is forecasted that the moderate southwest monsoon and the TD will be influenced to the Lower Mekong Basin from 10-16 June. Therefore, from 11-13 June, thunderstorms and heavy to very heavy rainfall are expected in some areas in the LMB including the northwestern and central part of Lao PDR, the northeastern part of Thailand; the northeastern and southwestern part of Cambodia.

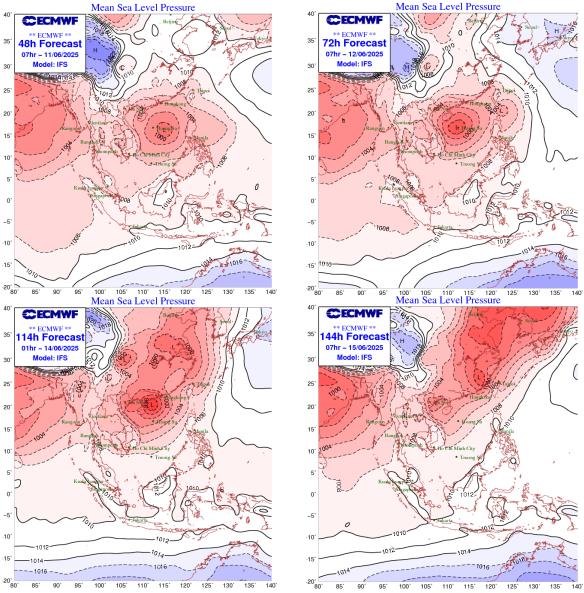


Figure 1: Weather conditions over the LMB

According to the ASEAN Specialised Meteorological Centre (ASMC, <a href="http://asmc.asean.org/home/">http://asmc.asean.org/home/</a>), the subseasonal weather outlook (09 – 22 June 2025) indicates that the Lower Mekong Basin (LMB) is likely in in wetter conditions at the central part. **Figure 2** shows the outlook of weather condition from 09 to 22 June 2025 in Southeast Asia based on results from the NCEP model (National Centres for Environmental Prediction).

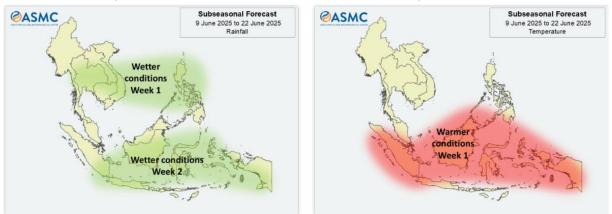


Figure 2: Outlook of wet and dry conditions over the Asian countries by ASMC.

Based on the tropical storm risk (TS) (<a href="https://www.tropicalstormrisk.com/">https://www.tropicalstormrisk.com/</a>), there is one active Tropical Depression (TD) at NW pacific system as of 09 June 2025 as displayed in **Figure 3.** 

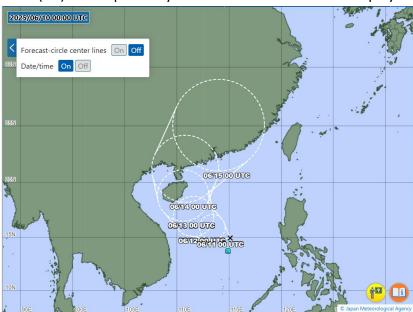


Figure 3: One tropical storm risk observed on 09 June 2025

# 3. Rainfall and Water Level Monitoring

#### 3.1. Rainfall monitoring

The weekly accumulated rainfall based on the observed data provided by the MRC Member Countries – Cambodia, Lao PDR, Thailand, and Viet Nam – from 03 - 09 June 2024 (**Figure 4**).

The light to heavy rainfall has been only observed over the LMB. However, moderate to heavy rain rainfall can be mostly observed in Lao PDR and 3S basins.

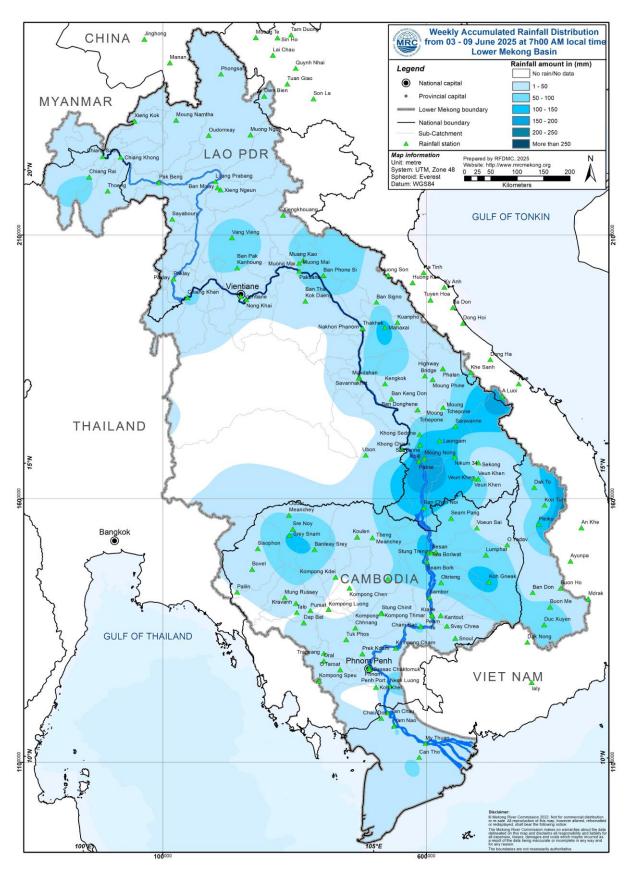


Figure 4: Weekly rainfall distribution over the LMB during 03 - 09 June 2025

#### 3.2. Water level monitoring

The hydrological regimes of the Mekong mainstream are illustrated by recorded water levels and flows at key mainstream stations: at Chiang Saen to capture mainstream flows entering from the Upper Mekong Basin (UMB); at Vientiane to present flows generated by climate conditions in the upper part of the LMB; at Pakse to investigate flows influenced by inflows from the larger Mekong tributaries; at Kratie in Cambodia to capture overall flows of the Mekong Basin; and at Viet Nam's Tan Chau and Chau Doc to monitor flows to the Delta.

The key stations along the LMB and their respective model application for River Flood Forecasting during the wet season from June to October and River Monitoring during the dry season from November to May are presented in **Figure 5**. The hydrograph for each key station is available from the MRC's River Flood Forecasting: http://ffw.mrcmekong.org/overview.php.

During 03 – 09 June 2025, the observed water level (WL) at Jinghong hydrological station<sup>1</sup>, was almost constant and ranges between 535.25 m and 536.72 m, which are corresponding to the outflow between 841.00 m<sup>3</sup>/s to 1,920.00 m<sup>3</sup>/s (recorded on 7:00 am), respectively (**Figure 6**). The water level in Chiang Saen Station also indicated a slight fluctuation ranging from 2.18 m to 1.96 m. At the same period, the water level in Luang Prabang station also slightly decreased with an approximate value of -0.50 m from 9.30 m to 8.80 m as compared to the previous week.

During the same period, the water levels observed at upper parts of the basin at Chiang Khan, Vientiane, Nongkhai, Nakhon Phanom, Thakhek, Mukdahan, and Savannakhet have been slightly decreasing from 5.91 m to 5.23 m, 4.77 m to 3.99 m, 3.35 m to 2.44 m, 5.03 m to 4.23 m, 3.69 m to 3.33 m, 5.05 m to 4.67 m, 3.92 m to 3.87 m, and 2.34 m to 2.18 m, respectively. However, at Khong Chiam and Pakse, the water levels have been increased from 4.47 m to 4.76 m, and 3.24 m to 3.50, respectively.

Moving down to the floodplain area at Stung Treng, Kratie, Kampong Cham, Phnom Penh (Bassac), and Phnom Penh Port, Koh Khel, Neak Loung and Prek Kdam, the water levels have been decreasing from previous week.

Similar to the previous week, the water levels from 03 to 09 June 2025 at Viet Nam's Tan Chau and Chau Doc fluctuated between their LTA values due to daily tidal effects from the sea. At the Tan Chau station, the water levels varied between 0.06 m and 1.07 m, while at the Chau Doc station, they ranged from 0.06 m to 1.16 m.

<sup>&</sup>lt;sup>1</sup> Near-real time data of hydro-meteorological monitoring at the Jinghong hydrological station is available at <a href="https://portal.mrcmekong.org/monitoring/river-monitoring-telemetry">https://portal.mrcmekong.org/monitoring/river-monitoring-telemetry</a>.

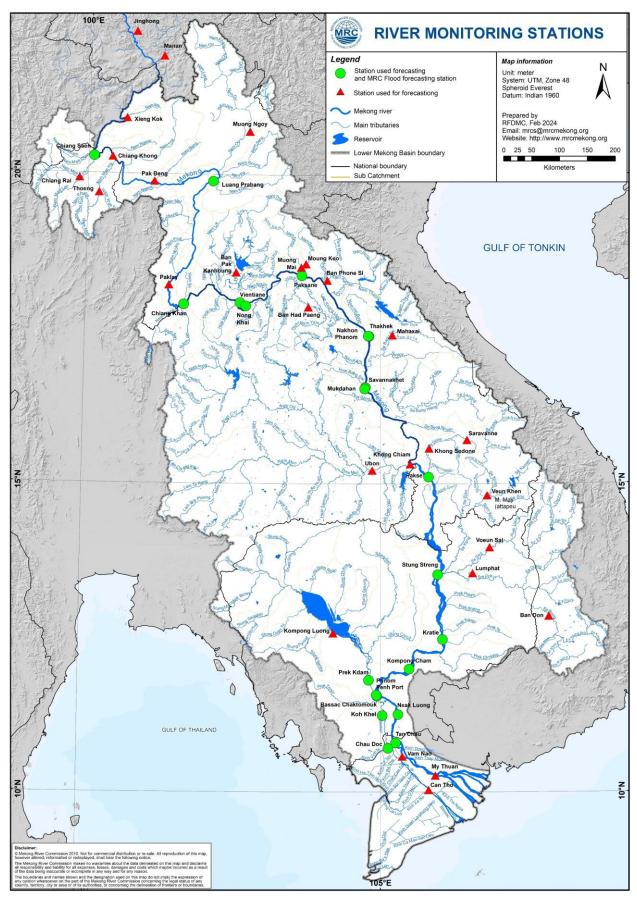


Figure 5: The key stations along LMB for river flood forecasting

The water levels in key monitoring stations on 03 June 2024 are below their long-term averages (LTAs) except for the Luang Prabang station. Moreover, all stations with available PMFM thresholds are in normal conditions. The graphics of water level monitoring in all key stations are presented in **Annex A** and the weekly water levels and rainfall at each key station are summarised in **Annex B**.

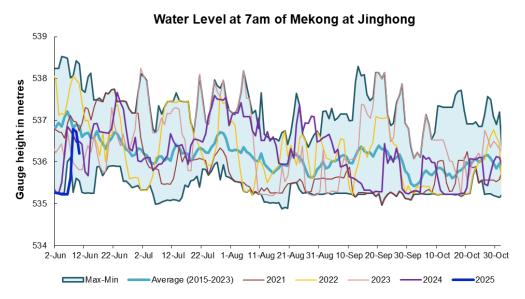


Figure 6. Water level at the Jinghong hydrological station up to 09 June 2025.

At the end of the wet season, when water levels along the Mekong River subside, the outflow of the Tonle Sap Lake (TSL) returns to the Mekong River and then to the Delta. This phenomenon normally takes place between September and October. Based on flow observation at Prek Kdam monitoring station, the inflow (reverse flow) of the Tonle Sap Lake took place since 29 May 2025.

The inflow flow is calculated based on a formula of rating-curves using by difference of water levels at Kompong Luong and Phnom Penh Port stations for slop and Prek Kdam as cross-section of the Lake. The formula of flow is as follows:

$$Flow = WL_{Prek\ Kdam}^{1.2} \times \sqrt{|WL_{Phnom\ Penh\ Port} - WL_{Kampong\ Luong}|}$$

Where, WL is water level in m (msl).

The seasonal changes of the inflow/reverse flow and the outflow of the TSL at Prek Kdam in comparison with the flows of 2020, 2021 and 2022, 2023 and their LTA level (1997-2024) are illustrated in **Figure 7**. Up to 09 June 2025, it was observed that the inflow to Tonle Sap Lake is relatively lower than its LTA due to no rainfall and less inflows from upstream **(Figure 7)**.

The seasonal changes in monthly flow volumes up to 09 June 2025 for the TSL compared with that in 2020, 2021, 2022, 2023, 2024 and their LTAs, and the fluctuation levels (1997–2024) are presented in **Table 8**. The mean monthly water volume of the Tonle Sap Lake in May 2025

is lower than its LTA (about 82.86 %), 2019, 2022, 2023 and 2024 but higher than that in 2020 and 2021 during the same period (Figure 8 and Table 1).

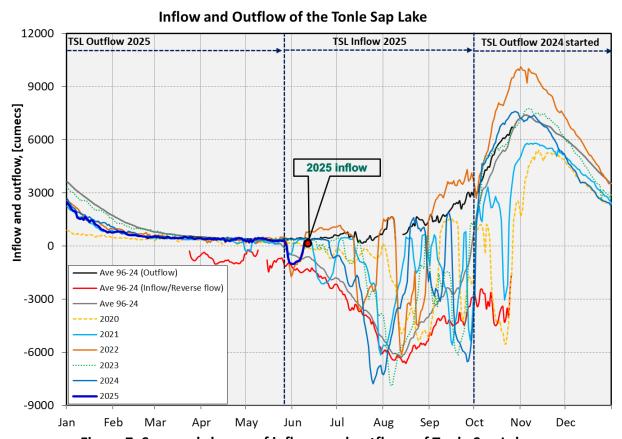


Figure 7: Seasonal change of inflows and outflows of Tonle Sap Lake.

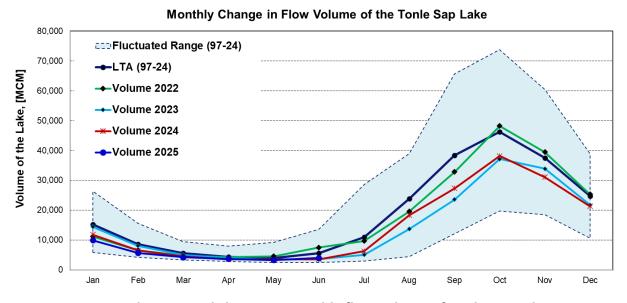


Figure 8. The seasonal change in monthly flow volume of Tonle Sap Lake.

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

| Month         | LTA<br>(97-24)<br>[MCM] | (97-24) Volume |                         | Volume<br>2019<br>[MCM] | Volume<br>2020<br>[MCM] | Volume<br>2021<br>[MCM] | Volume<br>2022<br>[MCM] | Volume<br>2023<br>[MCM] | Volume<br>2024<br>[MCM] | Volume<br>2025<br>[MCM] | Volume in<br>2025 [%],<br>compared<br>with its LTA |
|---------------|-------------------------|----------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|----------------------------------------------------|
| Jan           | 15197.93                | 26357.53       | 5906.80                 | 13080.39                | 10285.31                | 5906.80                 | 9923.80                 | 11214.32                | 14422.11                | 10341.91                | 68.05                                              |
| Feb           | 8644.19                 | 15596.22       | 4198.60                 | 7302.32                 | 6019.30                 | 4264.19                 | 5832.97                 | 6558.79                 | 8069.29                 | 5690.52                 | 65.83                                              |
| Mar           | 5564.35                 | 9438.24        | 3347.07                 | 4852.74                 | 4354.62                 | 3553.99                 | 4264.88                 | 4736.52                 | 5080.64                 | 4256.33                 | 76.49                                              |
| Apr           | 4300.28                 | 8009.14        | 2866.91                 | 4282.78                 | 3667.47                 | 2992.61                 | 3556.68                 | 4288.31                 | 3884.16                 | 3697.92                 | 85.99                                              |
| May           | 4009.61                 | 9176.93        | 2417.81                 | 4356.44                 | 3266.43                 | 2594.92                 | 3240.78                 | 4556.83                 | 3438.66                 | 3322.45                 | 82.86                                              |
| Jun           | 5624.02                 | 13635.01       | 2468.70                 | 8465.20                 | 3517.06                 | 2641.88                 | 3798.29                 | 7489.04                 | 3689.97                 | 3979.53                 | 70.76                                              |
| Jul           | 11012.31                | 28599.56       | 2925.86                 | 14964.58                | 4001.99                 | 2925.86                 | 5346.73                 | 9703.79                 | 5062.21                 |                         |                                                    |
| Aug           | 23865.05                | 39015.12       | 4433.46                 | 23407.37                | 7622.71                 | 5941.07                 | 10547.80                | 19554.70                | 13694.57                |                         |                                                    |
| Sep           | 38377.57                | 65632.35       | 12105.31                | 39654.01                | 24194.19                | 12105.31                | 16382.34                | 32860.34                | 23550.60                |                         |                                                    |
| Oct           | 46261.30                | 73757.23       | 19705.50                | 41847.54                | 30358.38                | 20799.13                | 27318.21                | 48199.12                | 37141.40                |                         |                                                    |
| Nov           | 37500.63                | 60367.33       | 18534.61                | 33663.58                | 19112.65                | 27546.80                | 28982.93                | 39452.53                | 33929.52                |                         |                                                    |
| Dec           | 24795.31                | 38888.95       | 10563.49                | 23079.82                | 10577.29                | 18251.65                | 20170.76                | 25346.65                | 21757.70                |                         |                                                    |
|               | Critical situa          | ation: lower t | han long-te             | rm minimum              | values (LTN             | /IN)                    |                         |                         |                         |                         |                                                    |
|               | Normal con              | dition: withir | the range o             | of long-term            | min (LTMIN              | ) and max (L            | TMAX) valu              | es                      |                         |                         |                                                    |
|               | Low volume              | situation: lo  | wer than lo             | ng-term ave             | rage (LTA)              |                         |                         |                         |                         |                         |                                                    |
| Unit: Millior | Cubic Mete              | er (1 MCM=     | 0.001 Km <sup>3</sup> ) |                         |                         |                         |                         |                         |                         |                         |                                                    |

Remarks: the volume of Tonle Sap Lake in 2025 is updated untill 09 June 2025.

## 4. Flash Flood in the Lower Mekong Basin

During the weekly monitoring period from 03 - 09 June, the LMB received light to heavy rain and thunderstorms in some areas.

According to the Southeast Asian Flash Flood Guidance System (SEAFFGS) and analysis, flash flood guidance was detected at low to moderate level in the next 1, 3 and 6 hours in some areas of Lao PDR and Cambodia during the reporting period as shown in <u>Figure 14</u> & <u>Table 2</u>.

Table 2. Detected low-risk flash flood in the LMB

| In th        | e next 1hrs   |          | In          | the next 3l  | nrs      | In the next 6hrs |              |          |  |  |  |  |
|--------------|---------------|----------|-------------|--------------|----------|------------------|--------------|----------|--|--|--|--|
| Provinces    | Districts     | Level    | Provinces   | Districts    | Level    | Provinces        | Districts    | Level    |  |  |  |  |
| Kampong Cham | Stueng Trang  | Moderate | Mondul Kiri | Pechr Chenda | Moderate | Mondul Kiri      | Pechr Chenda | Moderate |  |  |  |  |
| Kratie       | Preaek Prasab | Moderate | Ratana Kiri | TaVeaeng     | Moderate | Ratana Kiri      | TaVeaeng     | Moderate |  |  |  |  |
| Mondul Kiri  | Kaoh Nheaek   | Moderate |             |              |          |                  |              |          |  |  |  |  |
| Mondul Kiri  | Pechr Chenda  | Moderate |             |              |          |                  |              |          |  |  |  |  |
| Ratana Kiri  | Koun Mom      | Moderate |             |              |          |                  |              |          |  |  |  |  |
| Ratana Kiri  | TaVeaeng      | Moderate |             |              |          |                  |              |          |  |  |  |  |

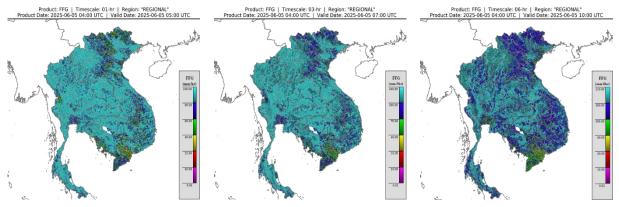


Figure 9. Flash Flood Guidance for the next 1-hr, 3-hr and 6-hr on 05 June

## 5. Drought Monitoring in the Lower Mekong Basin

#### 5.2. Weekly drought monitoring from 03 to 09 June 2025

Drought monitoring data for 2025 are available from Monday to Sunday every week; thus, the reporting period is normally delayed by one day compared to Flood and Flash Flood reports. We adopt the Index of Soil Water Fraction (ISWF) data obtained from FFGS to represent soil moisture of agricultural indicator for both dry and wet seasons.

#### Weekly Standardised Precipitation Index (SPI1)

Meteorological indicator shows that from 03 - 09 June 2024, as shown in Figure 9, the LMB was facing normal to wet conditions.

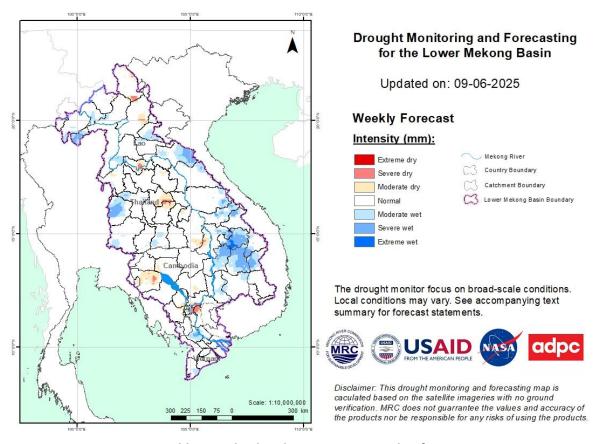


Figure 10: Weekly standardized precipitation index from 03 – 09 June.

#### Weekly Index of Soil Water Fraction (ISWF)

No drought over the LMB by the Index of Soil Water Fraction, as displayed in **Figure 10**, during the monitoring week from 03 - 09 June. The LMB was facing normal to wet conditions.

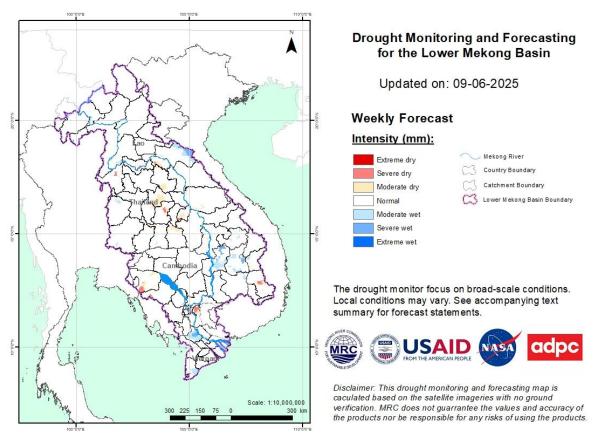


Figure 11: Weekly Index of Soil Water Fraction from 03 – 09 June.

#### • Weekly Combined Drought Index (CDI)

The combined drought indicator, **Figure 11**, shows that the LMB was normal in most parts of the region during the monitoring week. Some moderate drought was detected in small areas of the Member Countries but not significant.

The impacted areas are listed below:

| Number | Country  | Province         | Mderate | Severe | Extreme | Exceptional | Number                                                       | Country  | Province          | Mderate | Severe | Extreme | Exceptional |  |  |
|--------|----------|------------------|---------|--------|---------|-------------|--------------------------------------------------------------|----------|-------------------|---------|--------|---------|-------------|--|--|
| 1      | Cambodia | Banteay Meanchey |         |        |         |             | 13                                                           | Lao PDR  | Vientiane Capital |         |        |         |             |  |  |
| 2      | Cambodia | Battambang       |         |        |         |             | 14                                                           | Thailand | Amnat Charoen     |         |        |         |             |  |  |
| 3      | Cambodia | Kampong Cham     |         |        |         |             | 15                                                           | Thailand | Bueng Kan         |         |        |         |             |  |  |
| 4      | Cambodia | Kandal           |         |        |         |             | 16                                                           | Thailand | Chantaburi        |         |        |         |             |  |  |
| 5      | Cambodia | Pailin           |         |        |         |             | 17                                                           | Thailand | Kalasin           |         |        |         |             |  |  |
| 6      | Cambodia | Phnom Penh       |         |        |         |             | 18                                                           | Thailand | Loei              |         |        |         |             |  |  |
| 7      | Cambodia | Prey Veng        |         |        |         |             | 19                                                           | Thailand | Maha Sarakham     |         |        |         |             |  |  |
| 8      | Cambodia | Pursat           |         |        |         |             | 20                                                           | Thailand | Mukdahan          |         |        |         |             |  |  |
| 9      | Cambodia | Siem Reap        |         |        |         |             | 21                                                           | Thailand | Roi Et            |         |        |         |             |  |  |
| 10     | Lao PDR  | Champasak        |         |        |         |             | 22                                                           | Thailand | Sakon Nakhon      |         |        |         |             |  |  |
| 11     | Lao PDR  | Louangphabang    |         |        |         |             | 23                                                           | Thailand | Ubon Ratchathani  |         |        |         |             |  |  |
| 12     | Lao PDR  | Phongsali        |         |        |         |             | 24                                                           | Thailand | Yasothon          |         |        |         |             |  |  |
|        |          |                  |         |        |         |             |                                                              |          |                   |         |        |         |             |  |  |
|        |          |                  |         |        |         |             | Other provinces of the Mekong Delta of Viet Nam have no data |          |                   |         |        |         |             |  |  |
|        |          |                  |         |        |         |             |                                                              | Moderate |                   |         |        |         |             |  |  |
|        |          |                  |         |        |         |             |                                                              | Extreme  |                   |         |        |         |             |  |  |

Note: S: short-term drought, less than 1 months; L: long-term drought, more than 1 month

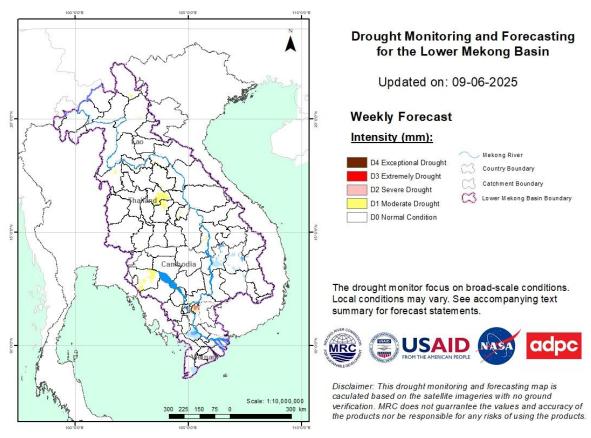


Figure 12: Weekly Combined Drought Index from 03 – 09 June.

More information on Drought Forecasting and Early Warning (DFEW) as well as the explanation is available here: <a href="http://droughtforecast.mrcmekong.org/templates/view/our-product">http://droughtforecast.mrcmekong.org/templates/view/our-product</a>. DFEW provides not only weekly monitoring and forecasting information but also a three-month forecast of drought indicators with seasonal outlook which are updated every month based on international weather forecast models. Details on drought forecast are described in section 6.4 of this report.

#### **6** Weather and Water Level Forecast and Flash Flood information

#### 6.1 Rainfall forecast

During 10-14 June 2024, the accumulated rainfall over the entire Lower Mekong Basin is distributed with light to heavy rain based on CHIRPS-GFS (**Figure 12**). Thunderstorms and heavy to very heavy rainfall are expected in some areas in the LMB including the northwestern and central part of Lao PDR, the northeastern part of Thailand; the northeastern and southwestern part of Cambodia.

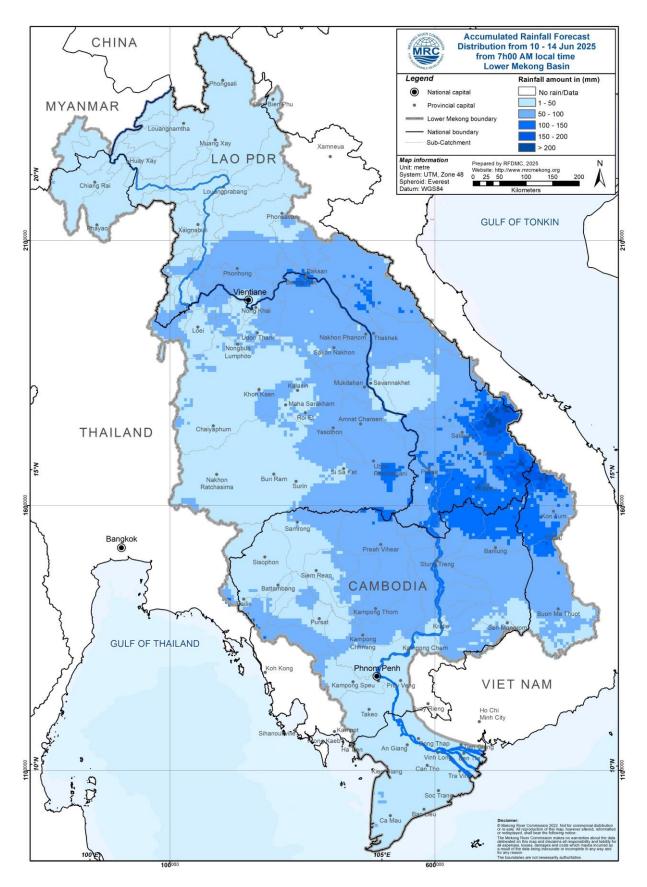


Figure 13: Accumulated rainfall forecast from CHIRP-GFS (10 – 14 June 2025)

#### **6.2** Water level forecast

During the wet season, from June 1st to October 31st each year, daily riverine flood forecasts are conducted for 22 stations along the Mekong mainstream, with a forecast lead time of five days. This report will describe the forecast water level for a period of 10 –14 June 2025. Water levels a all station are forecasted to be in normal conditions without exceeding the alarm and flood levels thresholds.

In Chiang Saen monitoring station, the water level is expected to be fluctuated over the forecasting period of 10-14 June 2025. However, it will slightly increase from 1.96 m to 2.15 m. The water level in Luang Prabang stations affected by backwater is likely slightly increasing from 8.80 m to 9.05 m.

Along the Mekong mainstream, the water levels at all stations will slightly increase. At Chiang Khan, Nakhon Phanom, Thakhek, Mukdahan, Savannakhet, Pakse, Stung Treng, Kratie, Kampong Cham, Phnom Penh Bassac, Phnom Penh Port, and Prek Kdam, water levels will slightly rise of approximately 0.13 m, 0.27 m, 0.24 m, 0.43 m, 0.41 m, 0.10 m, 0.16 m, 0.21 m, 0.31 m, 0.17 m, 0.17 m, 0.08 m, respectively. However, at several stations including Vientiane, Nongkhai, Paksane, Khong Chiam, Koh Khel and Neak Luong, the water levels are expected to be stable.

For the Tan Chau station on the Mekong River and Chau Doc station on the Bassac River, water levels will be fluctuating approximately ranging from 1.07 m to 0.12 mm and 1.16 m to 0.22 m, respectively, following daily tidal effects from the sea.

The weekly River Monitoring Bulletin and forecasting issued on 09 June 2025 can be found in **Table 2.** Results of the weekly river monitoring and forecasting bulletin are also available at http://ffw.mrcmekong.org/bulletin.php

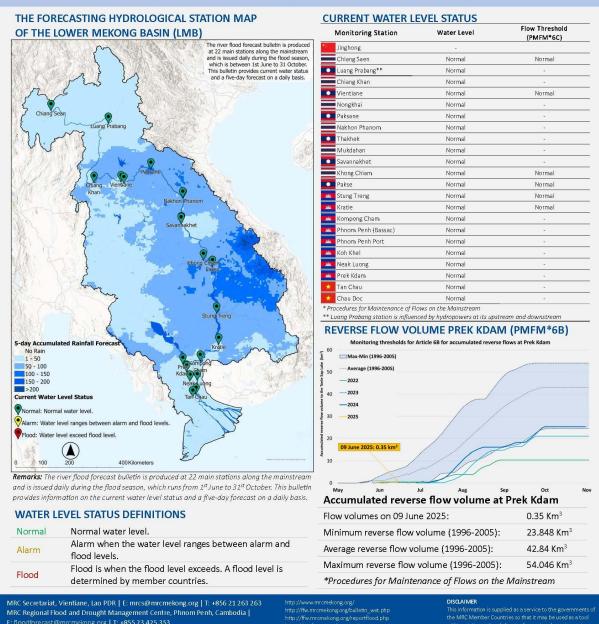
Table 3. River Monitoring and Forecasting Bulletin.



#### MEKONG RIVER MONITORING AND FORECASTING BULLETIN

#### Monitoring on 09 June 2025, 7:00 (UTC+7)

Highlights: Water levels at all stations are in normal conditions, for which they have not reached alarm or flood levels. The reverse flow to Tonle Sap Lake has started since 29 May 2025 with total accumulated volume of 0.35 km³.





## MEKONG RIVER MONITORING AND FORECASTING BULLETIN

#### Forecasting from 10 to 14 June 2025

**Highlights:** Thunderstorms with isolated heavy to very heavy rainfall are forecast in parts of the LMB water levels at all stations are expected to rise, with the exception of Vientiane, Nongkhai, Paksane, and Khong Chiam where levels are anticipated to remain stable.

| Forecasting Station | 24 h<br>Observed<br>Rainfall<br>(mm) | Zero<br>gauge<br>above<br>M.S.L (m) | Observed Water<br>Level againt zero<br>gauge (m) |                 |                |               |               |                |               |       | Flood<br>Level<br>(m) | Forecasted<br>Water<br>Levels<br>Change in | Max.<br>Water<br>levels<br>change<br>within | Min.<br>distance<br>to alarm<br>level<br>within | Min.<br>distance<br>to flood<br>level<br>within |
|---------------------|--------------------------------------|-------------------------------------|--------------------------------------------------|-----------------|----------------|---------------|---------------|----------------|---------------|-------|-----------------------|--------------------------------------------|---------------------------------------------|-------------------------------------------------|-------------------------------------------------|
|                     | 08-Jun                               |                                     | 08-Jun                                           | 09-Jun          | 10-Jun         | 11-Jun        | 12-Jun        | 13-Jun         | 14-Jun        |       |                       | 5 days (m)                                 | next 5<br>days (m)                          | next 5<br>days (m)                              | next 5<br>days (m)                              |
| Jinghong            | 0.0                                  | 12.                                 | 536.79                                           | <b>→</b> 536.72 | -              | -             | -             | -              | -             | 127   | 2                     |                                            | -                                           | -                                               | -                                               |
| Chiang Saen         | 10.0                                 | 357.110                             | 1.91                                             | → 1.96          | <b>↑</b> 2.28  | ↑ 2.60        | <b>↓</b> 2.42 | ↓ 2.30         | <b>↓</b> 2.15 | 11.50 | 12.80                 | ↑ 0.19                                     | 0.64                                        | 8.90                                            | 10.20                                           |
| Luang Prabang       | 2.8                                  | 267.195                             | 8.81                                             | ↓ 8.80          | → 8.78         | → 8.80        | <b>→</b> 8.87 | → 8.96         | → 9.05        | 17.50 | 18.00                 | ↑ 0.25                                     | 0.25                                        | 8.45                                            | 8.95                                            |
| Chiang Khan         | 3.4                                  | 194.118                             | 5.35                                             | <b>↓</b> 5.23   | <b>↓</b> 5.11  | → 5.15        | <b>→</b> 5.13 | → 5.21         | ↑ 5.36        | 14.50 | 16.00                 | ↑ 0.13                                     | 0.13                                        | 9.14                                            | 10.64                                           |
| Vientiane Vientiane | 12.6                                 | 158.040                             | 4.02                                             | <b>↓</b> 3.99   | → 3.90         | → 3.82        | <b>→</b> 3.89 | → 3.94         | ↑ 4.07        | 11.50 | 12.50                 | → 0.08                                     | 0.08                                        | 7.43                                            | 8.43                                            |
| Nongkhai            | 3.6                                  | 153.648                             | 2.52                                             | <b>↓</b> 2.44   | → 2.36         | <b>↓</b> 2.25 | <b>→</b> 2.32 | → 2.36         | <b>1</b> 2.50 | 11.40 | 12.20                 | → 0.06                                     | 0.06                                        | 8.90                                            | 9.70                                            |
| Paksane Paksane     | 8.4                                  | 142.125                             | 4.36                                             | <b>↓</b> 4.23   | <b>↓</b> 4.08  | → 4.03        | <b>→</b> 3.98 | <b>→</b> 4.03  | ↑ 4.15        | 13.50 | 14.50                 | → -0.08                                    | -0.25                                       | 9.35                                            | 10.35                                           |
| Nakhon Phanom       | 1.1                                  | 130.961                             | 3.50                                             | <b>↓</b> 3.33   | <b>↓</b> 3.16  | → 3.10        | →3.14         | ↑ 3.34         | <b>↑</b> 3.60 | 11.50 | 12.00                 | ↑ 0.27                                     | 0.27                                        | 7.90                                            | 8.40                                            |
| Thakhek             | 0.7                                  | 129.629                             | 4.86                                             | ↓ 4.67          | <b>↓</b> 4.52  | <b>→</b> 4.43 | <b>→</b> 4.45 | ↑ 4.65         | ↑ 4.91        | 13.00 | 14.00                 | ↑ 0.24                                     | 0.24                                        | 8.09                                            | 9.09                                            |
| Mukdahan            | 0.0                                  | 124.219                             | 3.86                                             | → 3.87          | → 3.90         | → 3.90        | <b>→</b> 3.93 | ↑ 4.09         | ↑ 4.30        | 12.00 | 12.50                 | ↑ 0.43                                     | 0.43                                        | 7.70                                            | 8.20                                            |
| Savannakhet         | 0.0                                  | 124.219                             | 2.28                                             | <b>↓</b> 2.18   | <b>→</b> 2.13  | <b>→</b> 2.09 | <b>→</b> 2.12 | <b>↑</b> 2.28  | <b>↑</b> 2.59 | 12.00 | 13.00                 | ↑ 0.41                                     | 0.41                                        | 9.41                                            | 10.41                                           |
| Khong Chiam         | 1.0                                  | 89.030                              | 4.71                                             | → 4.76          | → 4.69         | → 4.62        | <b>→</b> 4.57 | → 4.59         | <b>↑</b> 4.77 | 13.50 | 14.50                 | → 0.01                                     | -0.19                                       | 8.73                                            | 9.73                                            |
| Pakse               | 0.0                                  | 86.490                              | 3.50                                             | → 3.50          | <b>J</b> 3.44  | <b>↓</b> 3.37 | →3.35         | ↑ 3.41         | ↑ 3.60        | 11.00 | 12.00                 | ↑ 0.10                                     | -0.16                                       | 7.40                                            | 8.40                                            |
| Stung Treng         | 6.5                                  | 36.790                              | 4.30                                             | <b>↓</b> 4.28   | <b>→</b> 4.33  | → 4.37        | <b>→</b> 4.38 | → 4.39         | ↑ 4.44        | 10.70 | 12.00                 | ↑ 0.16                                     | 0.16                                        | 6.26                                            | 7.56                                            |
| Kratie              | 0.0                                  | -0.101                              | 10.40                                            | ↑ 10.60         | <b>→</b> 10.59 | ↑ 10.67       | <b>1</b> 0.75 | <b>→</b> 10.78 | ↑ 10.81       | 22.00 | 23.00                 | ↑ 0.21                                     | 0.21                                        | 11.19                                           | 12.19                                           |
| Kompong Cham        | 0.0                                  | -0.930                              | 4.86                                             | → 4.86          | ↑ 5.00         | → 5.01        | <b>↑</b> 5.08 | ↑ 5.14         | <b>↑</b> 5.17 | 15.20 | 16.20                 | ↑ 0.31                                     | 0.31                                        | 10.03                                           | 11.03                                           |
| Phnom Penh (Bassac) | 0.0                                  | -1.020                              | 2.63                                             | <b>↓</b> 2.55   | <b>↓</b> 2.50  | <b>↑</b> 2.58 | 14.66 ↑       | <b>↑</b> 2.70  | <b>→</b> 2.72 | 10.50 | 12.00                 | ↑ 0.17                                     | 0.17                                        | 7.78                                            | 9.28                                            |
| Phnom Penh Port     | nr                                   | 0.070                               | 1.65                                             | <b>↓</b> 1.55   | <b>↓</b> 1.50  | <b>↑</b> 1.58 | <b>↑</b> 1.62 | ↑ 1.70         | → 1.72        | 9.50  | 11.00                 | ↑ 0.17                                     | 0.17                                        | 7.78                                            | 9.28                                            |
| Koh Khel            | 0.0                                  | -1.000                              | 2.72                                             | <b>↓</b> 2.60   | <b>↓</b> 2.50  | <b>→</b> 2.48 | <b>→</b> 2.47 | ↑ 2.54         | ↑ 2.58        | 7.90  | 8.40                  | → -0.02                                    | -0.13                                       | 5.32                                            | 5.82                                            |
| Meak Luong          | 0.0                                  | -0.330                              | 1.76                                             | ↓ 1.68          | <b>→</b> 1.68  | → 1.69        | 1.66          | → 1.67         | <b>→</b> 1.69 | 7.50  | 8.00                  | → 0.01                                     | -0.02                                       | 5.81                                            | 6.31                                            |
| Prek Kdam           | 0.0                                  | 0.080                               | 1.82                                             | <b>↓</b> 1.61   | <b>↓</b> 1.55  | <b>→</b> 1.56 | 1.62          | ↑ 1.66         | ↑ 1.69        | 9.50  | 10.00                 | ↑ 0.08                                     | 0.08                                        | 7.81                                            | 8.31                                            |
| Tan Chau            | 0.0                                  | 0.000                               | 1.05                                             | <b>→</b> 1.07   | ↓ 1.00         | <b>↓</b> 0.95 | <b>↓</b> 0.58 | <b>↓</b> 0.21  | <b>↓</b> 0.12 | 3.50  | 4.50                  | <b>→</b> -0.95                             | -0.07                                       | 2.50                                            | 3.50                                            |
| Chau Doc            | 0.0                                  | 0.000                               | 1.15                                             | → 1.16          | <b>↓</b> 1.10  | <b>↓</b> 1.05 | <b>↓</b> 0.68 | ↓ 0.31         | ↓ 0.22        | 3.00  | 4.00                  | <b>→</b> -0.94                             | -0.06                                       | 1.90                                            | 2.90                                            |

#### WATER LEVEL FORECASTING DEFINITIONS

| <b>↑</b>      | Rising water level.                                                                                                                                                                                         |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $\rightarrow$ | Stable water level: stable water level is defined as a daily change of less than 10cm from Chaing Saen to Savannakhet; less than 5cm at Pakse and Stung Treng; and no more than 3cm from Kratie downstream. |
| 1             | Falling water level.                                                                                                                                                                                        |
| Х             | No data available.                                                                                                                                                                                          |
| Alarm stage   | Alarm stage is when the water level ranges between alarm and flood levels.                                                                                                                                  |
| Flood stage   | Flood stage is when the flood level exceeds. A flood level is determined by member countries.                                                                                                               |

#### NOTES

- On 09 June, the water levels at all monitoring stations remain within normal ranges, with no alarm or flood thresholds exceeded. The reverse flow into Tonle Sap Lake (TSL) commenced on 29 May 2025. As of now, the total accumulated reverse flow volume into the lake is estimated at 0.35 km<sup>3</sup>.
- In the next 5 days, particularly during 11-13 June, thunderstorm and isolated heavy to very heavy rainfall is expected to occur in some areas in the LMB including the upper and central part of Lao PDR, 3S Basin, and southwestern part of Cambodia.
- For 10-14 June, water levels at all stations are expected to rise, with the exception of Vientiane, Nongkhai, Paksane, and Khong Chiam where levels are anticipated to remain stable.

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#### 6.3 Flash Flood Information

With light to heavy rainfall for next week, flash floods might be detected in some areas in the LMB. And local heavy rain in a short period of time is possible with unpredictable short flash floods. Further detailed information on Flash Flood Guidance Information, as well as on its explanation, is available for download here.

#### 6.4 Drought forecast

From June to August 2025 (**Figure 13**), the total amount of rainfall in most areas of the LMB will be higher than the LTA by around 5 - 20 mm, except for some areas in the northeastern part of Thailand, the lowland areas of Cambodia, and the Mekong Delta. Overall, in the next 3 months, rainfall will be mainly concentrated in the central part of the LMB and higher than the LTA from 10 - 20mm.

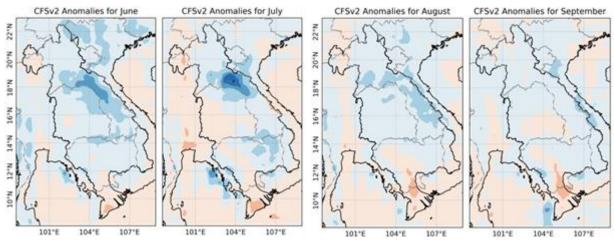


Figure 13 Seasonal forecast of rainfall anomalies for June to Augst 2025 based on CFSv2 (NCEP-NOAA)

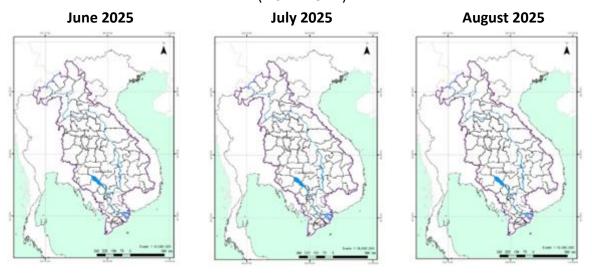


Figure 14. Monthly forecasts of combined drought indicators for June, July and Augst 2025

**Figure 14** indicates that the monthly drought forecast for the upcoming three months (June, July, and August 2025) use the Combined Drought Indicator (CDI). The forecast shows that no drought conditions are expected in over the LMB from June to August 2025.

### **7** Summary and Possible Implications

#### 7.1. Rainfall and its forecast

In the period of 03 - 09 June 2024, there has been light to heavy rainfall has been observed over the LMB. The moderate to heavy rainfall has been observed over the LMB in the north and central parts of Lao PDR, the 3S basin, and the northeastern and Southwestern part of Cambodia.

During 10 - 16 June 2024, the accumulated rainfall over the entire Lower Mekong Basin is distributed with light to heavy rain. However, from 11- 13 June, thunderstorms and heavy to very heavy rainfall are expected in some areas in the LMB including the northwestern and central part of Lao PDR, the northeastern part of Thailand; the northeastern and southwestern part of Cambodia.

#### 7.2. Water level and its forecast

At 22 key monitoring stations along the Mekong mainstream from 03 - 09 June 2025, water levels are normal, and the flow threshold (PMFM 6C) are under normal conditions. It is also the same condition for Tan Chau and Chau Doc monitoring stations, which are significantly influenced by sea tidal fluctuation.

In the period of 10 - 14 June 2025, Water levels are forecasted to be slightly increasing at all stations. However, the water levels are not expected to reach alarm and flood level thresholds. At Tan Chau and Chau Doc stations, the water levels are predicted to be also fluctuated, resulting from the influence of sea tidal patterns.

#### 7.3. Flash flood and its trends

With the predicted of rainfall for the coming week as mentioned earlier in part 2, the flash flood guidance from low to high level will likely be detected in some areas of the LMB.

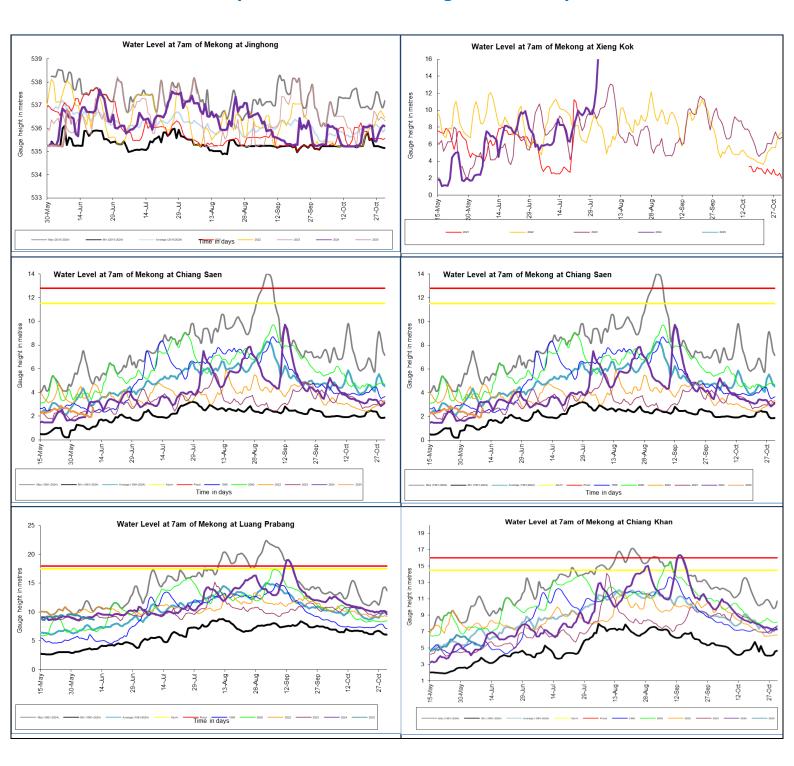
#### 7.4. Drought condition and its forecast

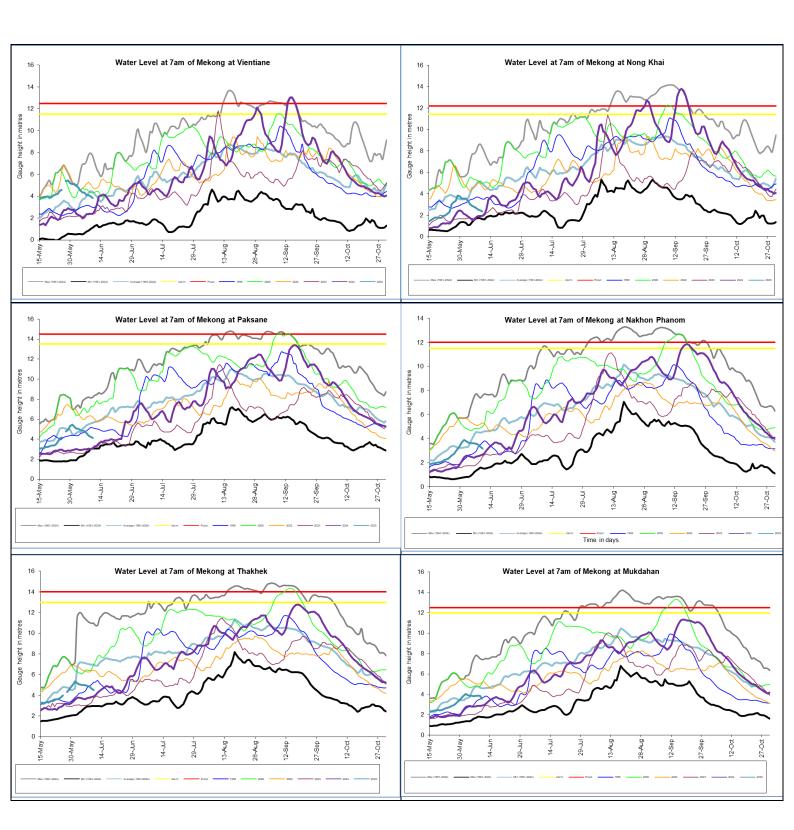
During 03 - 09 June 2025, the the LMB is experiencing normal to wet conditions. The monitored drought is caused primarily by meteorological indicator.

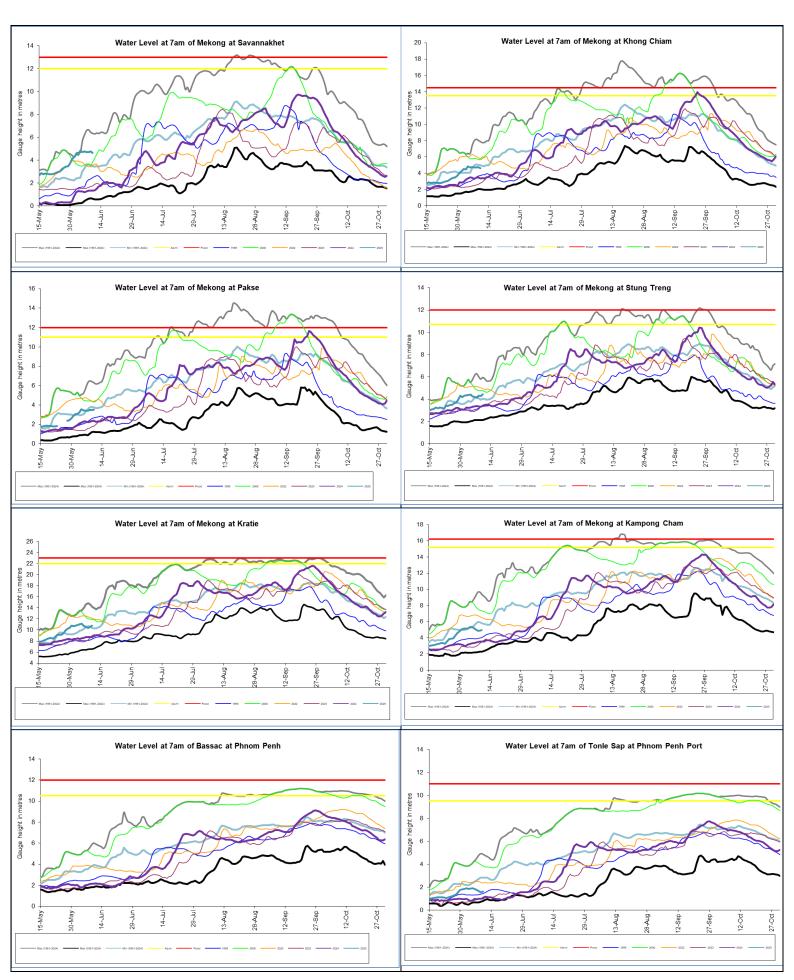
The next three-month from June to August 2025, the total amount of rainfall in most areas of the LMB will be higher than the LTA by around 5 - 20 mm, except for some areas in the northeastern part of Thailand, the lowland areas of Cambodia, and the Mekong Delta. Overall, in the next 3 months, rainfall will be mainly concentrated in the central part of the LMB and higher than the LTA from 10 - 20mm.

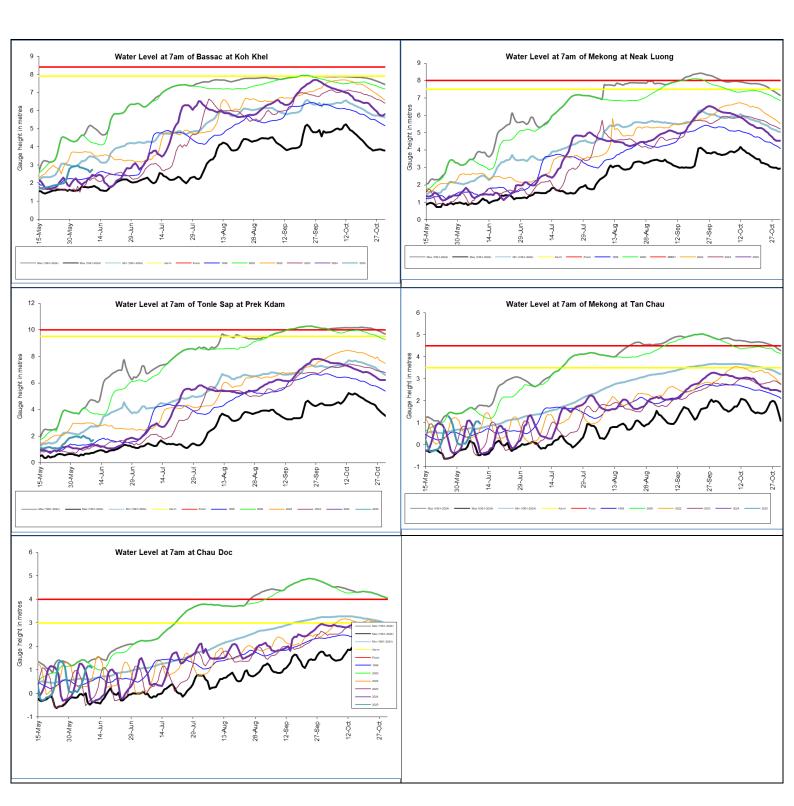
The forecast indicates that no drought conditions are expected in over the LMB from June to August 2025 using the Combined Drought Indicator (CDI)

## Annex A: Weekly water level monitoring at the 22 key stations









# Annex B: Tables for weekly updated water levels and rainfall at the Key Stations

Table A1: Weekly observed water levels

| 2025        | 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<br>(Bassac) | Phnom Penh<br>Port | Koh Khel | Neak Luong | Prek Kdam | Tan Chau | Chau Doc |
|-------------|----------|-------------|---------------|-------------|-----------|----------|---------|---------------|---------|----------|-------------|-------------|-------|-------------|--------|--------------|------------------------|--------------------|----------|------------|-----------|----------|----------|
| 03-06-2025  | 535.25   | 2.18        | 9.30          | 5.91        | 4.77      | 3.35     | 5.03    | 3.69          | 5.05    | 3.92     | 2.34        | 4.47        | 3.24  | 4.39        | 10.9   | 5.14         | 2.84                   | 1.85               | 2.98     | 2.00       | 1.94      | 0.06     | 0.06     |
| 04-06-2025  | 535.23   | 2.22        | 9.08          | 5.79        | 4.55      | 3.02     | 4.92    | 3.65          | 5.02    | 3.87     | 2.30        | 4.84        | 3.55  | 4.42        | 11.04  | 5.26         | 2.85                   | 1.86               | 2.86     | 2.00       | 1.88      | 0.21     | 0.23     |
| 05-06-2025  | 535.23   | 2.16        | 9.02          | 5.7         | 4.34      | 2.88     | 4.83    | 3.62          | 4.98    | 3.86     | 2.29        | 4.71        | 3.46  | 4.24        | 11.12  | 5.38         | 2.90                   | 1.90               | 2.84     | 2.02       | 2.02      | 0.37     | 0.39     |
| 06-06-2025  | 535.22   | 2.03        | 8.91          | 5.42        | 4.32      | 2.78     | 4.81    | 3.62          | 4.98    | 3.83     | 2.27        | 4.76        | 3.41  | 4.22        | 10.75  | 5.24         | 2.85                   | 1.85               | 2.80     | 2.02       | 1.94      | 0.58     | 0.61     |
| 07-06-2025  | 535.62   | 2.09        | 8.91          | 5.43        | 4.12      | 2.65     | 4.60    | 3.57          | 4.93    | 3.85     | 2.29        | 4.72        | 3.41  | 4.13        | 10.57  | 5.04         | 2.73                   | 1.75               | 2.76     | 1.98       | 1.85      | 0.88     | 1.03     |
| 08-06-2025  | 536.79   | 1.91        | 8.81          | 5.35        | 4.09      | 2.52     | 4.36    | 3.5           | 4.86    | 3.86     | 2.28        | 4.71        | 3.50  | 4.3         | 10.4   | 4.86         | 2.63                   | 1.65               | 2.72     | 1.76       | 1.82      | 1.05     | 1.15     |
| 09-06-2025  | 536.72   | 1.96        | 8.80          | 5.23        | 3.99      | 2.44     | 4.23    | 3.33          | 4.67    | 3.87     | 2.18        | 4.76        | 3.50  | 4.28        | 10.6   | 4.86         | 2.55                   | 1.55               | 2.60     | 1.68       | 1.61      | 1.07     | 1.16     |
| Flood level |          | 12.80       | 18.00         | 16.00       | 12.50     | 12.00    | 14.50   | 12.50         | 14.00   | 12.50    | 13.00       | 14.50       | 12.00 | 12.00       | 23.00  | 16.20        | 12.00                  | 11.00              | 7.90     | 8.00       | 10.00     | 4.50     | 4.00     |

Table A2: Weekly observed rainfall

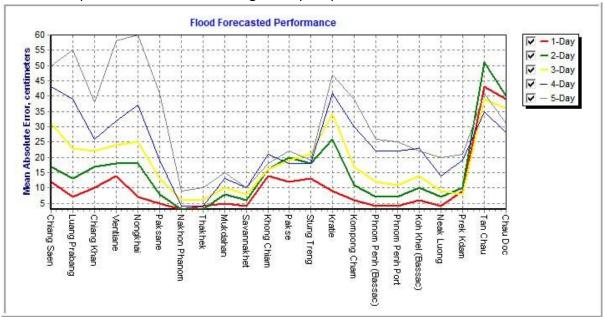
| 2025       | Jinghong | Chiang Saen | Luang Prabang | Chiang Khan | Vientiane | Nongkhai | Paksane | Nakhon Phanom | Thakhek | Mukdahan | Savannakhet | Khong Chiam | Pakse | Stung Treng | Kratie | Kompong Cham | Phnom Penh<br>(Bassac) | Phnom Penh<br>Port | Koh Khel | Neak Luong | Prek Kdam | Tan Chau | Chau Doc |
|------------|----------|-------------|---------------|-------------|-----------|----------|---------|---------------|---------|----------|-------------|-------------|-------|-------------|--------|--------------|------------------------|--------------------|----------|------------|-----------|----------|----------|
| 03-06-2025 | 1        | 1.3         | 0             | 0           | 4.2       | 6.2      | 0       | 7.4           | 0       | 0        | 6.2         | 0           | 49.4  | 23.5        | 0      | 0            | 0                      |                    | 0        | 10.8       | 0         | 5.7      | 13.8     |
| 04-06-2025 | 15.5     | 1.5         | 1.6           | 0           | 0         | 5.6      | 1.6     | 0             | 1.6     | 0        | 0           | 5.5         | 28    | 60          | 6.6    | 0            | 0                      |                    | 0        | 0          | 0         | 0.8      | 3        |
| 05-06-2025 | 0        | 0           | 0             | 0           | 0         | 0        | 22.4    | 0             | 22.4    | 0        | 0.5         | 3.5         | 0     | 7           | 0      | 4            | 0                      |                    | 0        | 30.6       | 0         | 0        | 0        |
| 06-06-2025 | 0        | 0           | 13.8          | 48.7        | 0         | 0        | 0       | 0.4           | 10      | 0        | 0           | 0           | 0     | 0           | 0      | 0            | 6.3                    |                    | 0        | 0          | 0         | 0        | 0        |
| 07-06-2025 | 4.5      | 0           | 2.2           | 0           | 3.4       | 0        | 12.4    | 4.3           | 0       | 0        | 56.4        | 0           | 1     | 0           | 0      | 0            | 23.5                   |                    | 0        | 2.1        | 24.3      | 0        | 0        |
| 08-06-2025 | 0        | 0           | 1.2           | 1           | 0         | 0        | 0.6     | 3.5           | 1.9     | 1.5      | 0           | 7.7         | 117   | 0           | 0      | 1            | 1.9                    |                    | 0        | 20.4       | 17.2      | 1        | 0        |
| 09-06-2025 | 0        | 10          | 2.8           | 3.4         | 12.6      | 3.6      | 8.4     | 1.1           | 0.7     | 0        | 0           | 1           | 0     | 6.5         | 0      | 0            | 0                      |                    | 0        | 0          | 0         | 0        | 0        |
| Sum        | 21.0     | 80.8        | 20.6          | 20.0        | 20.2      | 15.4     | 45.4    | 16.7          | 36.6    | 1.5      | 63.1        | 17.7        | 195.4 | 97.0        | 6.6    | 5.0          | 31.7                   | 0.0                | 0.0      | 63.9       | 41.5      | 7.5      | 16.8     |

## Annex C: Performance of the weekly flood forecasting

"Accuracy" here refers to the state where data recorded in the MRC's Mekong River Flood Forecasting System are cleaned and verified.

The adjustment of flood forecasting outcomes from the flood forecasting system requires flood forecasters to have extensive knowledge in hydrology and statistical modelling for estimating the relationships between stations upstream and downstream in the Mekong River Basin. Flood forecasting performance presented in the graph below shows the average flood forecasting accuracy at each key station along the Mekong mainstream from 03 to 09 June 2025.

The forecasting values from 03 to 09 June 2025 show that the overall accuracy is fair for a four-day to five-day forecast in lead time (less than 250 cm) for all of the stations from the upper to the lower parts of the Mekong River with combine information of rainfall and reservoirs' operation in this area during the report period.



<u>Note:</u> The higher percentage of flood forecasting accuracy is due to several key factors as follows:

- Missing rainfall in Cambodia (DOM) data and data input are not sufficient to be used for inputting into the flood forecasting model system.
- Chiang Saen station is influencing by hydropower upstream operation from China.
- Luang Prabang to Chiang Khan and Paksane to Stung Treng to Kratie have been influenced by hydropower operations upstream, tributaries inflows.
- The influence of heavy rainfall caused by storms and hydropower operations from upstream, tributaries inflows and the lower part of the Mekong floodplain, including the 3S (Stung Treng and Kratie).
- Fluctuations of the water levels at Tan Chau and Chau Doc stations were due to daily tidal effects of the sea in the Mekong Delta.
- Satellite rainfall data were not representative of the actual rainfall at ground stations in some areas of the Mekong region.



## Mekong River Commission Secretariat