

**Mekong River Commission** 

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

# 30 April – 06 May 2024

Prepared by The Regional Flood and Drought Management Centre 07 April 2024

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# Content

Contenti
List of Figuresii
List of Tablesiii
Key Messagesiv
1 Introduction1
2 General Weather Patterns2
3. Rainfall and Water Level Monitoring
3.1. Rainfall monitoring
3.2. Water level monitoring
4. Flash Flood in the Lower Mekong Basin9
5. Drought Monitoring in the Lower Mekong Basin9
5.2. Weekly drought monitoring from April 30 to May 69
6 Weather and Water Level Forecast and Flash Flood information12
6.1 Rainfall forecast
6.2 Water level forecast
6.3 Flash Flood Information
6.4 Drought forecast
7 Summary and Possible Implications17
7.1. Rainfall and its forecast 17
7.2. Water level and its forecast 17
7.3. Flash flood and its trends
7.4. Drought condition and its forecast
Annex A: Weekly water level monitoring at the 22 key stations
Annex B: Tables for weekly updated water levels and rainfall at the Key Stations25

# List of Figures

Figure 1: Weather conditions over the LMB2
Figure 2: Outlook of wet and dry conditions over the Asian countries by ASMC
Figure 3: No tropical storm risk observed on 06 May 20243
Figure 4: Weekly rainfall distribution over the LMB during 30 April – 06 May 20244
Figure 5: The key stations along LMB for river flood forecasting6
Figure 6. Water level at the Jinghong hydrological station up to 06 May 20247
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
Figure 9: Weekly standardised precipitation index from Apr 30 to May 610
Figure 10: Weekly Index of Soil Water Fraction from April 30 to May 611
Figure 11: Weekly Combined Drought Index from April 30-May 612
Figure 12: Accumulated rainfall forecast from CHIRP-GFS (07 – 13 May 2024)13
Figure 13. Monthly forecast of rainfall from NMME for May, June, July, and August 202416

# **List of Tables**

Table 1. The monthly change in the flow volume of Tonle Sap Lake.	9
Table 2. Weekly River Monitoring Bulletin.	15

# **Key Messages**

#### Key messages for this weekly report are presented below.

#### **Rainfall monitoring and forecast**

- In the period of 30 April 06 May 2024, there has been light to moderate rainfall has been only observed in the north-eastern part of the LMB including entire Lao PDR, eastern part of Cambodia and 3S basins.
- During 07 to 13 May 2024, the accumulated rainfall over the entire Lower Mekong Basin is distributed with light to moderate rain. The moderate rainfall will be expected to occur in western part of Cambodia.

#### Water level monitoring and forecast

- At 22 key monitoring stations along the Mekong mainstream from 30 April 06 May 2024, water levels are below the long-term averages (LTAs) except for water level at Luang Prabang, Stung Treng, Kratie, Tan Chau and Chau Doc monitoring stations. However, the 6 monitoring stations remain in normal condition with respect to the flow threshold (PMFM Thresholds). 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 07 13 May 2024, Water levels are forecasted to be increasing at stations from upper part at Chiang Saen to Savannakhet and decreasing from Khong Chiam to Kampong Cham stations. Moving down to lower part from Phnom Penh (Bassac) to Prek Kdam, water level will be slightly rise except for Neak Luong station. At Tan Chau and Chau Doc stations, the water levels are predicted to be also fluctuated, resulting from the influence of sea tidal patterns. Water levels at most of the stations are expected to be below their long-term averages (LTAs) except for Luang Prabang station.

#### Drought condition and forecast

- During 30 April-6 May 2024, the LMB was facing from moderate to exceptional drought mainly in the middle and southern parts. Southern Thailand and northern and northwestern Cambodia were the most extreme drought areas during the monitoring week.
- The next four-month forecast of rainfall indicates that much below average rainfall is predicted for the whole LMB area in May. North-eastern Cambodia, middle and southern Laos and eastern Thailand are likely receiving below average rainfall in June and July, while Cambodia is forecasted to be the wettest area which is likely receiving above average rainfall in June and July. The forecast also indicates that the LMB might receive less than average rain specifically in the middle and south-eastern regions and southern Laos is likely the driest area in the region.

# 1 Introduction

This Weekly Dry Season Situation Report presents a preliminary analysis of the weekly hydrological situation in the Lower Mekong River Basin (LMB) for **30 April – 06 May 2024**. 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: <u>http://ffw.mrcmekong.org/ffg.php</u>

# 2 General Weather Patterns

During the last week, the Lower Mekong Basin influenced by the heat low-pressure. There has been light rainfall in some areas in the northern and southern parts of Lao PDR; the central highland of Viet Nam. The remaining areas in the Lower Mekong Basin have not received any rainfall.

**Figure 1** presents mean sea level pressure over the region. It is forecasted that the upper parts of Lower Mekong Basin will be influenced by a heat low-pressure system from 09 April to 13 May. Therefore, in the upcoming seven days, upper parts of the Lower Mekong Basin are expected to experience little to light to moderate rainfall.

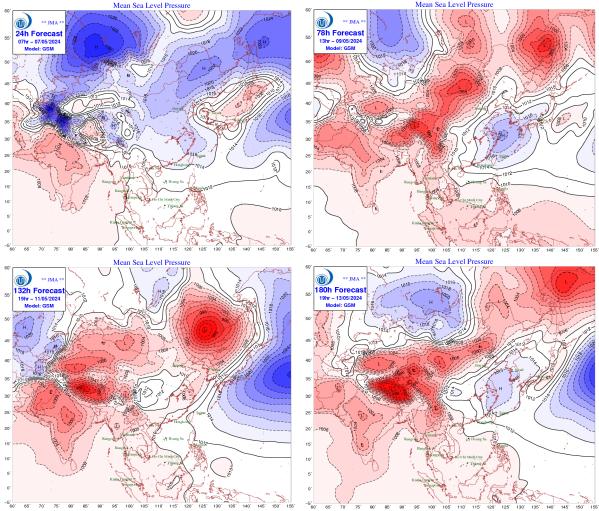


Figure 1: Weather conditions over the LMB

According to the ASEAN Specialised Meteorological Centre (ASMC, <u>http://asmc.asean.org</u> <u>/home/</u>), the subseasonal weather outlook (29 April – 12 May 2024) indicates that the drier condition is predicted to occur almost entire LMB, particularly in Thailand, and Cambodia. Moreover, the warmer conditions are predicted to occur in the entire LMB. **Figure 2** shows the outlook of weather condition from 29 April to 12 May 2024 in Southeast Asia based on results from the NCEP model (National Centres for Environmental Prediction).

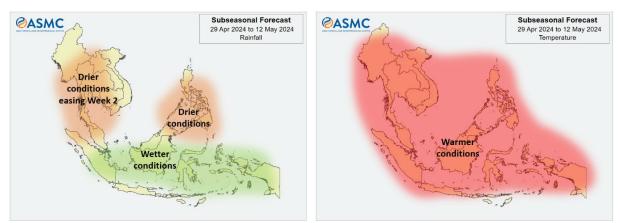


Figure 2: Outlook of wet and dry conditions over the Asian countries by ASMC.

Based on the tropical storm risk (TS) (<u>https://www.tropicalstormrisk.com/</u>), there is no active NW pacific system as of 06 May 2024 as displayed in **Figure 3**.

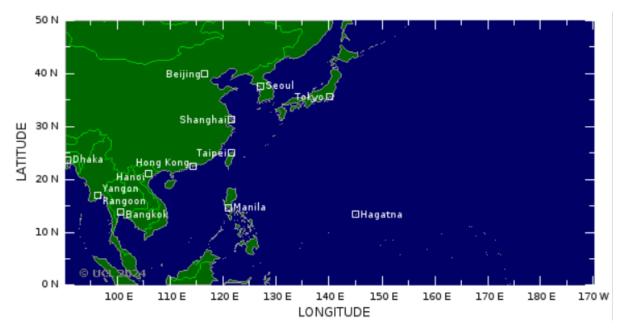


Figure 3: No tropical storm risk observed on 06 May 2024

# 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 30 April to 06 May 2024 (**Figure 4**). The light to moderate rainfall has been only observed in the north-eastern part of the LMB including entire Lao PDR, eastern part of Cambodia and 3S basins.

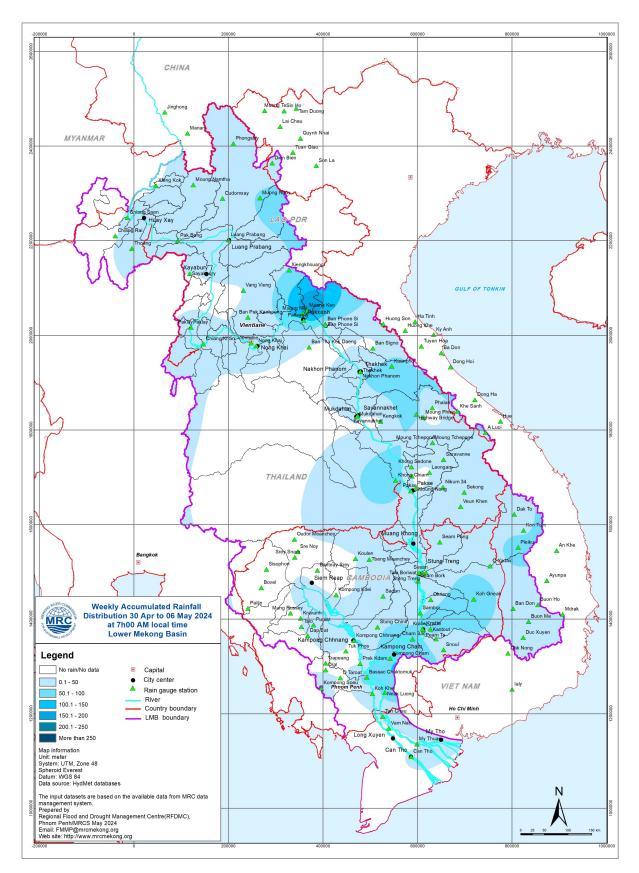


Figure 4: Weekly rainfall distribution over the LMB during 30 April – 06 May 2024

## 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: <u>http://ffw.mrcmekong.org/overview.php</u>.

During 30 April – 06 May 2024, the observed water level (WL) at Jinghong hydrological station<sup>1</sup>, was almost constant and ranges between 535.25 m and 535.41 m, which are corresponding to the outflow between 840.00 m<sup>3</sup>/s to 944.00 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 1.50 m to 1.54 m. At the same period, the water level in Luang Prabang station also slightly decreased with an approximate value of 0.60 m from 8.96 m to 8.36 m as compared to the previous week.

During the same period, the water levels observed at upper parts of the basin from Chiang Khan and Vientiane stations, water levels have been slightly decreasing from 3.29 m to 2.89m, and 1.28 m to 1.24 m, respectively. However, water levels at Nong Khai and Paksane has slightly increased from 0.69 m to 0.83 m and 2.33 m to 2.73 m, respectively. Moving down at Nakhon Phanom, Thakhek, Mukdahan, Savannakhet, Khong Chiam, Pakse, Stung Treng, Kratie, and Kampong Cham, water levels are decreasing from 1.51 m to 1.50 m, 2.86 m to 2.82 m, 1.91 m to 1.87 m, 0.98 m to 0.92 m, 2.33 m to 2.20 m, 1.30 m to 1.18 m, 2.68 m to 2.64 m, 7.26 m to 7.19 m, and 2.62 m to 2.4 m, respectively. Moreover, in floodplain areas, water levels at Phnom Penh (Bassac), Phnom Penh Port, Koh Khel, Prek Kdam, also slightly decreased ranging from 1.65 m to 1.43 m, 0.55 m to 0.52 m, 1.90 m to 1.50 m, 0.93 m to 0.72 m, respectively. However, only the water level at Neak Luong has risen from 1.12 m to 1.49 m.

Similar to the previous week, the water levels from 30 April to 06 May 2024 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 -0.53 m and 0.97 m, while at the Chau Doc station, they ranged from -0.44 m to 1.19 m.

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

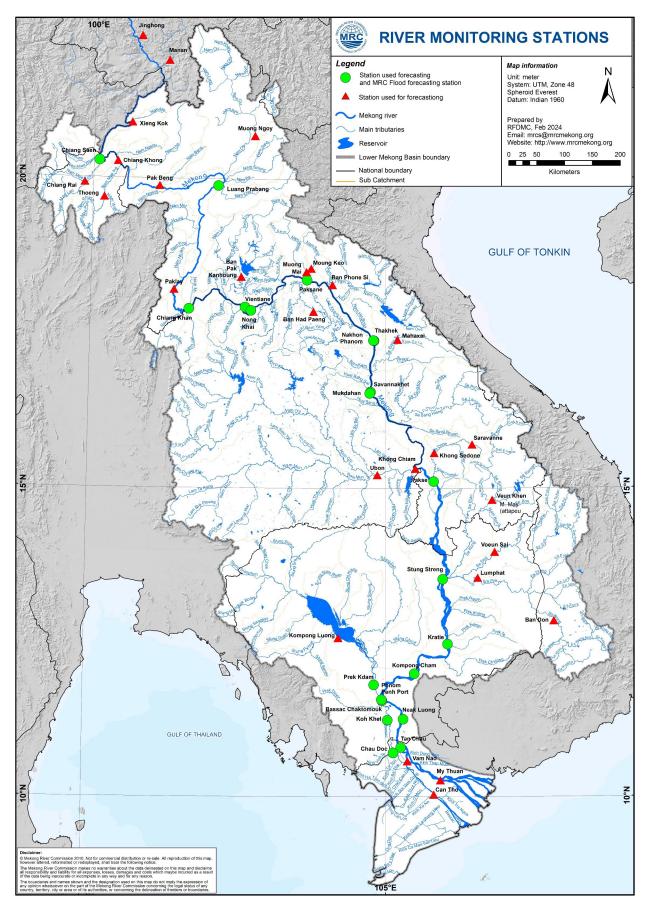


Figure 5: The key stations along LMB for river flood forecasting

The water levels in key monitoring stations on 06 May 2024 are below their long-term averages (LTAs) except for the Luang Prabang, Stung Treng, Kratie, Tan Chau and Chau Doc stations. 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**.

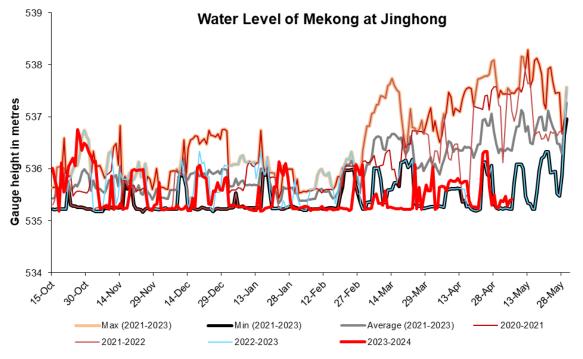


Figure 6. Water level at the Jinghong hydrological station up to 06 May 2024.

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 outflow of the Tonle Sap Lake took place since 28 September 2023.

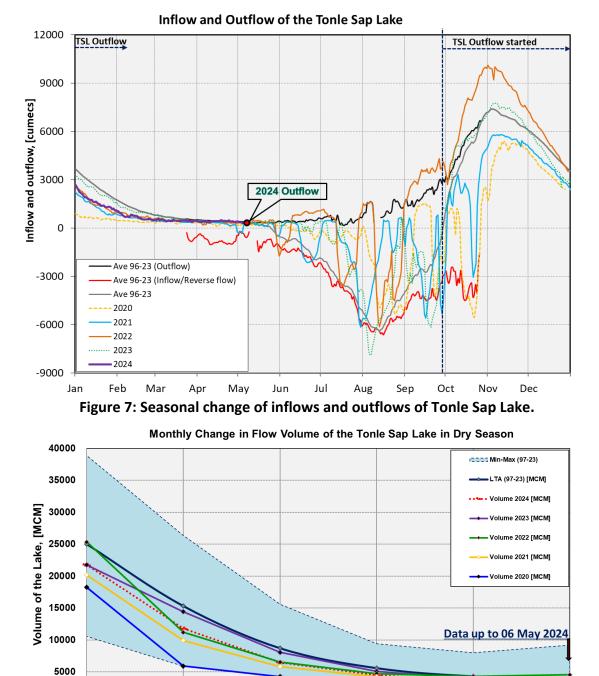
The outflow flow is calculated based on a formula of rating-curves using by difference of water levels at Kompong Luong and Phnom Penh Port stations for slop and Prek Kdam as cross-section of the Lake. The formula of flow is as follows:

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

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 (1997-2023) are illustrated in **Figure 8**. Up to 06 May 2024, it was observed that the main outflow to Tonle Sap Lake decreased due to no rainfall and less inflows from upstream (**Figure 8**). This decreased outflow of Tonle Sap Lake was most likely caused by low inflows from its tributaries.

The seasonal changes in monthly flow volumes up to 06 May 2024 for the TSL compared with that in 2020, 2021, 2022, 2023 and their LTAs, and the fluctuation levels (1997–2023) are presented in **Table 8**. The mean monthly water volume of the Tonle Sap Lake in April 2024 is lower than its LTA (about 82.48 %), 2023 and 2022 but higher than that in 2019, 2020, and 2021 during the same period **(Figure 8 and Table 1)**.





Mar

Apr

Feb

0 Dec

Jan

8

Мау

Month	LTA (97-22) [MCM]	Max Volume [MCM]	Min Volume [MCM]	Volume 2019 [MCM]	Volume 2020 [MCM]	Volume 2021 [MCM]	Volume 2022 [MCM]	Volume 2023 [MCM]	Volume 2024 [MCM]	Volume in 2024 [%], compared with its LTA
Jan	15322.86	26357.53	5906.80	10285.31	5906.80	9923.80	11214.32	14422.11	11824.86	77.17
Feb	8723.39	15596.22	4198.60	6019.30	4264.19	5832.97	6558.79	8069.29	6505.88	74.58
Mar	5602.68	9438.24	3347.07	4354.62	3553.99	4264.88	4736.52	5080.64	4488.23	80.11
Apr	4327.36	8009.14	2866.91	3667.47	2992.61	3556.68	4288.31	3884.16	3569.01	82.48
May	4027.82	9176.93	2417.81	3266.43	2594.92	3240.78	4556.83	3438.66	3502.17	86.95
Jun	5699.50	13635.01	2468.70	3517.06	2641.88	3798.29	7489.04	3689.97		
Jul	11188.79	28599.56	2925.86	4001.99	2925.86	5346.73	9703.79	9953.41		
Aug	24070.98	39015.12	4433.46	7622.71	5941.07	10547.80	19554.70	13694.57		
Sep	38787.47	65632.35	12105.31	24194.19	12105.31	16382.34	32860.34	23550.60		
Oct	46562.09	73757.23	19705.50	30358.38	20799.13	27318.21	48199.12	37141.40		
Nov	37739.30	60367.33	18534.61	19112.65	27546.80	28982.93	39452.53	33929.52		
Dec	25009.52	38888.95	10563.49	10577.29	18251.65	20170.76	25346.65	21757.70		
	Critical site	uation: low	er than lon	g-term min	imum valu	es (LTMIN)	)			
	Normal co	ndition: wit	hin the ran	ige of long-	-term min (	LTMIN) an	d max (LTN	/IAX) value	S	
	Low volum	ne situation	: lower tha	n long-tern	n average	(LTA)				
Unit: Millic	on Cubic M	eter (1 MC	M= 0.001 3	(m						

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

**Remarks:** the volume of Tonle Sap Lake in 2024 is updated untill 06 May 2024.

# 4. Flash Flood in the Lower Mekong Basin

During the weekly monitoring period from 30 April - 06 May, the LMB received light rain in some areas.

According to the MRC-Flash Flood Guidance System (MRC-FFGS) and analysis, flash flood events were not detected during the reporting period over the LMB.

# 5. Drought Monitoring in the Lower Mekong Basin

## 5.2. Weekly drought monitoring from April 30 to May 6

Drought monitoring data for 2024 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 drought conditions of the LMB from 30 April to 6 May 2024, as shown in Figure

**9**, were mainly severely and extremely dry over the middle and southern parts. All provinces of Cambodia, middle and southern Laos, all provinces of Thailand and most provinces of Viet Nam were seriously impacted.

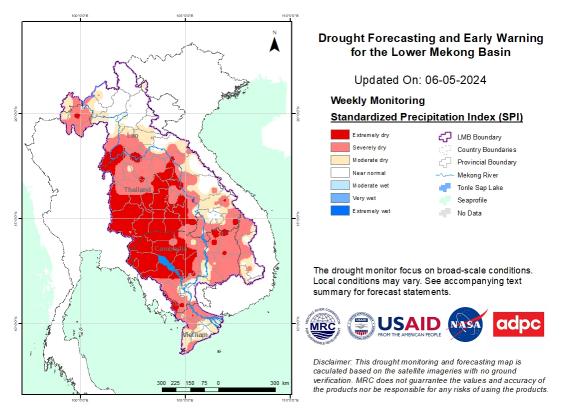


Figure 9: Weekly standardised precipitation index from Apr 30 to May 6.

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

Soil moisture conditions from 30 April to 6 May 2024, as displayed in **Figure 10**, were severely dry mainly in the south due to absence of rainfall. The conditions were drier than those of last week (Apr 22-29)

**Note:** The index of soil water fraction presents the current soil water fraction conditions compared with normal month; therefore, it normally shows extremely dry during dry season which is completely different from SPI that is standardized to its specific month of the years. However, this does not mean that the areas are threatened by agricultural drought as generally during transition period of wet and dry seasons and dry season only the irrigated areas are used for agricultural plantation.

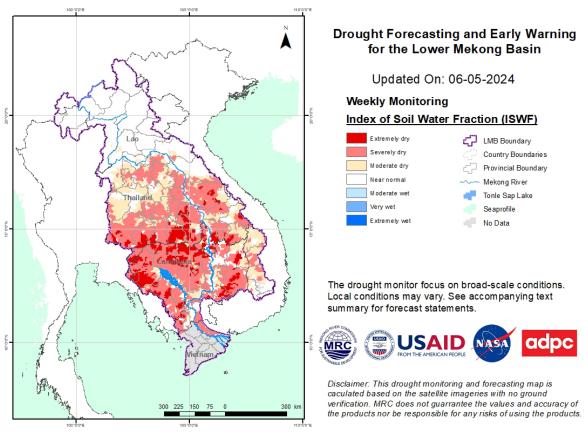
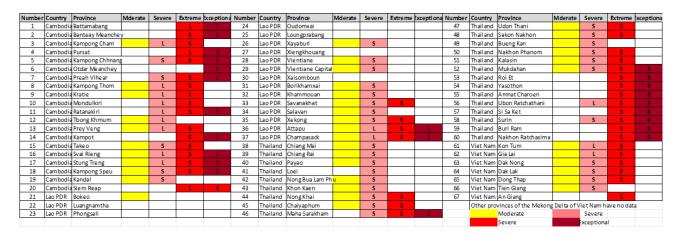


Figure 10: Weekly Index of Soil Water Fraction from April 30 to May 6.

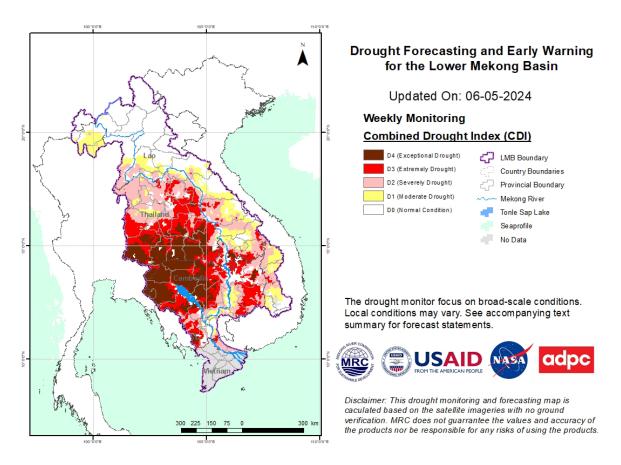
#### Weekly Combined Drought Index (CDI)

With the dry conditions of soil moisture, the combined drought indicator (displayed in **Figure 11** reveals that during 30 April-6 May 2024, the LMB was facing from moderate to exceptional drought mainly in the middle and southern parts. Southern Thailand and northern and north-western Cambodia were the most extreme drought areas during the monitoring week.

The impacted areas are listed below:



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





More information on Drought Forecasting and Early Warning (DFEW) as well as the explanation is available here: <u>http://droughtforecast.mrcmekong.org/templates/view/our-product</u>. 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 <u>6.4</u> of this report.

# 6 Weather and Water Level Forecast and Flash Flood information

#### 6.1 Rainfall forecast

During 07 to 13 May 2024, the accumulated rainfall over the entire Lower Mekong Basin is distributed with light to moderate rain based on CHIRPS-GFS (**Figure 12**). The moderate rainfall will be expected to occur in western part of Cambodia.

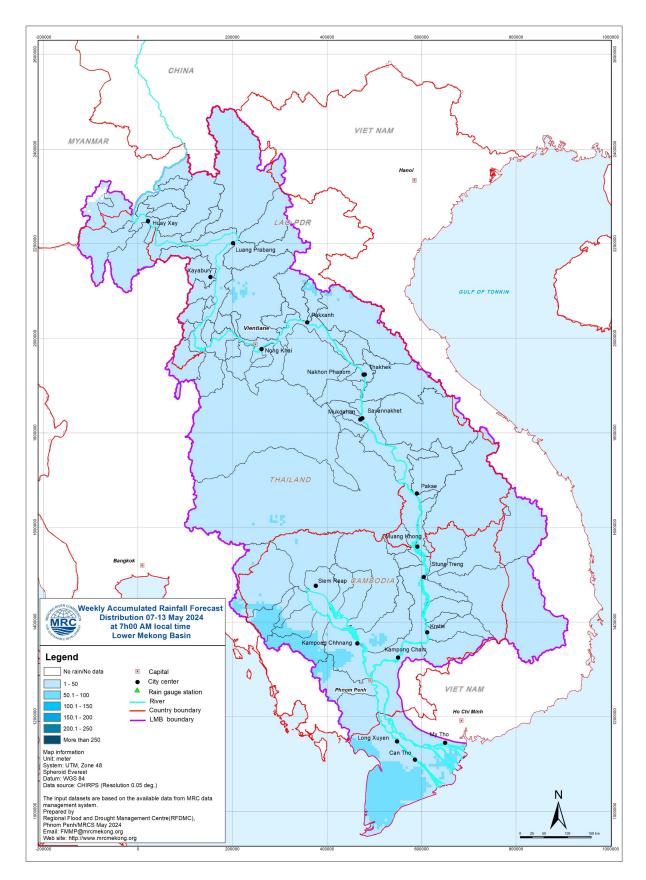


Figure 12: Accumulated rainfall forecast from CHIRP-GFS (07 – 13 May 2024)

### 6.2 Water level forecast

In Chiang Saen monitoring station, the water level is expected to be fluctuated over the forecasting period of 06 – 13 May 2024. However, it will slightly increase from 1.55 m to 1.91 m. The water level in Luang Prabang stations affected by backwater is likely slightly increasing from 8.36 m to 8.49 m.

Along the Mekong mainstream, the water levels at upper stretch at Chiang Khan, Vientiane, Nongkhai, Paksane, Nakhon Phanom, Thakhek, Mukdahan, and Savannakhet, water levels will slightly rose of approximately 0.01 m, 0.01 m, 0.03 m, 0.13 m, 0.05 m, 0.03 m, 0.01 m, and 0.03 m, respectively. Moreover, water levels at Khong Chiam, Pakse, Stung Treng, Kratie and Kampong Cham stations, water levels will slightly drop of approximately -0.02 m, -0.10 m, -0.02 m, -0.14 m, -0.08, and -0.08 m, respectively. However, moving down to Phnom Penh (Bassac), Phnom Penh Port, Koh Khel, and Prek Kdam, water levels are predicted to be increasing approximately 0.07 m, 0.07 m, 0.20 m, and 0.09 m, respectively. Only water level at Neak Luong will slightly decrease of approximately -0.17 m.

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 0.95 to -0.35 m and 1.12 to -0.45 m, respectively, following daily tidal effects from the sea.

The water levels at key stations are forecasted to be below their LTAs except for Luang Prabang station from 07 to 13 May 2024.

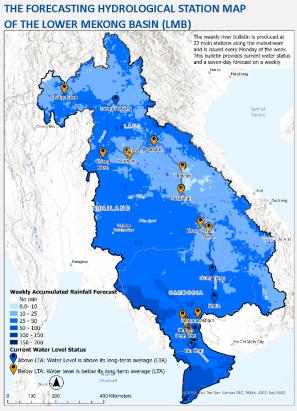
The weekly River Monitoring Bulletin and forecasting issued on 06 May 2024 can be found in **Table 2.** Results of the weekly river monitoring and forecasting bulletin are also available at <a href="http://ffw.mrcmekong.org/bulletin.php">http://ffw.mrcmekong.org/bulletin.php</a>



### MEKONG RIVER MONITORING AND FORECASTING BULLETIN

#### Monitoring on 06 May 2024 and weekly forecasting from 07 to 13 May 2024

Highlights: Water levels at most of stations are below their long-term average except for Luang Prabang, Stung Treng, Kratie, Neak Luong, Tan Chau and Chau Doc stations. However, water levels are in normal conditions based on the PMFM (Article 6A).



Monitoring Station	Rainfall (mm)	Zero gauge amsi (m)	Water level againts zero gauge (m)	Current Status	Flow Threshold (DMEMEMER)
Jinghong	0.0		535.41		
Chiang Saen	0.5	357.110	1.54	Bellow LTA	Normal
Luang Prabang**	0.0	267.195	8.36	Above LTA	-
Chiang Khan	0.0	194.118	2.89	Below LTA	-
Vientiane	0.0	158.040	1.24	Below LTA	Normal
Nongkhai	1.6	153.648	0.83	Below LTA	-
Paksane	35.0	142.125	2.73	Below LTA	-
Nakhon Phanom	7.2	130.961	1.50	Below LTA	-
Thakhek	10.3	129.629	2.82	Below LTA	-
Mukdahan	0.0	124.219	1.87	Below LTA	-
Savannakhet	0.0	125.410	0.92	Below LTA	-
Khong Chiam	0.0	89.030	2.20	Below LTA	Normal
Pakse	0.0	86.490	1.18	Below LTA	Normal
Stung Treng	0.0	36.790	2.64	Above LTA	Normal
Kratie	0.0	-1.080	7.19	Above LTA	Normal
Kompong Cham	1.0	-0.930	2.40	Below LTA	-
Phnom Penh (Bassac)	0.0	-1.020	1.43	Below LTA	-
Phnom Penh Port	nr	0.000	0.52	Below LTA	-
Koh Khel	0.0	-1.000	1.50	Below LTA	-
Neak Luong	0.0	-0.330	1.49	Above LTA	-
Prek Kdam	0.0	0.080	0.72	Below LTA	-
Tan Chau	0.0	0.000	0.97	Above LTA	-
Chau Doc	nr	0.000	1.19	Above LTA	-

#### WEEKLY WATER LEVEL FORECAST

50 - 100 L Bridge L State Stat	Forecasting Station		Fore	atus	pua					
100 - 150 150 - 200	i or cousting station	07-May	08-May	09-May	10-May	11-May	12-May	13-May	Sta	Ĕ
Current Water Level Status	Jinghong	-	-	-	-	-	-	-	-	-
Above LTA: Water Level is above its long-term average (LTA)	Chiang Saen	1.45	1.44	1.56	1.74	1.89	1.95	1.91	Below LTA	Increasing
Below LTA: Water level is below its long-term average (LTA)	💶 Luang Prabang	8.32	8.33	8.29	8.28	8.33	8.41	8.49	Above LTA	Increasing
Gail of Thailand	Chiang Khan	2.79	2.62	2.68	2.74	2.82	2.86	2.90	Below LTA	Increasing
Stude Care Strate Strat	Vientiane	1.18	1.20	1.18	1.28	1.28	1.23	1.25	Below LTA	Increasing
0 100 200 400 Kilometers	Nongkhai	0.79	0.89	0.84	0.91	0.94	0.86	0.86	Below LTA	Increasing
	Paksane	2.70	2.74	2.87	2.88	2.96	2.94	2.86	Below LTA	Increasing
NOTES	Nakhon Phanom	1.54	1.58	1.62	1.62	1.55	1.53	1.55	Below LTA	Increasing
Light to moderate accumulated rainfall is forecasted to be distributed for	Thakhek	2.87	2.91	2.94	2.94	2.87	2.85	2.85	Below LTA	Increasing
entire Lower Mekong Basin (LMB). Moderate rainfall is expected to occur in	Mukdahan	1.75	1.73	1.70	1.74	1.76	1.82	1.88	Below LTA	Increasing
South-western parts of LMB including Thailand, Cambodia, and Mekong	Savannakhet	0.83	0.80	0.85	0.88	0.92	0.93	0.95	Below LTA	Increasing
Delta during 0 <b>7</b> -13 May 2024.	Khong Chiam	2.15	2.13	2.10	2.06	2.12	2.15	2.18	Below LTA	Decreasing
	Pakse	1.18	1.14	1.10	1.08	1.06	1.06	1.08	Below LTA	Decreasing
Water levels are forecasted to be slightly increasing at stations from Chiang	Stung Treng	2.66	2.69	2.69	2.64	2.58	2.60	2.62	Below LTA	Decreasing
Saen to Savannakhet and decreasing from Khong Chiam to Kampong Cham.	Kratie	7.17	7.19	7.22	7.19	7.09	6.98	7.05	Below LTA	Decreasing
	Kompong Cham	2.36	2.35	2.37	2.39	2.37	2.30	2.32	Below LTA	Decreasing
Moving down, water level will be slightly rise except for Neak Luong station	Phnom Penh (Bassac)	1.42	1.40	1.39	1.39	1.42	1.45	1.50	Below LTA	Increasing
from 0 <b>7</b> to 13 May 2024. However, water levels at Tan Chau and Chau Doc	Phnom Penh Port	0.53	0.51	0.50	0.50	0.53	0.55	0.59	Below LTA	Increasing
are forecasted to be fluctuated due to sea tidal influence.	Koh Khel	1.40	1.42	1.45	1.52	1.56	1.62	1.70	Below LTA	Increasing
	Neak Luong	1.68	1.55	1.48	1.45	1.40	1.35	1.32	Below LTA	Decreasing
Water levels at most of the stations are expected to be below their long-term	Prek Kdam	0.69	0.67	0.66	0.66	0.68	0.75	0.81	Below LTA	Increasing
averages (LTAs) except for Luang Prabang from 07 to 13 May 2024.	📩 Tan Chau	0.95	0.90	0.53	0.35	0.12	-0.12	-0.35	Below LTA	-
,										

	averages (LIAS) exception Luang Frabalig norm of to 15 May 2024.		Torr Grad	0.55	0.50	0.55	0.00	0.11	0.44	0.55	Derest chit	
			📩 Chau Doc	1.12	1.02	0.72	0.16	-0.01	-0.35	-0.45	Below LTA	
1	MRC Secretariat, Vientiane, Lao PDR   E: mrcs@mrcmekong.org   T: +856 21 263 263 MRC Regional Flood and Drought Management Centre, Phnom Penh, Cambodia   E: floodforecast@mrcmekong.org   T: +855 23 42 5 3 53	http://ffw.n http://ffw.n	.mrcmekong.org/ hrcmekong.org/bulletin_dry.p hrcmekong.org/report_dry.pl m.mrcmekong.org/				he MRC	rmation i Member	Countri	es so tha	ervice to the go at it may be use recast and war	

# 6.3 Flash Flood Information

Flash flood events are not likely to happen in the LMB next week. However, local heavy rain in a short period of time might still be possible with unexpected short flash floods. During the dry season if extreme weather occurs, the information on flash flood guidance for the next one, three, and six hours is updated at <u>http://ffw.mrcmekong.org/ffg.php</u>.

Further detailed information on Flash Flood Information Warning, as well as on its explanation, is available for download <u>here</u>.

# 6.4 Drought forecast

There are several climate-prediction models with different scenarios in the upcoming months. The MRC's DFEWS adopts the global scale of North America Multi-Model Ensemble (NMME) that predicts average rainfall in daily average for the next coming three months.

**Figure 13** below shows the average daily rainfall forecast from May to August 2024 over the LMB area.

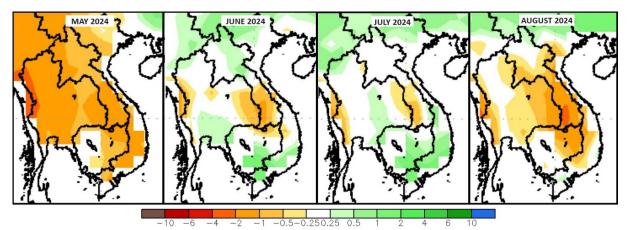


Figure 13. Monthly forecast of rainfall from NMME for May, June, July, and August 2024.

**Figure 13** indicates that much below average rainfall is predicted for the whole LMB area in May. North-eastern Cambodia, middle and southern Laos and eastern Thailand are likely receiving below average rainfall in June and July, while Cambodia is forecasted to be the wettest area which is likely receiving above average rainfall in June and July. The forecast also indicates that the LMB might receive less than average rain specifically in the middle and south-eastern regions and southern Laos is likely the driest area in the region.

# 7 Summary and Possible Implications

# 7.1. Rainfall and its forecast

In the period of 30 April – 06 May 2024, there has been light to moderate rainfall has been only observed in the north-eastern part of the LMB including entire Lao PDR, eastern part of Cambodia and 3S basins.

During 07 to 13 May 2024, the accumulated rainfall over the entire Lower Mekong Basin is distributed with light to moderate rain. The moderate rainfall will be expected to occur in western part of Cambodia.

# 7.2. Water level and its forecast

At 22 key monitoring stations along the Mekong mainstream from 30 April – 06 May 2024, water levels are below the long-term averages (LTAs) except for water level at Luang Prabang, Stung Treng, Kratie, Tan Chau and Chau Doc monitoring stations. However, the 6 monitoring stations remain in normal condition with respect to the flow threshold (PMFM Thresholds). 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 07 – 13 May 2024, Water levels are forecasted to be increasing at stations from upper part at Chiang Saen to Savannakhet and decreasing from Khong Chiam to Kampong Cham stations. Moving down to lower part from Phnom Penh (Bassac) to Prek Kdam, water level will be slightly rise except for Neak Luong station. At Tan Chau and Chau Doc stations, the water levels are predicted to be also fluctuated, resulting from the influence of sea tidal patterns. Water levels at most of the stations are expected to be below their long-term averages (LTAs) except for Luang Prabang station.

## 7.3. Flash flood and its trends

With the predicted of rainfall for the coming week as mentioned earlier in <u>section 6.1</u>, major flash floods are not likely to happen in the LMB.

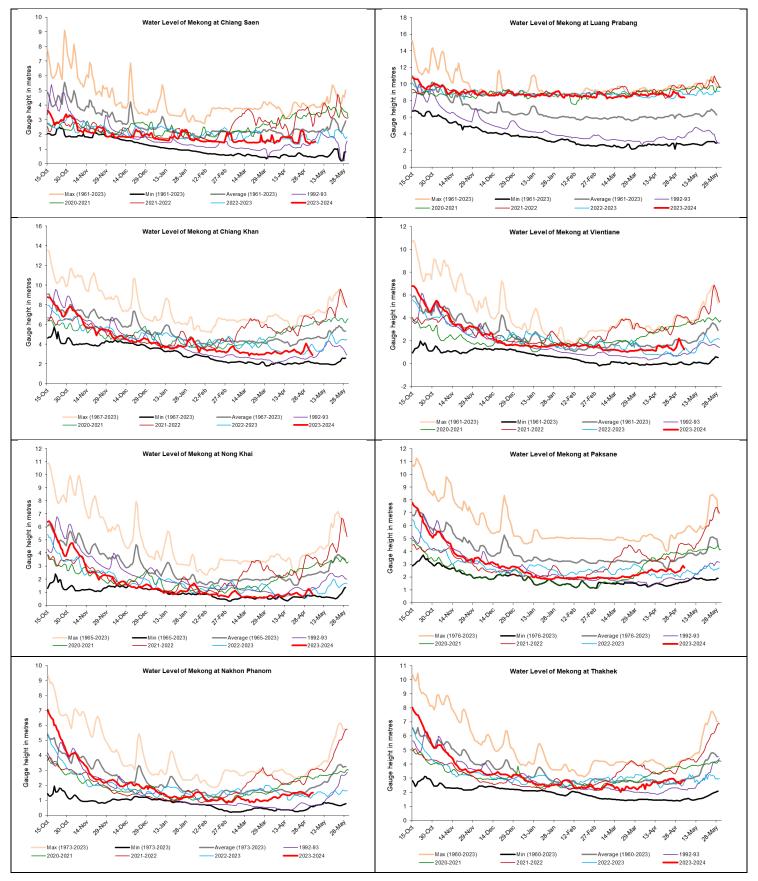
## 7.4. Drought condition and its forecast

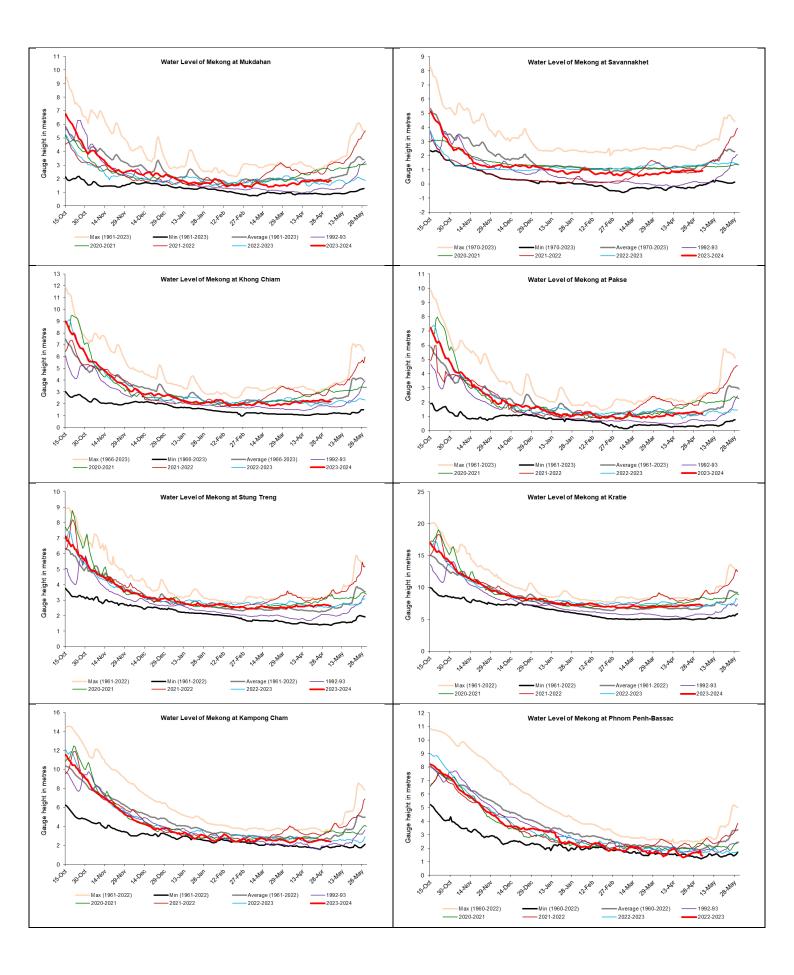
During 30 April-6 May 2024, the LMB was facing from moderate to exceptional drought mainly in the middle and southern parts. Southern Thailand and northern and north-western Cambodia were the most extreme drought areas during the monitoring week.

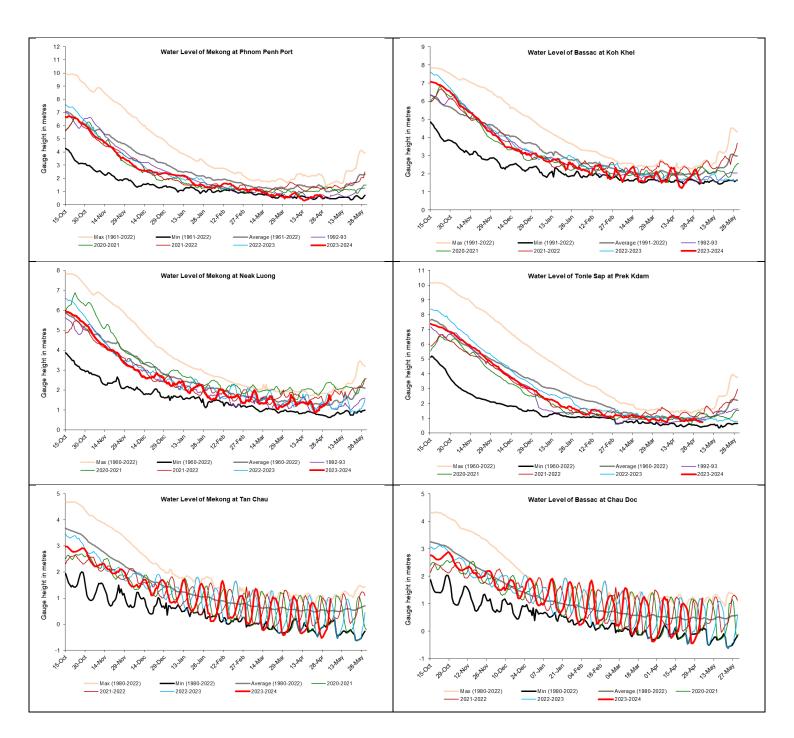
The next four-month forecast of rainfall indicates that much below average rainfall is predicted for the whole LMB area in May. North-eastern Cambodia, middle and southern Laos and eastern Thailand are likely receiving below average rainfall in June and July, while Cambodia is forecasted to be the wettest area which is likely receiving above average rainfall in June and July. The forecast also indicates that the LMB might receive less than average rain

specifically in the middle and south-eastern regions and southern Laos is likely the driest area in the region.

# 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

2024	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
30-04-2024	535.25	1.49	8.90	3.72	1.43	0.78	2.36	1.42	2.72	1.86	0.93	2.33	1.32	2.71	7.24	2.60	1.67	0.71	2.03	1.20	0.96	-0.49	-0.37
01-05-2024	535.39	1.39	8.88	4.08	1.86	0.95	2.42	1.38	2.74	1.81	0.90	2.28	1.30	2.72	7.29	2.54	1.69	0.72	2.16	1.22	0.92	-0.39	-0.24
02-05-2024	535.37	1.36	8.54	3.82	2.22	1.16	2.45	1.33	2.66	1.88	0.89	2.20	1.24	2.70	7.31	2.50	1.72	0.74	2.25	1.30	0.83	-0.29	-0.14
03-05-2024	535.47	1.48	8.46	3.47	1.96	1.26	2.50	1.25	2.60	1.79	0.89	2.21	1.20	2.69	7.29	2.46	1.66	0.70	2.12	1.31	0.82	-0.19	-0.04
04-05-2024	535.29	1.43	8.38	3.30	1.61	1.13	2.73	1.39	2.72	1.75	0.90	2.17	1.20	2.68	7.39	2.48	1.83	0.75	1.85	1.44	0.75	0.08	0.24
05-05-2024	535.39	1.47	8.42	3.10	1.44	0.95	2.88	1.48	2.86	1.85	0.90	2.18	1.21	2.64	7.24	2.42	1.50	0.66	1.68	1.73	0.74	0.52	0.74
06-05-2024	535.41	1.54	8.36	2.89	1.24	0.83	2.73	1.50	2.82	1.87	0.92	2.20	1.18	2.64	7.19	2.40	1.43	0.52	1.50	1.49	0.72	0.97	1.19

#### Table A2: Weekly observed rainfall

2024	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
30-04-2024	0	0	0	0	4.7	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
01-05-2024	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
02-05-2024	0	0	12.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
03-05-2024	0.5	2.8	15.4	0	0	0	33.2	0	0	0	0	57.5	0	0	0	0	0		1.8	0	0	0	0
04-05-2024	0	0	0	6.5	1.8	12.8	15.9	42	26.4	4	2.2	28.5	5	3.6	59	93	82.7		0	77.8	0	6.5	0
05-05-2024	0	0	0	0	0	0	0	2.1	1.6	0	0	0	12.8	0	0	0	0		0	0	0	0	0
06-05-2024	0	0.5	0	0	0	1.6		7.2	10.3	0	0	0	0	0	0	1	0		0	0	0	0	0
Sum	0.5	3.3	27.6	6.5	6.5	14.4	84.1	51.3	38.3	4.0	2.2	86.0	17.8	3.6	59.0	94.0	82.7		1.8	77.8	0.0	6.5	0.0



# Mekong River Commission Secretariat

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