

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

07 May - 13 May 2024

Prepared by
The Regional Flood and Drought Management Centre
13 May 2024



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# **Content**

Co	ontent		i
Lis	st of Fi	gures	ii
Li	st of Ta	bles	iii
Κe	ey Mes	sages	iv
1	Intr	oduction	1
2	Ger	eral Weather Patterns	2
3.	Rair	nfall and Water Level Monitoring	3
	3.1.	Rainfall monitoring	3
	3.2.	Water level monitoring	5
4.	Flas	h Flood in the Lower Mekong Basin	9
5.	Dro	ught Monitoring in the Lower Mekong Basin	9
	5.2.	Weekly drought monitoring from 07 to 13 May	9
6	We	ather and Water Level Forecast and Flash Flood information	12
	6.1	Rainfall forecast	12
	6.2	Water level forecast	14
	6.3	Flash Flood Information	16
	6.4	Drought forecast	16
7	Sun	nmary and Possible Implications	17
	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	
Αı	nnex A	Weekly water level monitoring at the 22 key stations	22
Αı	nnex B	Tables for weekly updated water levels and rainfall at the Key Stations	25

# **List of Figures**

Figure 1: Weather conditions over the LMB	2
Figure 2: Outlook of wet and dry conditions over the Asian countries by ASMC	3
Figure 3: No tropical storm risk observed on 13 May 2024	3
Figure 4: Weekly rainfall distribution over the LMB during 07 – 13 May 2024	4
Figure 5: The key stations along LMB for river flood forecasting	6
Figure 6. Water level at the Jinghong hydrological station up to 13 May 2024	7
Figure 7: Seasonal change of inflows and outflows of Tonle Sap Lake	8
Figure 8. The seasonal change in monthly flow volume of Tonle Sap Lake	8
Figure 9: Weekly standardised precipitation index from May 7 to 13	10
Figure 10: Weekly Index of Soil Water Fraction from May 7 to 13	11
Figure 11: Weekly Combined Drought Index from May 7 to 13	12
Figure 12: Accumulated rainfall forecast from CHIRP-GFS (13 – 20 May 2024)	13
Figure 13. Monthly forecast of rainfall from NMME for May, June, July, and August 2024	16

# **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 07 13 May 2024, there has been light to heavy rainfall has been observed over the LMB, except in some areas in the Center Higland of Viet Nam.
- During 14 to 20 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 the northern part of Laos and the western part of Cambodia.

#### Water level monitoring and forecast

- At 22 key monitoring stations along the Mekong mainstream from 07 13 May 2024, water levels are below the long-term averages (LTAs) except for water level at Luang Prabang, Stung Treng, and Kratie, 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 14 20 May 2024, Water levels are forecasted to be increasing at stations from upper part at Chiang Saen to Kratie and decreasing from Kampong Cham to Prek Kdam stations. 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, Stung Treng, Tan Chau and Chau Doc stations.

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

- During 7-13 May 2024, the LMB was facing from moderate to extreme drought mainly in the middle and southern parts, specifically covering most provinces of Cambodia, middle and southern Lao PDR, most provinces of Thailand, and Central Highland of Viet Nam. The conditions were less serious than those of last week (30 Apr-6 May).
- 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 07 - 13 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: <a href="http://ffw.mrcmekong.org/ffg.php">http://ffw.mrcmekong.org/ffg.php</a>

#### 2 General Weather Patterns

During the last week, the Lower Mekong Basin influenced by the heat low-pressure. There has been light to heavy rainfall over the Lower Mekong Basin; except in some areas in the Center Higland of Viet Nam.

**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 14 to 20 May. Therefore, in the upcoming seven days, over the Lower Mekong Basin are expected to experience light to moderate rainfall.

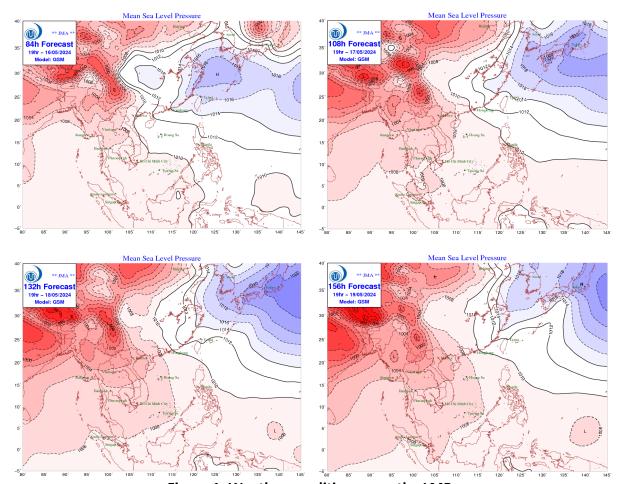


Figure 1: Weather conditions over the LMB

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 (13 – 26 May 2024) indicates that the Lower Mekong Basin (LMB) is likely in normal condition without any significant drier and wetter conditions. Moreover, the warmer conditions are predicted to occur lower to central parts of LMB. **Figure 2** shows the outlook of weather condition from 13 to 26 May 2024 in Southeast Asia based on results from the NCEP model (National Centres for Environmental Prediction).

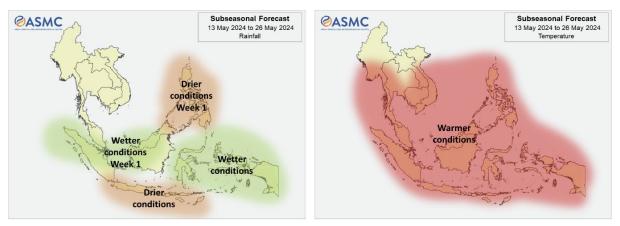


Figure 2: Outlook of wet and dry conditions over the Asian countries by ASMC.

Based on the tropical storm risk (TS) (<a href="https://www.tropicalstormrisk.com/">https://www.tropicalstormrisk.com/</a>), there is no active NW pacific system as of 13 May 2024 as displayed in **Figure 3**.

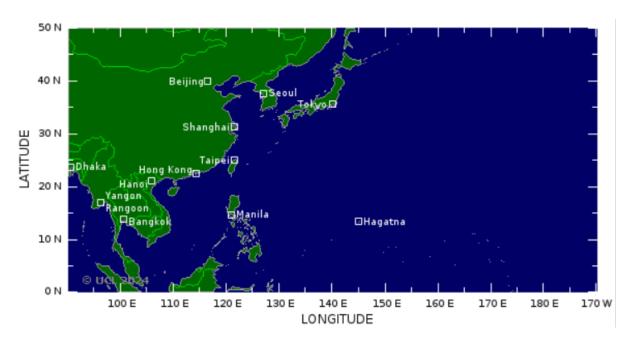


Figure 3: No tropical storm risk observed on 13 May 2024

# 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 07 May to 13 May 2024 (**Figure 4**). The light to heavy rainfall has been only observed over the LMB, except in some areas in the Center Highland of Viet Nam.

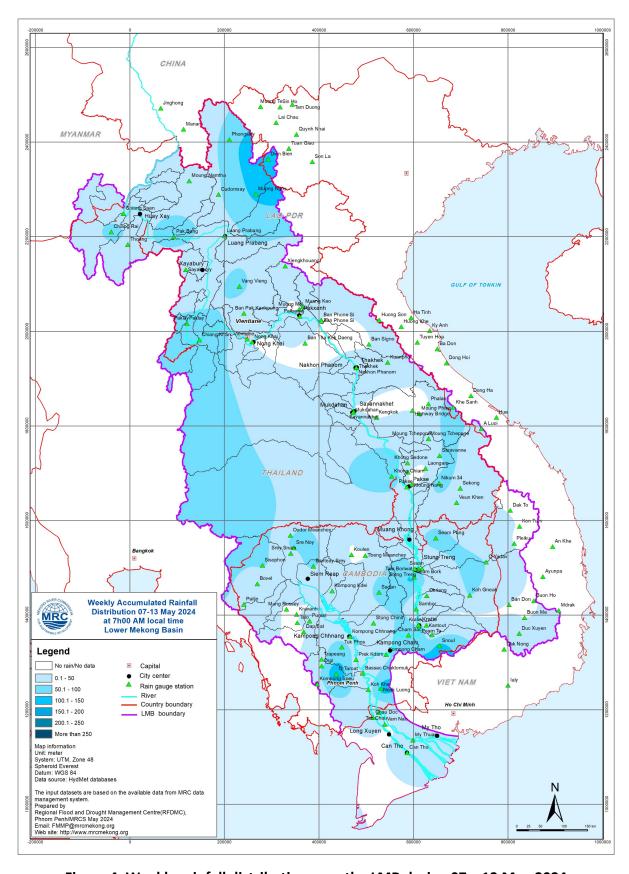


Figure 4: Weekly rainfall distribution over the LMB during 07 – 13 May 2024

#### 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: <a href="http://ffw.mrcmekong.org/overview.php">http://ffw.mrcmekong.org/overview.php</a>.

During 07 – 13 May 2024, the observed water level (WL) at Jinghong hydrological station<sup>1</sup>, was almost constant and ranges between 535.41 m and 535.35 m, which are corresponding to the outflow between 944.00 m³/s to 904.00 m³/s (recorded on 7:00 am), respectively (**Figure 6**). The water level in Chiang Saen station also indicated a slight fluctuation ranging from 1.54 m to 1.51 m. At the same period, the water level in Luang Prabang station also slightly increased with an approximate value of 0.64 m from 8.36 m to 9.00 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 increasing from 2.89 m to 3.20 m, and 1.24 m to 1.30 m, respectively. However, water levels at Nong Khai, Paksane, Nakhon Phanom, Thakhek, Mukdahan, and Savannakhet has slightly decreased from 0.83 m to 0.76 m, 2.73 m to 2.24 m, 1.5 m to 1.13 m, 2.82 m to 2.48 m, 1.87 m to 1.77 m, and 0.92 m to 0.45 m, respectively. Moving down at Khong Chiam, Pakse, Stung Treng, Kratie, Kampong Cham, Phnom Penh (Bassac), Phnom Penh Port, Koh Khel, and Prek Kdam, water levels are increasing from 2.2 m to 2.31 m, 1.18 m to 1.32 m, 2.64 m to 2.69 m, 7.19 m to 7.31 m, 2.4 m to 2.76 m, 1.41 m to 1.95 m, 0.52 m to 0.95 m, 1.50 m to 1.92 m, and 0.72 m to 1.08 m, respectively. However, only the water level at Neak Luong has dropped from 1.49 m to 1.39 m.

Similar to the previous week, the water levels from 07 to 13 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 0.97 m and -0.33 m, while at the Chau Doc station, they ranged from 1.19 m to -0.21 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>.

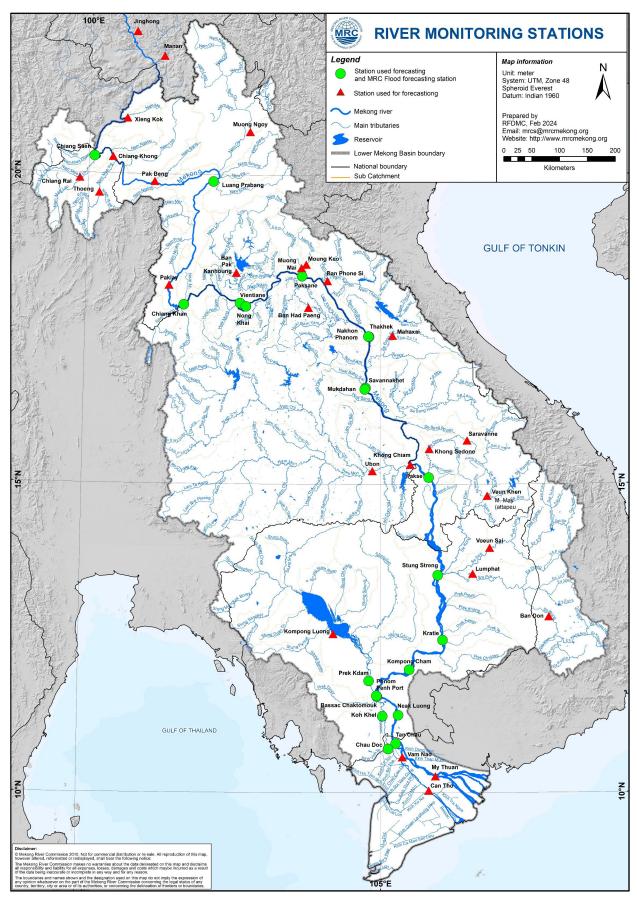


Figure 5: The key stations along LMB for river flood forecasting

The water levels in key monitoring stations on 13 May 2024 are below their long-term averages (LTAs) except for the Luang Prabang, Stung Treng, and Kratie 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**.

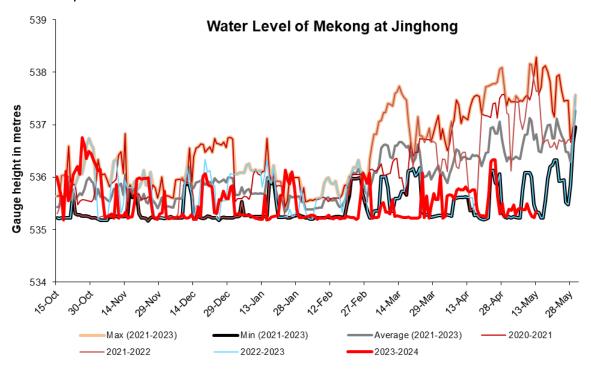


Figure 6. Water level at the Jinghong hydrological station up to 13 May 2024.

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:

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

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 (1997-2023) are illustrated in **Figure 8**. Up to 13 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 13 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)**.

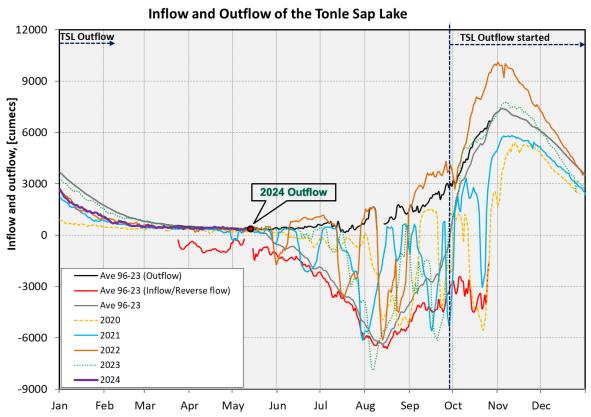


Figure 7: Seasonal change of inflows and outflows of Tonle Sap Lake.

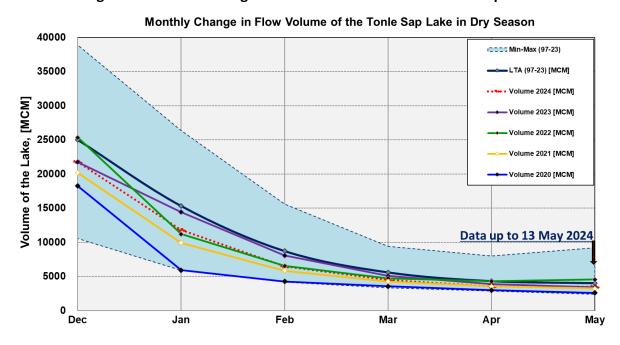


Figure 8. The seasonal change in monthly flow volume of Tonle Sap Lake.

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

Month	LTA Max (97-22) Volume [MCM] [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	3483.39	86.48
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 situ	uation: low	er than lon	g-term min	imum valu	es (LTMIN)	)			
	Normal co	ndition: wit	hin the ran	ge of long-	term min (	LTMIN) an	d max (LTN	ЛАХ) value	S	
	Low volum	ne situation	: lower tha	n long-tern	n average	(LTA)				
Unit: Millio	n Cubic M	eter (1 MC	M= 0.001 3	<b>(</b> m						

Remarks: the volume of Tonle Sap Lake in 2024 is updated untill 13 May 2024.

## 4. Flash Flood in the Lower Mekong Basin

During the weekly monitoring period from 07 May - 13 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 07 to 13 May

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 7 to 13 May 2024, as shown in **Figure 9**, were mainly severely and extremely dry from the north to the south. Most provinces of Cambodia, most provinces of Laos, all provinces of Thailand and all provinces of Viet Nam within the LMB region were seriously impacted.

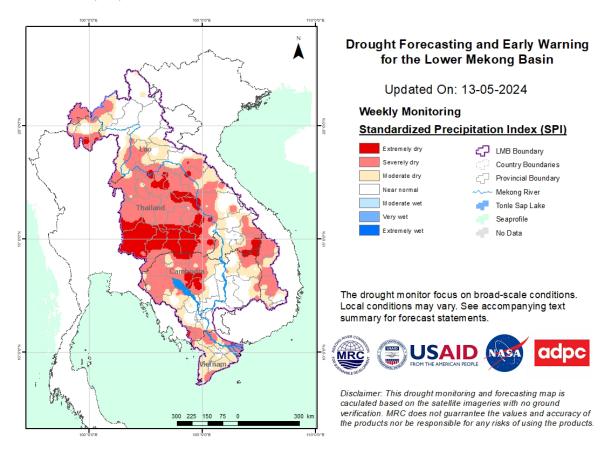


Figure 9: Weekly standardised precipitation index from May 7 to 13.

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

Soil moisture conditions from 7 to 13 May 2024, as displayed in **Figure 10**, were moderately and severely dry over the middle and south due to absence of rainfall. The conditions were better than those of last week (Apr 30-May 6)

**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.

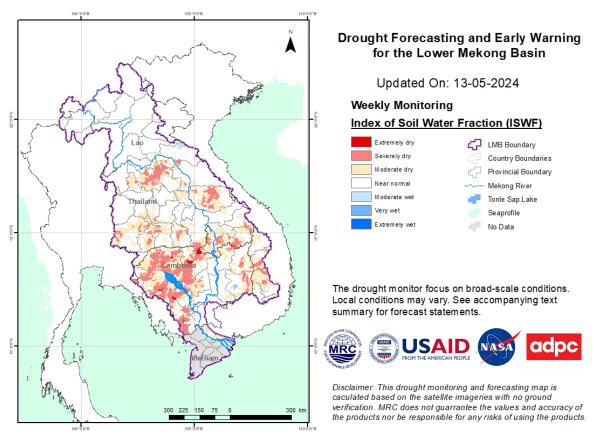


Figure 10: Weekly Index of Soil Water Fraction from May 7 to 13.

#### Weekly Combined Drought Index (CDI)

With the dry conditions of soil moisture, the combined drought indicator (displayed in **Figure 11** reveals that during May 7-13, the LMB was facing from moderate to extreme drought mainly in the middle and southern parts, specifically covering most provinces of Cambodia, middle and southern Lao PDR, most provinces of Thailand, and Central Highland of Viet Nam. The conditions were less serious than those of last week (30 Apr-6 May).

The impacted areas are listed below:

Number	Country	Province	Mderate	Severe	Extreme	xceptiona	Number	Country	Province	Mderate	Severe	Extreme	xceptiona	Number	Country	Province	Mderate	Severe	Extreme	xceptiona
1	Cambodia	Battamabang		S	L		24	Lao PDR	Oudomxai					47	Thailand	Udon Thani		S	5	
2	Cambodia	Banteay Meanche	y	S	S		25	Lao PDR	Loungp rabang					48	Thailand	Sakon Nakhon		S	5	
3	Cambodia	Kampong Cham					26	Lao PDR	Xayaburi					49	Thailand	BuengKan		S		
4	Cambodia	Pursat		5	L		27	Lao PDR	Xiengkhouang					50	Thailand	Nakhon Phanom		S		
5	Cambodia	Kampong Chhnan	g	S	S		28	Lao PDR	Vientiane					51	Thailand	Kalasin		S		
6	Cambodia	Otdar Meanchey		S	S		29	Lao PDR	Vientiane Capital		S			52	Thailand	Mukdahan		S	S	
7	Cambodia	Preah Vihear		5	S	S	30	Lao PDR	Xaisom boun					53	Thailand	Roi Et		5		
8	Cambodia	KampongThom		L	S		31	Lao PDR	Borikhamxai		5			54	Thailand	Yasothon		5		
9	Cambodia	Kratie					32	Lao PDR	Khammouan		5			55	Thailand	Amnat Charoen		5		
10	Cambodia	Mondulkiri		L			33	Lao PDR	Savanakhet		5			56	Thailand	Ubon Ratchathani		L		
11	Cambodia	Ratanakiri		L			34	Lao PDR	Salavan		5			57	Thailand	Si Sa Ket		5	S	
12	Cambodia	Tbong Khmum		L			35	Lao PDR	Xekong		S			58	Thailand	Surin		S	S	
13	Cambodia	Prey Veng		L			36	Lao PDR	Attapu		L	S		59	Thailand	Buri Ram		S	5	S
14	Cambodia	Kampot			S		37	Lao PDR	Champasack		L			60	Thailand	Nakhon Ratchasin	na 💮	S	5	5
15	Cambodia	Takeo		L	S		38	Thailand	Chiang Mai					61	Viet Nam	Kon Tum		L		
16	Cambodia	Svai Rieng		L			39	Thailand	Chiang Rai		S			62	Viet Nam	Gia Lai		L		
17	Cambodia	Stung Treng		S			40	Thailand	Payao		S			63	Viet Nam	Dak Nong		S		
18	Cambodia	KampongSpeu		5			41	Thailand	Loei		5			64	Viet Nam	Dak Lak		5		
19	Cambodia	Kandal					42	Thailand	Nong Bua Lam Ph	ш	5			65	Viet Nam	Dong Thap		5		
20	Cambodia	Siem Reap		5	L	S	43	Thailand	Khon Kaen		5			66	Viet Nam	Ti en Giang		5		
21	Lao PDR	Bokeo					44	Thailand	Nong Khai		5	S		67	Viet Nam	An Giang				
22	Lao PDR	Luangnamtha					45	Thailand	Chaiyaphum		5				Other pro	vinces of the Mek	ong De Ita of	Viet Nam	have no d	ata
23	Lao PDR	Phongsali					46	Thailand	Maha Sarakham		5	5				Moderate		Severe		
																Severe		xceptiona	1	

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

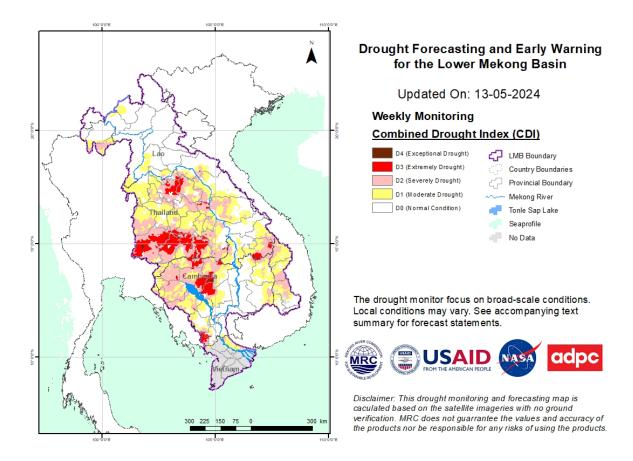


Figure 11: Weekly Combined Drought Index from May 7 to 13.

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 14 to 20 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 the northern part of Laos and western part of Cambodia.

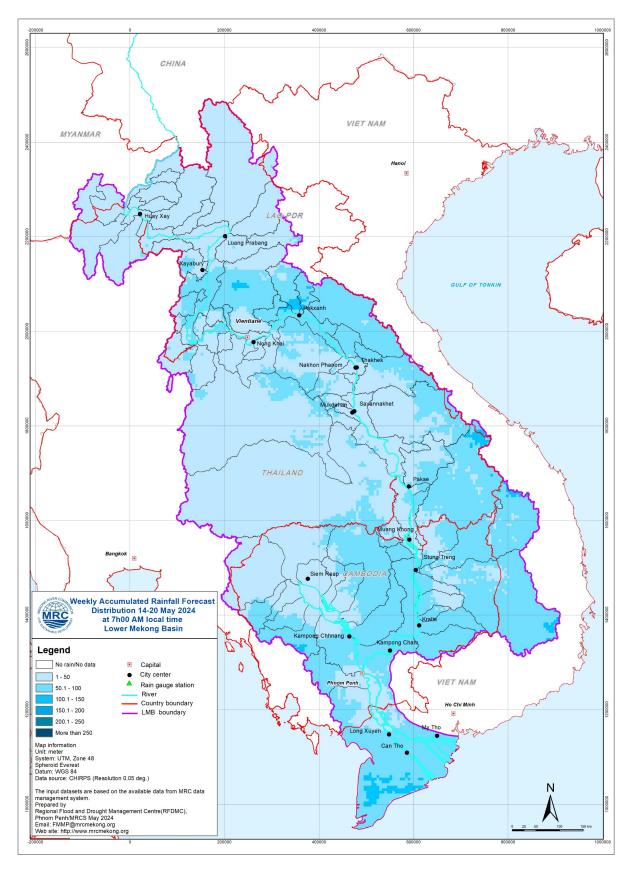


Figure 12: Accumulated rainfall forecast from CHIRP-GFS (13 – 20 May 2024)

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

In Chiang Saen monitoring station, the water level is expected to be fluctuated over the forecasting period of 14-20 May 2024. However, it will slightly increase from 1.49 m to 1.87 m. The water level in Luang Prabang stations affected by backwater is likely slightly increasing from 9.12 m to 9.31 m.

Along the Mekong mainstream, the water levels at upper stretch at Chiang Khan, Vientiane, Nongkhai, Paksane, Nakhon Phanom, Thakhek, Mukdahan, Savannakhet, Kong Chiam, Pakse, Stung Treng, and Kratie, water levels will slightly rise of approximately 0.68 m, 0.48 m, 0.34 m, 0.33 m, 0.27 m, 0.16 m, 0.10 m, and 0.14 m, 0.26 m, 0.16 m, 0.16 m, and 0.19 m, respectively. Moreover, water levels at Kampong Cham, Phnom Penh (Bassac), Phnom Penh Port, Koh Khel, Neak Luong, and Prek Kdam 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 decreasing approximately -0.29 m, -0.33 m, -0.38 m, and -0.40 m, -0.12 m, and -0.40 m, respectively.

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 -0.22 to 1.11 m and -0.12 to 1.17 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, Stung Treng, Tan Chau and Chau Doc stations from 14 to 20 May 2024.

The weekly River Monitoring Bulletin and forecasting issued on 13 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>

Table 2. Weekly River Monitoring Bulletin.



#### MEKONG RIVER MONITORING AND FORECASTING BULLETIN

#### Monitoring on 13 May 2024 and weekly forecasting from 14 to 20 May 2024

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

# THE FORECASTING HYDROLOGICAL STATION MAP OF THE LOWER MEKONG BASIN (LMB) The weekly river bulletin is produced at 22 main stations along the mainstream and is issued every Monday of the week. This bulletin provides current water status and a seven-day forecast on a weekly status. Course Manual Language Status Course Manual Language Status Weekly Accumulated Rainfall Forecast No rain 0.0-10 100-255 150-100 100-150

#### NOTES

- Light to moderate accumulated rainfall is forecasted to be distributed for entire Lower Mekong Basin (LMB). Moderate rainfall is expected to occur in central part of Lao PDR, Cambodia and 3S Basin during 14-20 May 2024.
- Water levels are forecasted to be slightly increasing at stations from Chiang Saen to Kratie station. Moving down, water level will be slightly drop from Kampong Cham to Prek Kdam station from 14 to 20 May 2024. However, water levels at Tan Chau and Chau Doc are forecasted to be fluctuated due to sea tidal influence.
- Water levels at most of the stations are expected to be below their long-term averages (LTAs) except for Luang Prabang, Stung Treng, Tan Chau and Chau Doc from 14 to 20 May 2024.

CURRENT WATER LEVEL STATUS

Monitoring Station	(mm)	zero gauge amsi (m)	water level againts zero gauge (m)	Current Status	Flow Threshold (PMFM*6A)
Jinghong	0.0		535.35		
Chiang Saen	0.0	357.110	1.51	Below LTA	Normal
Luang Prabang**	0.0	267.195	9.00	Above LTA	
Chiang Khan	0.0	194.118	3.20	Below LTA	*
Vientiane	nr	158.040	1.30	Below LTA	Normal
Nongkhai	0.0	153.648	0.76	Below LTA	- 2
Paksane	0.0	142.125	2.24	Below LTA	
Nakhon Phanom	0.0	130,961	1.13	Below LTA	
Thakhek	0.0	129.629	2.48	Below LTA	12
Mukdahan	0.0	124.219	1.77	Below LTA	-
Savannakhet	0.0	125.410	0.84	Below LTA	- 8
Khong Chiam	0.0	89.030	2.31	Below LTA	Normal
Pakse	0.0	86.490	1.32	Below LTA	Normal
Stung Treng	0.0	36.790	2.69	Above LTA	Normal
Kratie	0.0	-1.080	7.31	Above LTA	Normal
Kompong Cham	0.0	-0.930	2.76	Below LTA	140
Phnom Penh (Bassac)	0.0	-1.020	1.95	Below LTA	-
Phnom Penh Port	nr	0.000	0.95	Below LTA	
Koh Khel	0.0	-1.000	1.92	Below LTA	
Meak Luong	4.8	-0.330	1.39	Below LTA	-
Prek Kdam	0.0	0.080	1.08	Below LTA	- 2
Tan Chau	0.3	0.000	-0.33	Below LTA	
Chau Doc	10.0	0.000	-0.21	Below LTA	

Chau Doc
 Procedures for Maintenance of Flows on the Mainstream
 Luana Prabang station is influenced by hydropowers at its upstream and downstream

#### WEEKLY WATER LEVEL FORECAST

Forecasting Station		Fore	casted	Water	Levels	(m)		Status	Trend
	14-May	15-May	16-May	17-May	18-May	19-May	20-May	ž	Ē
Jinghong .	- 15			151	273	-		8	
Chiang Saen	1.49	1.62	1.87	1.90	1.92	1.90	1.87	Below LTA	Increasing
Luang Prabang	9.12	9.12	9.10	9.17	9.22	9.28	9.31	Above LTA	Increasing
Chiang Khan	3.28	3.67	3.80	3.76	3.78	3.82	3.88	Below LTA	Increasing
Vientiane	1.26	1.35	1.63	1.71	1.67	1.70	1.78	Below LTA	Increasing
Nongkhai	0.82	0.85	0.91	0.93	0.99	1.05	1.10	Below LTA	Increasing
Paksane	2.38	2.54	2.44	2.46	2.51	2.54	2.57	Below LTA	Increasing
Nakhon Phanom	1.12	1.15	1.21	1.26	1.31	1.36	1.40	Below LTA	Increasing
Thakhek	2.50	2.50	2.48	2.52	2.58	2.60	2.64	Below LTA	Increasing
Mukdahan	1.77	1.80	1.80	1.78	1.82	1.85	1.87	Below LTA	Increasing
Savannakhet	0.86	0.90	0.93	0.95	0.90	0.96	0.98	Below LTA	Increasing
Khong Chiam	2.31	2.35	2.38	2.43	2.47	2.52	2.57	Below LTA	Increasing
Pakse	1.34	1.36	1.38	1.42	1.45	1.42	1.48	Below LTA	Increasing
Stung Treng	2.70	2.71	2.71	2.77	2.80	2.83	2.85	Above LTA	Increasing
Kratie	7.30	7.32	7.37	7.40	7.43	7.45	7.50	Below LTA	Increasing
Kompong Cham	2.76	2.75	2.76	2.65	7.43	2.53	2.47	Below LTA	Decreasing
Phnom Penh (Bassac)	1.95	1.94	1.94	1.81	1.73	1.72	1.62	Below LTA	Decreasing
Phnom Penh Port	0.95	0.94	0.83	0.74	0.67	0.63	0.57	Below LTA	Decreasing
Moh Khel	1.91	1.81	1.73	1.64	1.55	1.52	1.52	Below LTA	Decreasing
Neak Luong	1.30	1.26	1.24	1.24	1.24	1.25	1.27	Below LTA	Decreasing
Trek Kdam	1.07	1.06	0.98	0.90	0.78	0.70	0.68	Below LTA	Decreasing
Tan Chau	-0.22	-0.04	0.24	0.35	0.46	0.63	0.78	Above LTA	- 6
Chau Doc	-0.12	0.12	0.36	0.47	0.61	0.79	0.96	Above LTA	

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http://ffw.mrcmekong.org/bulletin\_dry.php http://ffw.mrcmekong.org/report\_dry.php https://omfm.mrcmekong.org/ This information is supplied as a service to the governments of the MRC Member Countries so that it may be used as a tool within existing national disaster forecast and warning systems.

#### 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 <a href="http://ffw.mrcmekong.org/ffg.php">http://ffw.mrcmekong.org/ffg.php</a>.

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

#### 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.

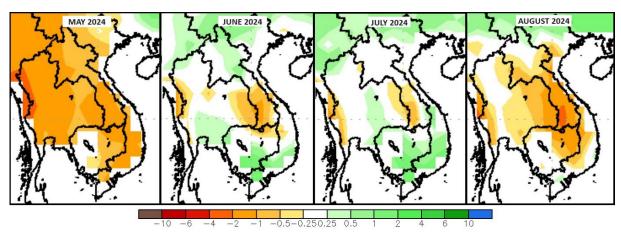


Figure 13. Monthly forecast of rainfall from NMME for May, June, July, and August 2024.

**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 07 May – 20 May 2024, there has been light to moderate rainfall has been observed over the LMB, except in some areas in the Center Higland of Viet Nam.

During 14 to 20 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 the northern part of Laos and the western part of Cambodia.

#### 7.2. Water level and its forecast

At 22 key monitoring stations along the Mekong mainstream from 07 - 13 May 2024, water levels are below the long-term averages (LTAs) except for water level at Luang Prabang, Stung Treng, and Kratie, 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 14 - 20 May 2024, Water levels are forecasted to be increasing at stations from upper part at Chiang Saen to Kratie and decreasing from Kampong Cham to Prek Kdam stations. 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, Stung Treng, Tan Chau and Chau Doc stations.

#### 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.

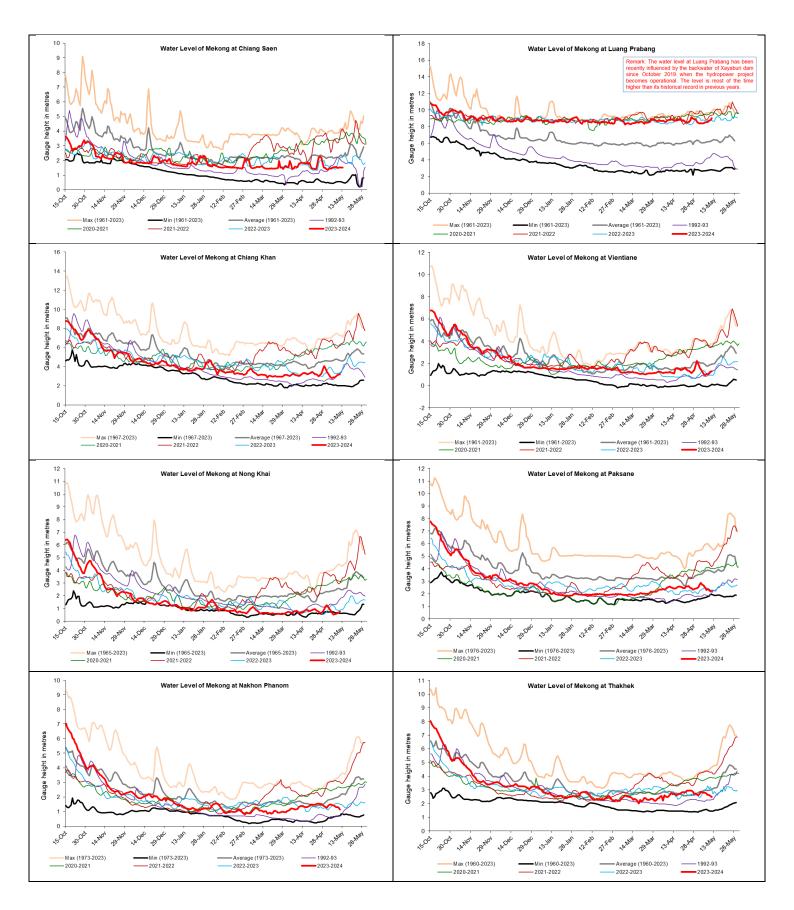
#### 7.4. Drought condition and its forecast

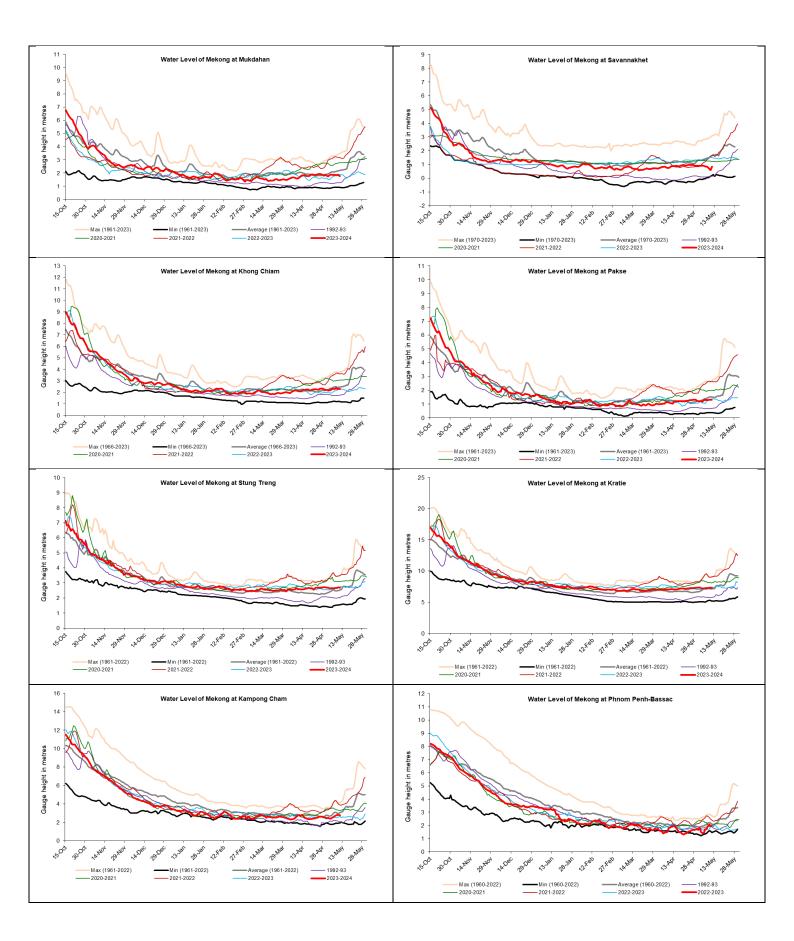
During 7-13 May 2024, the LMB was facing from moderate to extreme drought mainly in the middle and southern parts, specifically covering most provinces of Cambodia, middle and southern Lao PDR, most provinces of Thailand, and Central Highland of Viet Nam. The conditions were less serious than those of last week (30 Apr-6 May).

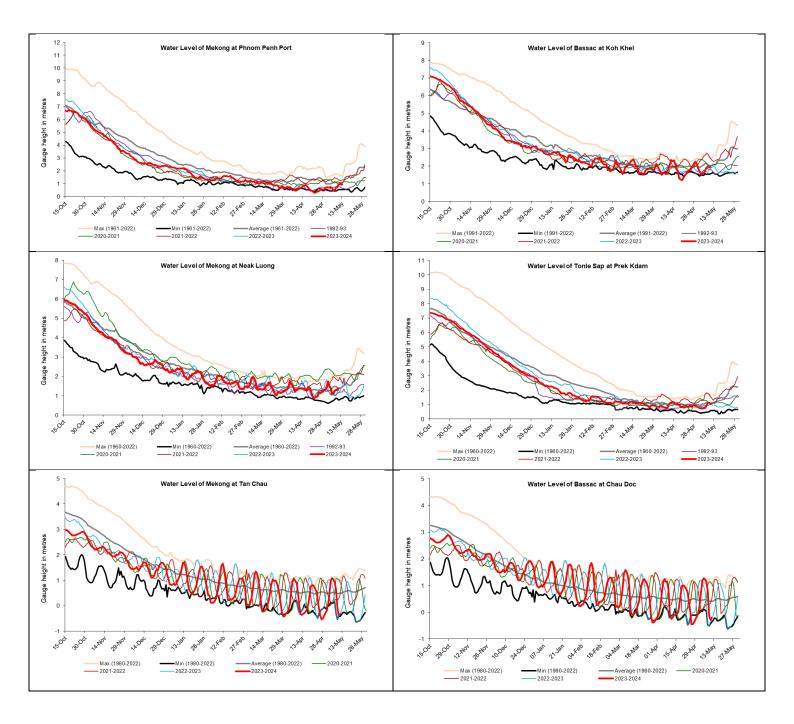
The next four-month forecast of rainfall indicates that much below average rainfall is predicted for the whole LMB area in May. North-eastern Cambodia, middle and southern Laos and eastern Thailand are likely receiving below average rainfall in June and July, while Cambodia is forecasted to be the wettest 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
07-05-2024	535.38	1.54	8.40	2.82	1.04	0.66	2.66	1.45	2.79	1.89	0.90	2.33	1.26	2.67	7.18	2.48	1.41	0.50	1.56	1.39	0.73	1.09	1.28
08-05-2024	535.38	1.55	8.50	2.90	0.96	0.52	2.50	1.43	2.79	1.86	0.85	2.30	1.30	2.64	7.25	2.56	1.68	0.68	1.61	1.10	0.77	1.03	1.24
09-05-2024	535.49	1.51	8.54	2.90	1.04	0.55	2.31	1.37	2.74	1.87	0.85	2.30	1.28	2.66	7.23	2.70	1.71	0.72	1.70	1.12	0.89	0.91	1.16
10-05-2024	535.35	1.48	8.56	3.00	1.04	0.58	2.36	1.30	2.63	1.83	0.78	2.40	1.29	2.67	7.24	2.76	1.94	0.93	1.92	1.24	1.11	0.60	0.80
11-05-2024	535.25	1.53	8.72	3.10	1.14	0.63	2.32	1.30	2.63	1.88	0.70	2.31	1.30	2.68	7.30	2.80	2.06	1.02	1.96	1.30	1.14	0.00	-0.14
12-05-2024	535.23	1.51	8.78	3.16	1.27	0.70	2.20	1.27	2.57	1.83	0.58	2.29	1.30	2.70	7.30	2.78	1.96	0.95	1.95	1.30	1.07	-0.35	-0.29
13-05-2024	535.35	1.51	9.00	3.20	1.30	0.76	2.24	1.13	2.48	1.77	0.84	2.31	1.32	2.69	7.31	2.76	1.95	0.95	1.92	1.39	1.08	-0.33	-0.21

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
07-05-2024	0	1.8	0	0	33.6	0	35	0	0	4	1.4	83.7	13	57	0	0	0		0	0	0	0	0
08-05-2024	6	11.2	0	45.2	0	0	22.9	0	0	0	0	0	0	3	8.9	36.2	0		6.2	34.2	8.3	0.2	0.4
09-05-2024	0.5	1	0	2.1	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	6
10-05-2024	20	0	33.8	2.5	0	0	8.0	0	0	0	0	0	0	0	0	0	0		21.4	49.6	13.4	0.2	2
11-05-2024	6.5	2.9	2.8	22.9	0	4.5	0	14.1	19.1	1.1	0	0	0	0	13	0	0		0	13.3	0	0.2	0
12-05-2024	0	5.8	0	0	0	0	3.6	0	0	0	0	0	0	0	0	0	2.5		0	14.5	7.2	0	0
13-05-2024	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	4.8	0	0.3	10
Sum	33.0	22.7	36.6	72.7	33.6	4.5	0.0	14.1	19.1	5.1	1.4	83.7	13.0	60.0	21.9	36.2	2.5	-	27.6	116.4	28.9	0.9	18.4



# Mekong River Commission Secretariat