



Mekong River Commission

Weekly Dry Season Situation Report in the Lower Mekong River Basin 24-30 May 2022

Prepared by
The Regional Flood and Drought Management Centre
31 May 2022

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Contents

- Figures..... 2**
- Table 3**
- Key Messages 4**
- 1 Introduction 6**
- 2 General Weather Patterns 7**
- 3 Water Levels in the Lower Mekong River 11**
- 4 Flash Flood in the Lower Mekong Basin 18**
- 5 Drought Monitoring in the Lower Mekong Basin..... 19**
- 6 Weather and Water Level Forecast and Flash Flood Information 22**
 - 6.1 Weather and rainfall forecast 22*
 - 6.2 Water level forecast 23*
 - 6.3 Flash Flood Information..... 24*
 - 6.4 Drought forecast 24*
- 7 Summary and Possible Implications 27**
 - 7.1 Rainfall and its forecast 27*
 - 7.2 Water level and its forecast 27*
 - 7.3 Flash flood and its trends..... 28*
 - 7.4 Drought condition and its forecast 28*

Figures

- Figure 1: Summary of weather conditions over the LMB. 7
- Figure 2: Outlook of wet and dry conditions over the Asian countries by ASMC..... 8
- Figure 3: No tropical storm risk observed on 31 May 2022..... 8
- Figure 4: Weekly total rainfall at key stations in the LMB..... 9
- Figure 5: Weekly rainfall distribution over the LMB..... 10
- Figure 6: Key stations and model application for River Monitoring and Flood Forecasting. 11
- Figure 7. Water level at the Jinghong hydrological station during 15 Oct 2021 to 30 May 2022..... 12
- Figure 8. Water levels at Chiang Saen in Thailand and Luang Prabang in Lao PDR. 13
- Figure 9. Water levels Vientiane and Paksane in Thailand and Lao PDR. 14
- Figure 10: Water levels at Nakhon Phanom and Pakse of Thailand and Lao PDR. 14
- Figure 11: Water levels at Stung Treng and Kratie on the Mekong River. 15
- Figure 12: Seasonal change of inflows and outflows of Tonle Sap Lake. 16
- Figure 13. The seasonal change in monthly flow volume of Tonle Sap Lake. 17
- Figure 14: Weekly standardised precipitation index from May 22 to 28..... 19
- Figure 15: Weekly Index of Soil Water Fraction from May 22 to 28. 20
- Figure 16: Weekly Combined Drought Index during May 22-28. 21
- Figure 17: Accumulated rainfall forecast (24 hrs) of model GFS. 23
- Figure 18. Daily average of monthly rainfall anomaly forecast from May to July 2022..... 25

Table

Table 1. The monthly change in the flow volume of Tonle Sap Lake. 17

Table 2. Weekly River Monitoring Bulletin. 26

Key Messages

Key messages for this weekly report are presented below.

Rainfall and its forecast

- This week, rainfall was observed from Chiang Khan in Thailand to Tan Chau in Viet Nam, varied from 1.00 mm to 143.40 mm over the Mekong region.
- There will be rainfall for the next 7 days over the Mekong region from 31 May to 06 June 2022.

Water level and its forecast

- According to MRC's observed water level (WL) at Jinghong, it showed a slight decrease of about 0.06 m from 536.71 m to 536.65 m during the weekly monitoring period from 24 to 30 May 2022 and staying about 0.31 m lower than its two-year average (2020-2021) value.
- Water levels of monitoring stations at Chiang Saen in Thailand significantly **decreased** about 1.58 m from 24 to 30 May 2022, staying about 0.64 m higher than its LTA level, **which is considered normal**. Water level of this station will increase about 0.15 m in the next 7 days.
- Moreover, water level from Chiang Khan in Thailand from 24 to 30 May 2022 increased by about 0.13 m (about 2.97 m higher than its LTA value), while WLs at Vientiane significantly increased about 1.32 m and stayed about 1.04 m higher than its maximum level, which still **considered abnormal**. Water levels at Nong Khai and Paksane also increased approximately 1.38 m and 0.74 m respectively. WL at Nong Khai stayed about 0.18 m higher than its maximum level while at Paksane it was about 2.68 m higher than its LTA value. Water levels at these stations will go down about 1.10 m in the next 7 days. From Nakhon Phanom in Thailand to Pakse in Lao PDR, WLs increased between 0.55 m and 0.95 m during the monitoring week. The current WLs from Nakhon Phanom to Pakse were staying close to their maximum level, considering **abnormal**. Water levels at these stations will drop about 0.55 m due to low inflow from upstream in the next 7 days.
- The current water levels at Luang Prabang, Chiang Khan, Vientiane, Nong Khai, from Nakhon Phanom to Pakse and from Stung Treng to Kompong Cham are higher or close to their Maximum Level, while WL at the other stations along the Mekong River are staying higher than their LTA level except the 2 tidal stations at Tan Chau and Chau Doc which are under their LTA value due to tidal effect during this monitoring period.

Drought condition and its forecast

- Drought conditions of the LMB from 22 to 28 May 2022 were normal in all areas from the north to the south. There was no drought threat over the region.
- For the upcoming three months' forecast, the LMB is likely to receive ample amount of rainfall in May and below average rainfall in both June and July 2022 from the middle

to the lower part of the region. Based on the weather forecast, May is likely to be much wetter than normal year especially in the north and central parts of the LMB.

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 **24-30 May 2022**. 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. 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
- 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:
http://ffw.mrcmekong.org/bulletin_wet.php.

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

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

2 General Weather Patterns

The weather outlook bulletins for three months (March April and May) and the weather maps issued by the Thai Meteorological Department (TMD) were used to verify weather conditions in the LMB.

Since the end of April 2022, the wet weather has come because the influentially high-pressure air mass areas prevailed over the LMB with gradually decreasing water levels in both mainstream and tributaries. The data from the TMD predict that low pressure of air-mass will reduce temperature and increased rainfall in LMB. From May to July, the low-pressure trough is going to prevail over the Mekong region bring rainfalls for the start of rainy season period in 2022.

[Figure 1](#) presents the weather map of 31 May 2022, showing a low-pressure point dominating the upper part of the Mekong region, which might have some rains for the next few days.

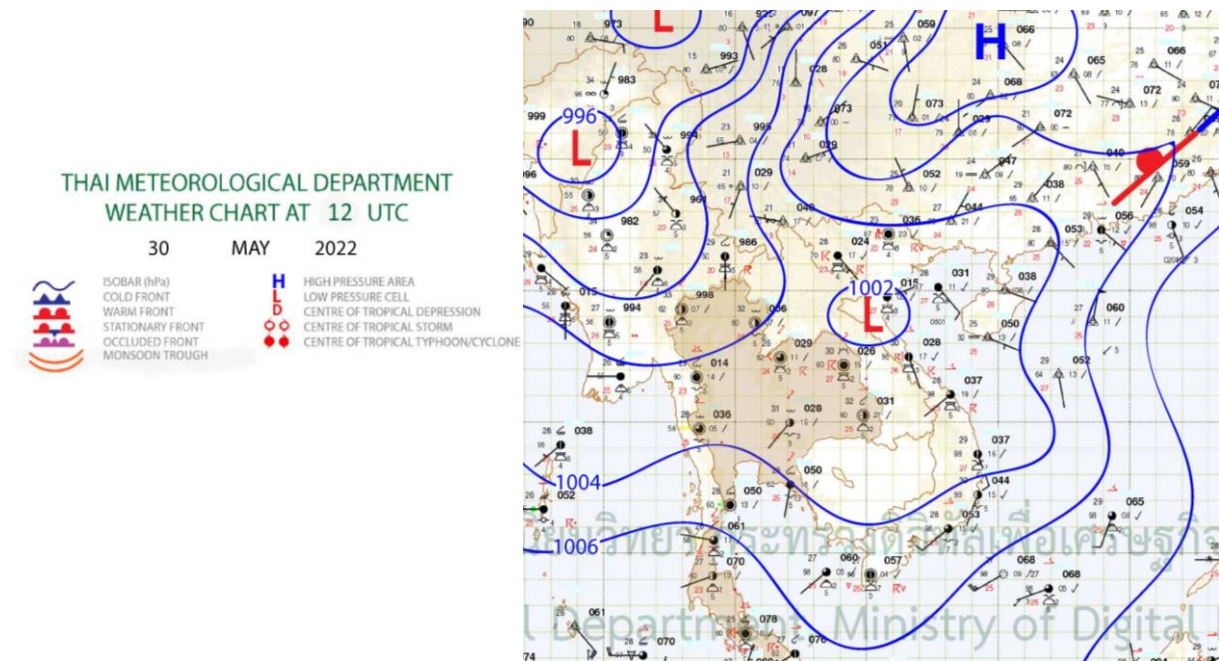


Figure 1: Summary of weather conditions over the LMB.

According to the ASEAN Specialised Meteorological Centre (ASMC), the highest probability of warm and wet conditions is predicted over the lower part of the Mekong region from 30 May to 12 June 2022. Moreover, the Mekong region is likely dominated by warm condition, which may bring rainfall and warm temperatures in general to the lower part of the LMB. **Figure 2** shows the outlook of weather condition from 30 May to 12 June 2022 in Southeast Asia based on results from the NCEP model (National Centres for Environmental Prediction).

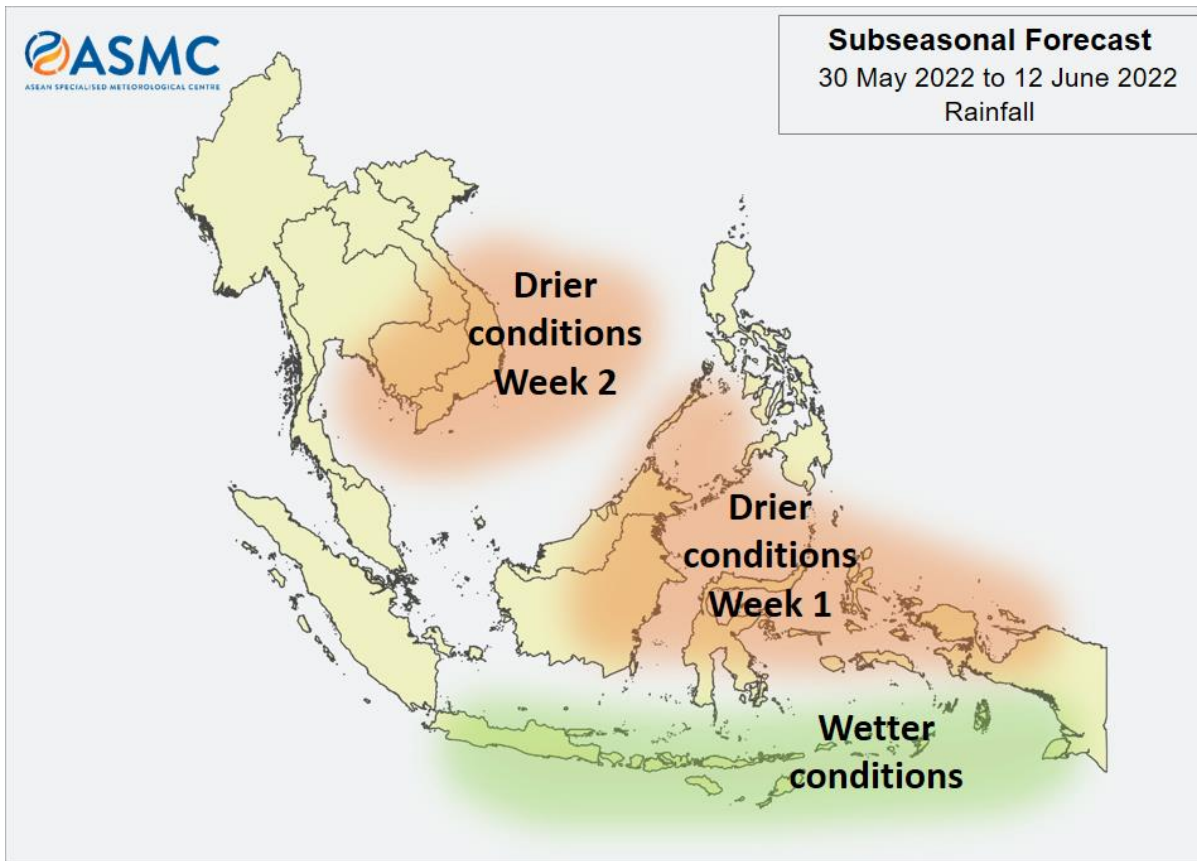


Figure 2: Outlook of wet and dry conditions over the Asian countries by ASMC.

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

There was no tracking storm covering the LMB during 24-31 May 2022, meaning no movement of storm directed from the South Sea of Viet Nam to the Mekong region, as displayed in [Figure 3](#).

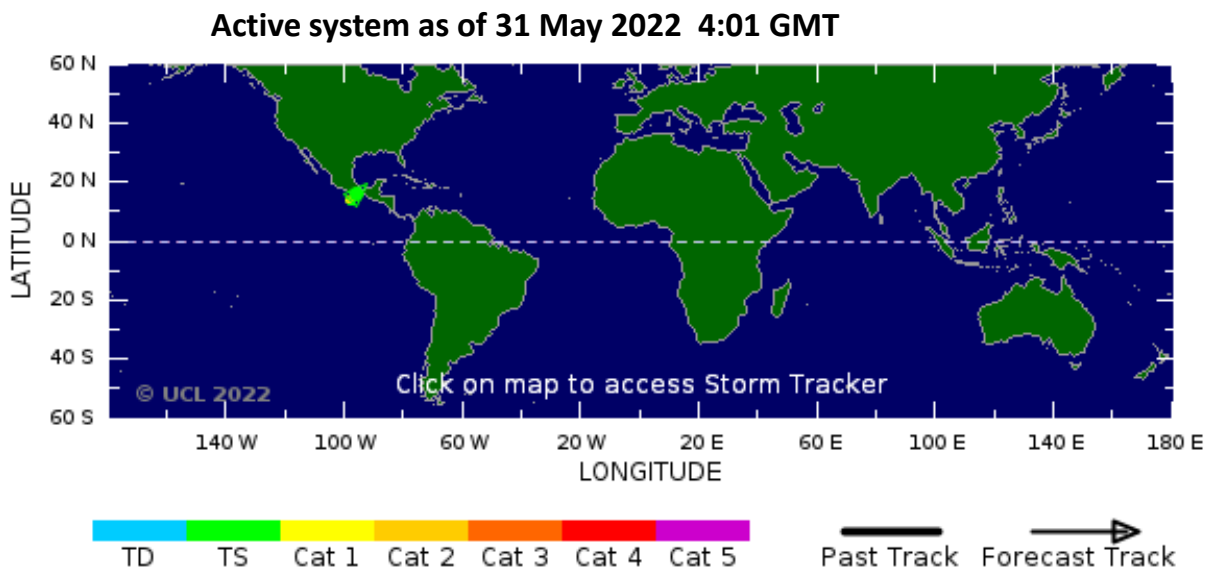


Figure 3: No tropical storm risk observed on 31 May 2022.

Rainfall patterns over the LMB

This week from 24 to 30 May 2022, rainfall was observed from the upper to lower part starting from Chiang Kham in Thailand to Tan Chau and Chau Doc in Viet Nam of the Lower Mekong Basin, varied from 1.00 mm to 143.40 mm. The highest rainfall of this week report concentrated in Paksane, which reached up to 143.40 mm. The total rainfall of this week was smaller, compared with last week rainfall occurred in the Mekong region. (See shown in [Figure 4](#)).

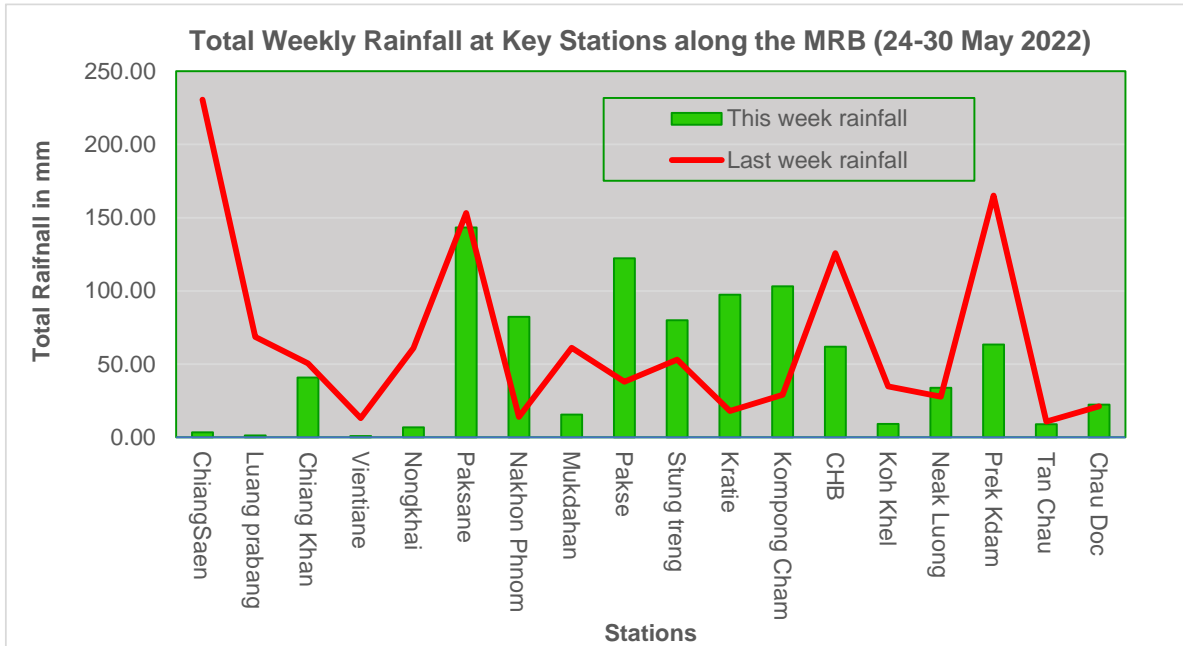


Figure 4: Weekly total rainfall at key stations in the LMB.

To verify area rainfall distribution, [Figure 5](#) shows a map of the weekly accumulated rainfall based on the observed data provided by the MRC Member Countries – Cambodia, Lao PDR, Thailand, and Viet Nam – from 24 to 30 May 2022.

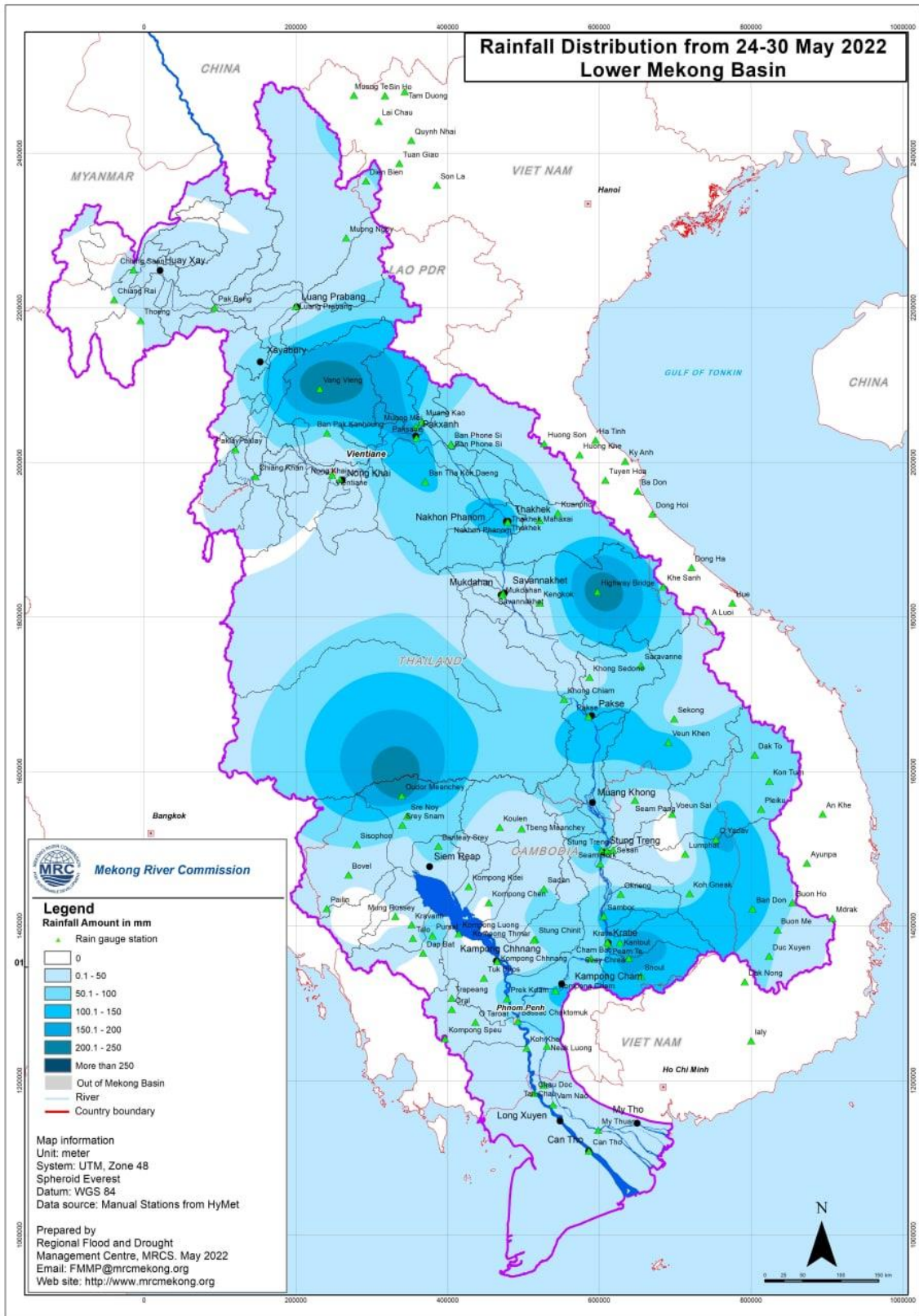


Figure 5: Weekly rainfall distribution over the LMB.

3 Water Levels in the Lower Mekong River

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 6](#). The hydrograph for each key station is available from the MRC’s River Flood Forecasting: <http://ffw.mrcmekong.org/overview.php>. The weekly water levels and rainfall at each key station are summarised in [Annex A](#).

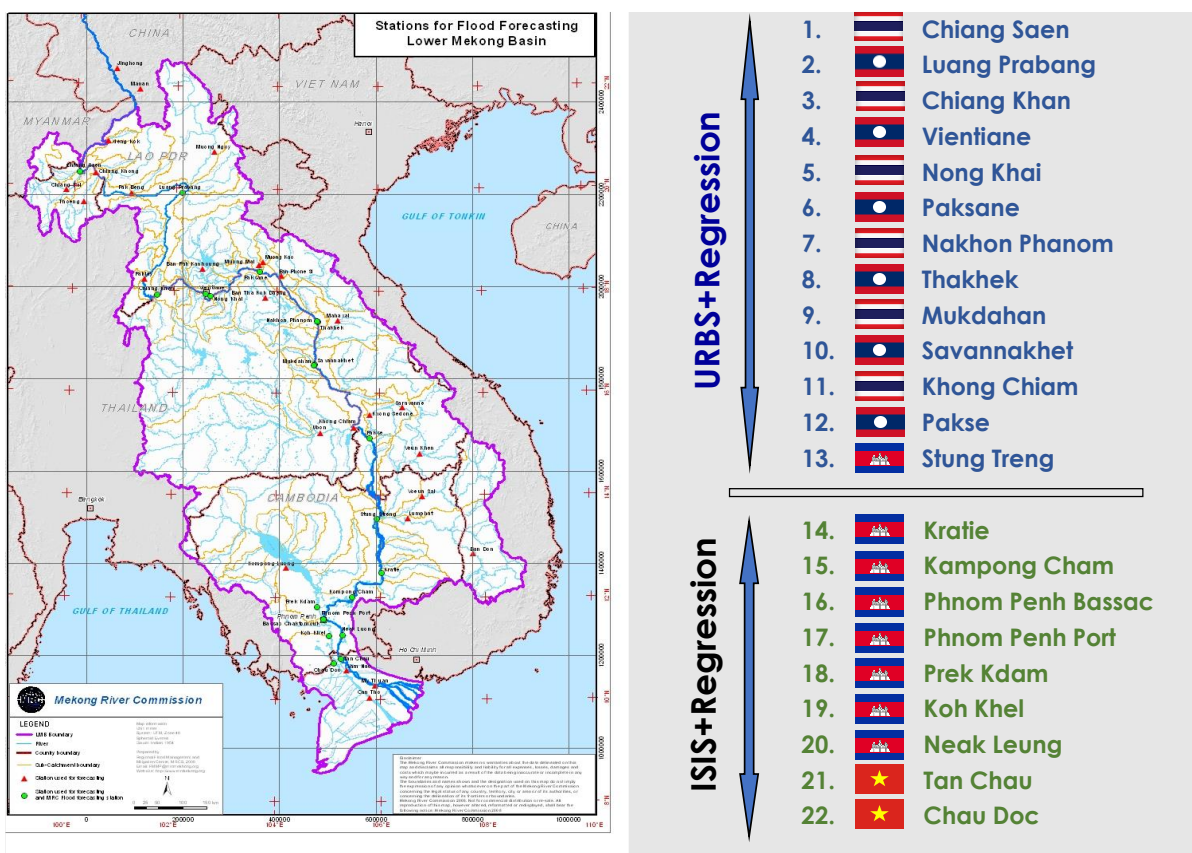


Figure 6: Key stations and model application for River Monitoring and Flood Forecasting.

According to MRC’s observed water level at Jinghong, it showed a decreasing figure of about 0.06 m from 536.71 m to 536.65 m during the weekly monitoring period from 24 to 30 May 2022 (recorded on 7:00 am) and staying about 0.31 m lower than its two-year average (2020-2021) value. The Eyes on Earth (Mekong Dam Monitor) estimates that 35% excess water is present at Chiang Saen, Thailand. The Stung Treng gauge is about 1.4 meters higher than its historical average due to a combination of upstream dam releases and unseasonable rainfall. The outflow at Jinghong station decreased from 1,850.00 m³/s to 1,800.00 m³/s from 24 to 30 May 2022. [Figure 7](#) below presents water level that increased at the Jinghong hydrological station¹, indicating the trend of fluctuating water level up to 30 May 2022.

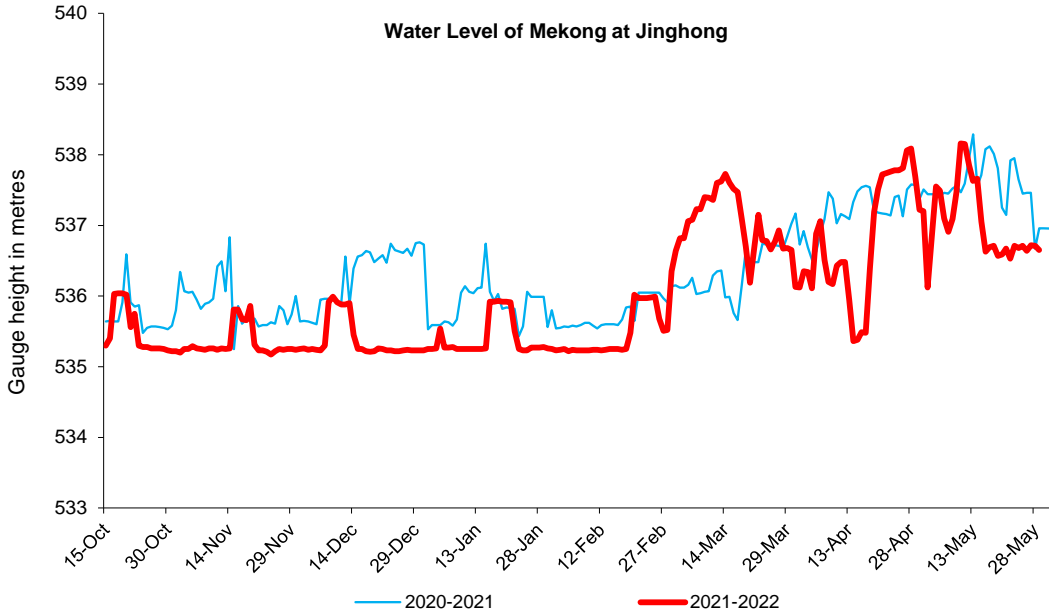


Figure 7. Water level at the Jinghong hydrological station during 15 Oct 2021 to 30 May 2022.

Last week, from 24 to 30 May 2022, water level along the lower Mekong River in Thailand’s Chiang Saen was significantly decreasing about 1.58 m and staying about 0.64 m higher than its Long-Term Average (LTA) level, which is considered normal. WL at Lao PDR’s Luang Prabang decreased 0.49 m compared with last week and stayed 0.38 m higher than its historical maximum value. WLs at the monitoring stations at Chiang Khan in Thailand increased by about 0.13 m, while at Vientiane in Lao PDR it increased about and 1.32 m. The current WLs at these stations are about 0.03 and 1.04 m respectively higher than their maximum value, which considered abnormal. WLs at Nong Khai and Paksane increased 1.38 m and 0.74 m, respectively, and staying about 0.18 m higher than its maximum value at Nong Khai while at Paksane it is about 2.68 m higher than its LTA value.

From Nakhon Phanom in Thailand to Pakse in Lao PDR, WLs increased between 0.55 m and 0.95 m during the monitoring report. The current WLs from Nakhon Phanom to Pakse were staying close to their maximum level, considering abnormal. From the stretches of the river from Stung Treng to Kratie significantly increased between 0.95 m and 2.05 m, staying slightly lower than their maximum level. WLs from Kompong Cham down to Chaktomuk, Koh Khel and Phnom Penh Port to Prek Kdam in Cambodia increased between 0.40 m and 1.50 m, staying between 0.50 m and 1.00 m higher than their LTA level. The current water levels at Luang

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

Prabang, Chiang Khan, Vientiane, Nong Khai, from Nakhon Phanom to Pakse and from Stung Treng to Kompong Cham are higher or close to their Maximum Level, while WL at the rest of stations in the Mekong River are staying higher than their LTA level except the 2 tidal stations at Tan Chau and Chau Doc which are below their LTA value due to tidal effect during this monitoring period.

Based on hydrological phenomenon, the contribution of inflow water from the upstream of Lancang-Mekong in China to the Mekong mainstream is about 16% in total during the wet season from June to October and about 25% in total during the dry season from November to May. The total inflow of water into the LMB is influenced by rainfall at the Mekong mainstream and its tributaries during the wet season.

Chiang Saen and Luang Prabang

Water level during May 24-30 at Thailand’s Chiang Saen significantly decreased about 1.58 m from 4.75 m to 3.17 m and stayed about 0.64 m higher than its Long-Term-Average (LTA), **which was considered normal**. When compared to last week, this week’s water level is lower.

Water level at the Luang Prabang station in Lao PDR decreased about 0.49 m during the reporting period. Compared to last week, the figure shows that water level this week is still about 0.38 m higher than its maximum value. The water levels at Chiang Saen and Luang Prabang are shown in [Figure 8](#) below.

Being situated between the upstream (Nam Beng, Nam Ou, Nam Suong, and Nam Khan) and downstream (Xayaburi) hydropower dams, the Luang Prabang station has a unique characteristic as it is influenced by the operations of all its surrounding dams. **Thus, the water level at this station can possibly change very rapidly during the early dry season.**

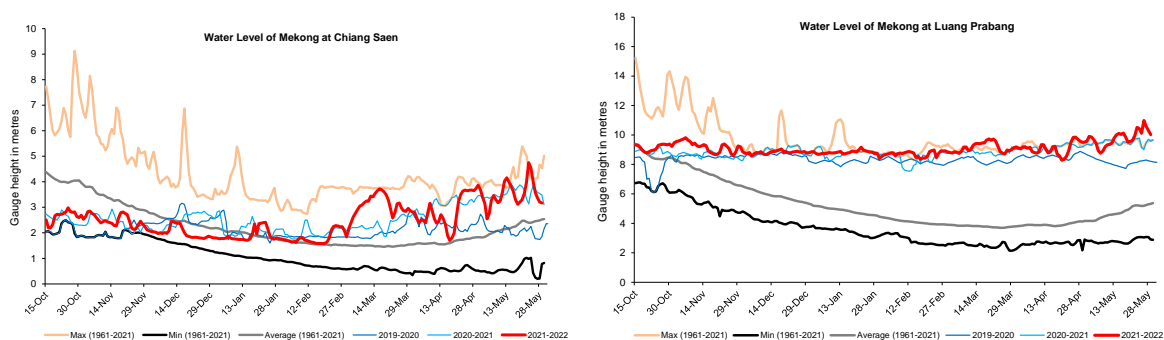


Figure 8. Water levels at Chiang Saen in Thailand and Luang Prabang in Lao PDR.

Chiang Khan, Vientiane-Nong Khai and Paksane

The water level at Chiang Khan in Thailand (downstream of the Xayaburi dam) increased about 0.13 m while WL at Vientiane in Lao PDR rapidly increased about 1.32 m during the reporting week. Water levels at Chiang Khan and Vientiane reached about 0.03 m and 1.04 m higher than their LTA value, respectively, during May 24-30, which are still **considered abnormal**. At Nong Khai station in Thailand water levels significantly increased about 1.38 m, while at Paksane in Lao PDR, water level also significantly increased about 0.74 m during the reporting period. The water level at Nong Khai was about 0.18 m higher than its maximum value and

that at Paksane was about 2.68 m lower than its LTA value. The recently increased water levels at Paksane were obviously fluctuating due to hydropower operation and water released from upstream and the above-average rainfall in that area. The water levels at Vientiane and Paksane are shown in [Figure 9](#) below.

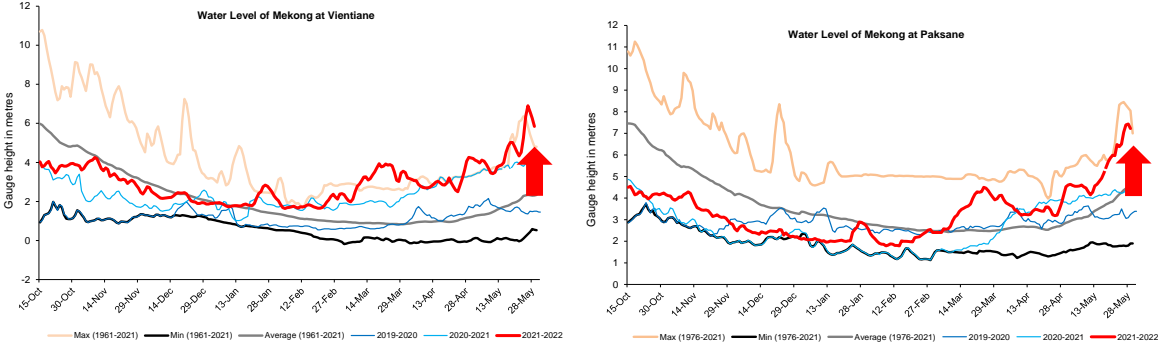


Figure 9. Water levels Vientiane and Paksane in Thailand and Lao PDR.

Nakhon Phanom to Pakse

Water levels from Nakhon Phanom in Thailand to Pakse in Lao PDR significantly increased between 0.50 m and 0.99 m, due to above-average rainfall in the catchment area of these stations during the reporting period and inflows from upstream. Water levels from Nakhon Phanom was about 0.35 m higher than its maximum value, while from Thakhek to Pakse they were staying close to their maximum level, **considered abnormal**. [Figure 10](#) shows the water levels at Nakhon Phanom and Pakse stations.

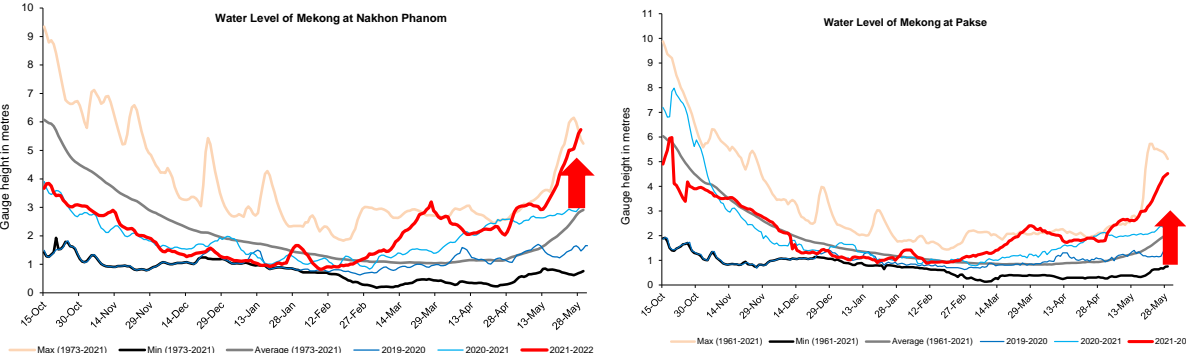


Figure 10: Water levels at Nakhon Phanom and Pakse of Thailand and Lao PDR.

Stung Treng to Kompong Cham/Phnom Penh to Koh Khel/Neak Luong

With some contributed inflow from the upstream part of the Mekong River and the 3S river (Sekong, Se San, and Sre Pok), the water levels from Stung Treng to Kompong Cham in Cambodia were significantly increasing during 24-30 May 2022. This week water level from Stung Treng to Kompong Cham increased from 0.95 m to 2.44 m, due to above-average rainfall

and inflow from upstream. The current water levels at Stung Treng and Kratie are staying close to their maximum value, **considering abnormal**.

This week the water levels at Stung Treng and Kratie, compared with recent years and their Max, Min and LTA are shown in [Figure 11](#).

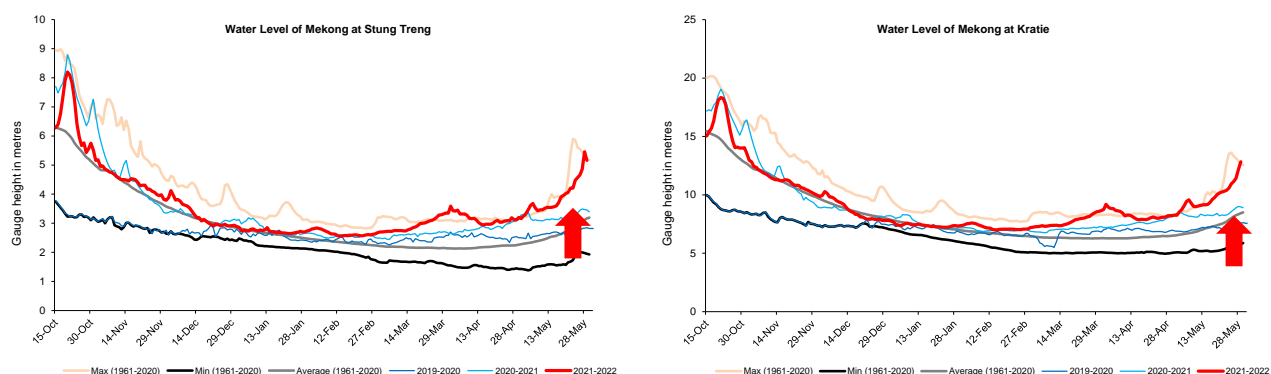


Figure 11: Water levels at Stung Treng and Kratie on the Mekong River.

At Chaktomuk on the Bassac River, due to more rainfall and inflows from upstream catchment during the report period, the water level increased about 0.68 m and stayed 1.00 m higher than its LTA value; while at Koh Khel, water level increased about 0.61 m and stayed 0.99 m higher than its LTA value. The water level at Prek Kdam on the Tonle Sap Lake increased about 0.60 m and was about 1.11 m higher than its LTA value. The water level at the Tonle Sap Lake (observed at Kompong Luong) was similar to Prek Kdam station’s water level. The recently increased water level was due to above-average rainfall and inflow contributed from upstream of the Tonle Sap Lake area during the reporting period. The water level at the Tonle Sap Lake (observed at Kompong Luong) followed the same trend of Prek Kdam station’s water level. **Water levels at these stations were staying higher than their LTA levels, which still considered normal.**

Tidal stations at Tan Chau and Chau Doc

This week, the water levels from 24 to 30 May 2022 at Viet Nam’s Tan Chau and Chau Doc were fluctuating between their LTA and maximum levels due to daily tidal effects from the sea. The fluctuation was between 0.27 m and 1.25 m. The current water levels at **Tan Chau and Chau Doc are higher than their LTA level, which considered abnormal.**

The Tonle Sap Flow

At the end of the wet season, when water levels along the Mekong River subside, the outflows of the Tonle Sap Lake return into the Mekong River and then to the Delta. This phenomenon normally takes place from end of September to October. Based on flow observation at Prek Kdam, the returned flow (inflow) into the Tonle Sap Lake was taking place since 29 May 2022.

[Figure 12](#) shows the seasonal changes of the inflow/reverse flow and the inflow of the TSL at Prek Kdam in comparison with the flows of 2019 and 2020, and their LTA level (1997-2020). Up to May 30 of this reporting period, **it was observed that the main inflow into Tonle Sap**

Lake increased due to rainfall and inflows from upstream. This increased inflow into the Tonle Sap Lake was most likely caused by inflows and rainfall from the catchment area. Up to present, the inflow into the Tonle Sap Lake condition in 2022 is higher than 2019, 2020, 2021 and even its LTA (1997-2021) inflow conditions. For next week, some rainfall is forecasted for the Tonle Sap area; thus, the outflow from the Tonle Sap Lake is likely continuing to slightly increase from the current level.

[Figure 13](#) shows seasonal changes in monthly flow volumes up to 30 May 2022 for the Lake compared with the volumes in 2019, 2020, 2021 and their LTA, and the fluctuation levels (1997–2021). It shows that up to May 30, **the water volume of the Tonle Sap Lake was even higher than 2019, 2020, 2021 and its LTA (112%), during the same period.** The figure is displayed in [Table 1](#), which indicates that the Tonle Sap Lake has been affected by water levels from the tributaries and rainfall in the surrounding sub-catchments and ***considered normal.***

This demonstrates the influence of the relationships of the reverse and out flows, water levels of the Mekong River, inflows from tributaries, and the flow direction in the complex hydraulic environment of the Tonle Sap Lake during the wet and dry seasons. The data show that about half of the annual inflow volume into the Tonle Sap Lake has originated from the Mekong mainstream. Thus, flow alterations in the mainstream could have direct impact on the Tonle Sap Lake water levels and on its hydrology.

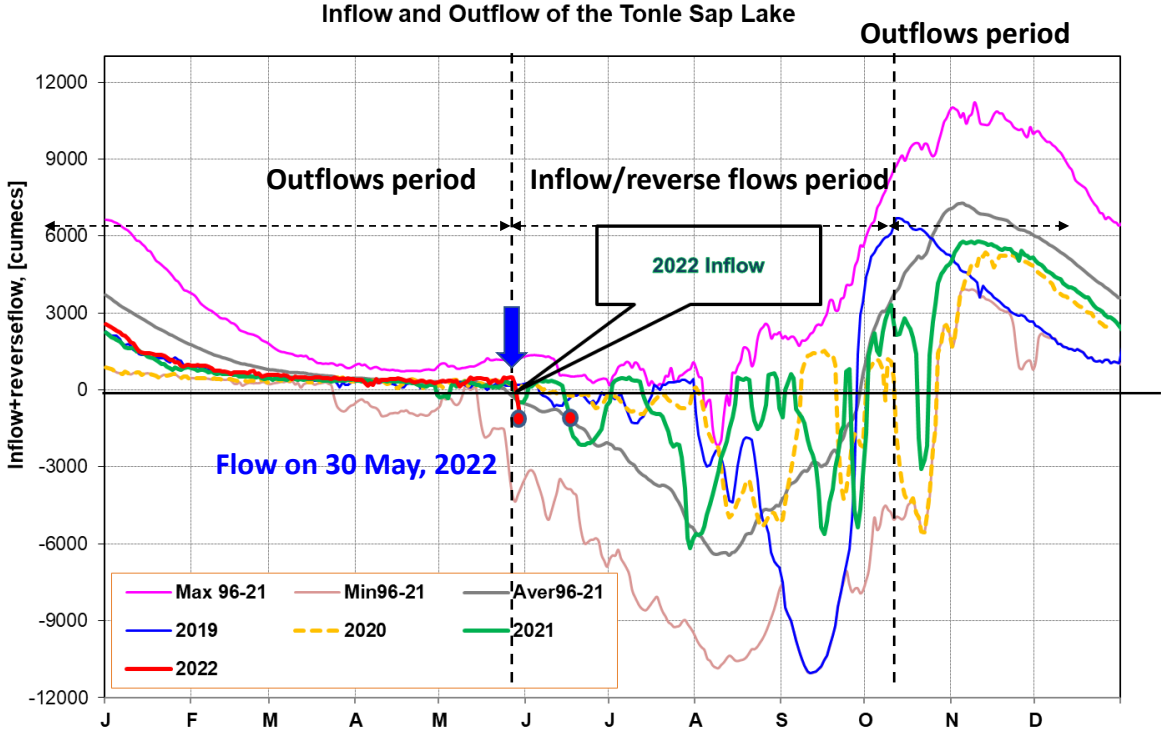


Figure 12: Seasonal change of inflows and outflows of Tonle Sap Lake.

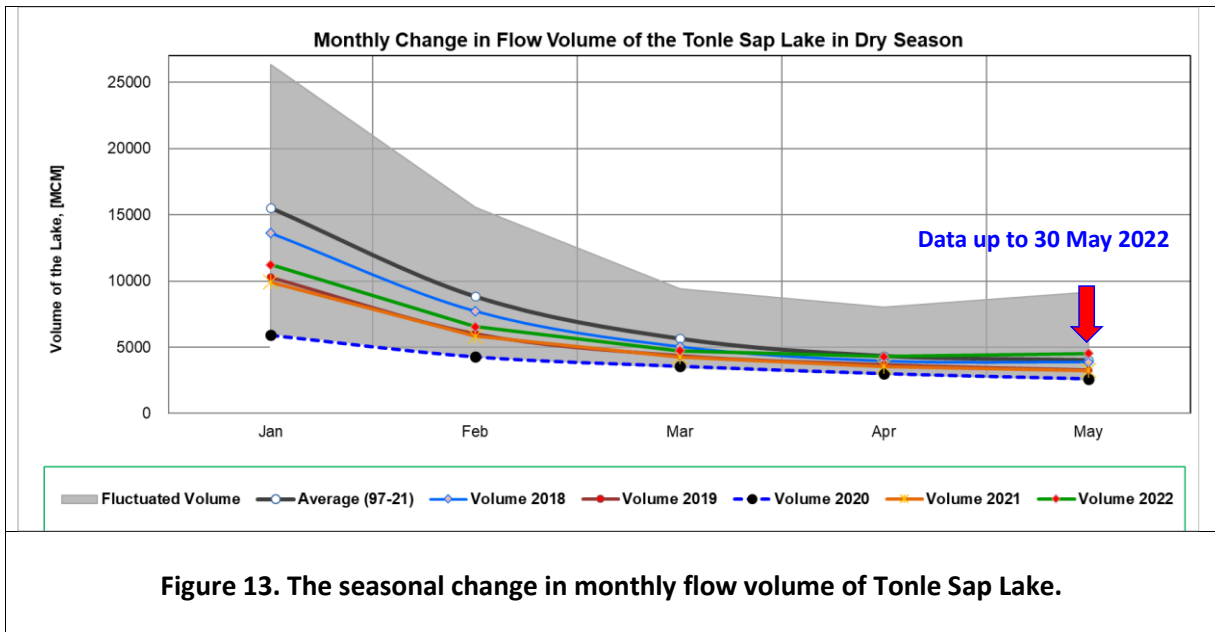


Table 1. The monthly change in the flow volume of Tonle Sap Lake.

Month	Average Volume (97-21) [MCM]	Max Volume [MCM]	Min Volume [MCM]	Volume 2018 [MCM]	Volume 2019 [MCM]	Volume 2020 [MCM]	Volume 2021 [MCM]	Volume 2022 [MCM]	Percentage of Volume in 2021 [%]
Jan	15523.23	26357.53	5906.80	13633.41	10285.31	5906.80	9923.80	11214.32	72.24
Feb	8837.89	15596.22	4198.60	7729.72	6019.30	4264.19	5832.97	6558.79	74.21
Mar	5654.18	9438.24	3347.07	5037.06	4354.62	3553.99	4264.88	4736.52	83.77
Apr	4346.65	8009.14	2866.91	3956.47	3667.47	2992.61	3556.68	4288.31	98.66
May	4030.23	9176.93	2417.81	3864.00	3266.43	2594.92	3240.78	4519.78	112.15
Jun	5708.30	13635.01	2468.70	5919.18	3517.06	2641.88	3798.29		
Jul	11493.25	28599.56	2925.86	12024.96	4001.99	2925.86	5346.73		
Aug	24666.69	39015.12	4433.46	22399.65	7622.71	5941.07	10547.80		
Sep	39634.03	65632.35	12105.31	53639.54	24194.19	12105.31	16382.34		
Oct	46873.44	73757.23	19705.50	48193.08	30358.38	20799.13	27318.21		
Nov	37823.16	60367.33	18534.61	31036.07	19112.65	27546.80	28982.93		
Dec	25126.11	38888.95	10563.49	18469.21	10577.29	18251.65	20170.76		
	Critical situation, compared with historical Min values								
	Normal condition, compared with LTA (Long term average)								
	Low volume situation, compared with LTA values								
Unit: Million Cubic Meter (1 MCM= 0.001 Km ³)									

4 Flash Flood in the Lower Mekong Basin

During May 24-30, the LMB was affected by two main weather factors. These include (i) The weak monsoon trough lay across upper part toward a low-pressure cell which covered upper Viet Nam and the Gulf of Tonkin during the early week then it moved upward to lie across Lao PDR and transferred to a low-pressure cell and (ii) the rather actively strong southwest monsoon prevailed over the Gulf of Thailand throughout the week.

These conditions caused moderate and heavy rainfall in the upper and middle parts on the last days of the week.

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

Weekly drought monitoring from 22 to 28 May 2022

Drought monitoring data for 2022 are available from Sunday to Saturday every week; thus, the reporting period is normally delayed by two days 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 May 22 to 28, as shown in [Figure 11](#), were mostly normal all over the region. The previous moderate drought disappeared. The region did not face any serious meteorological drought.

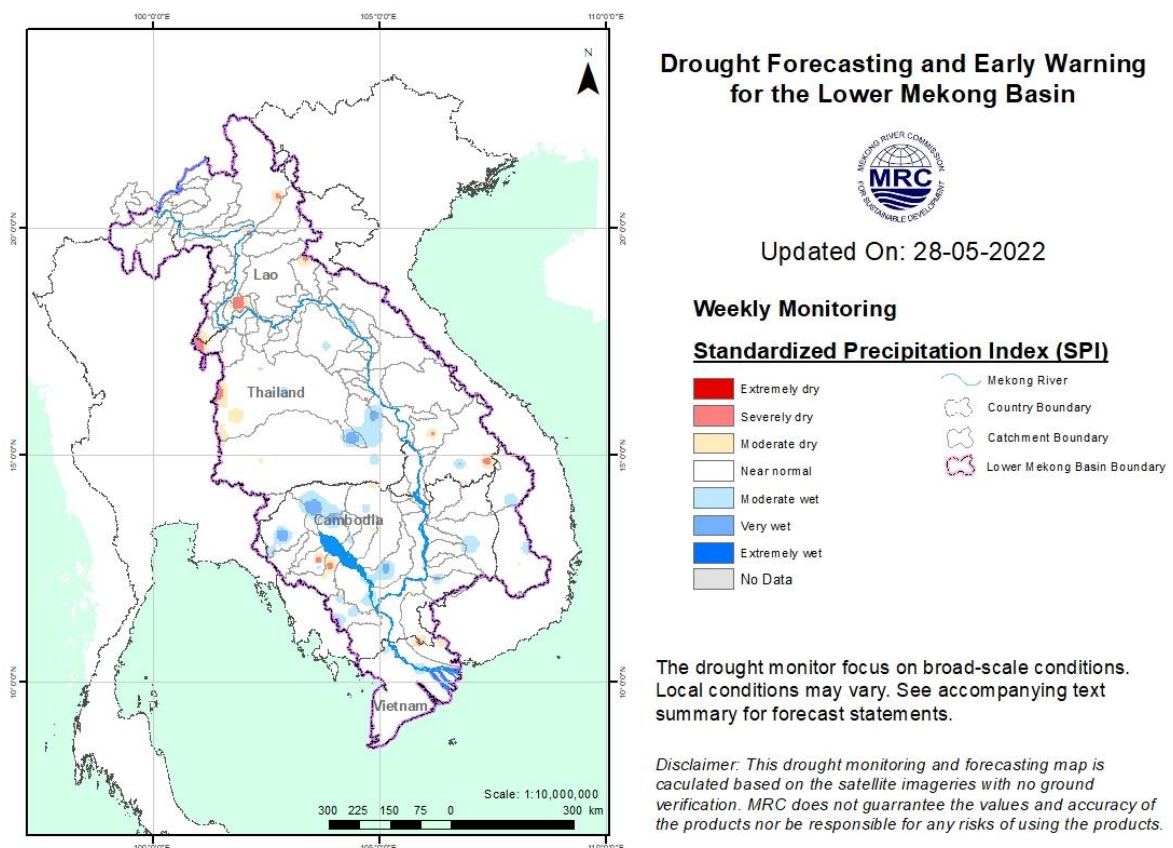


Figure 14: Weekly standardised precipitation index from May 22 to 28.

- **Weekly Index of Soil Water Fraction (ISWF)**

Unlike SPI conditions, the ISWF shows that from May 22 to 28, as displayed in [Figure 12](#), the LMB was relatively wet especially over the north, east, and south of the region. There was no agricultural drought during the monitoring week.

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.

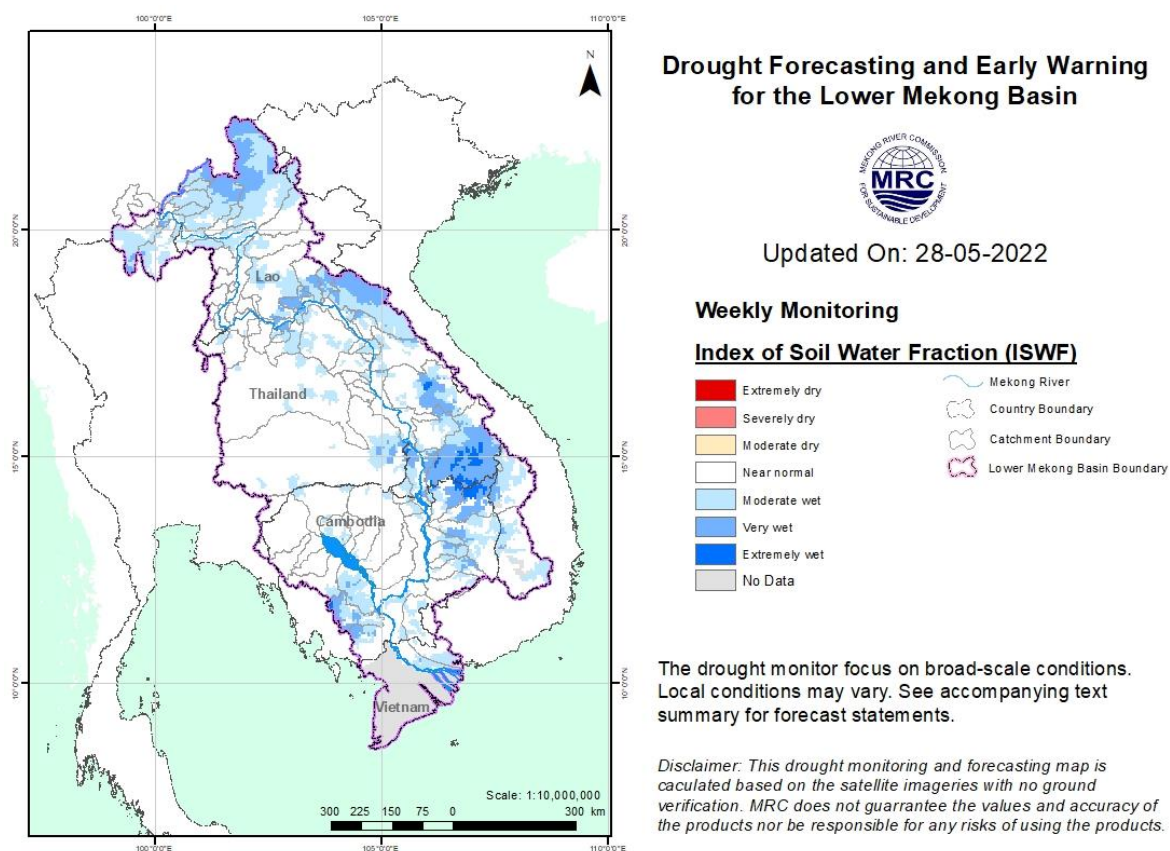
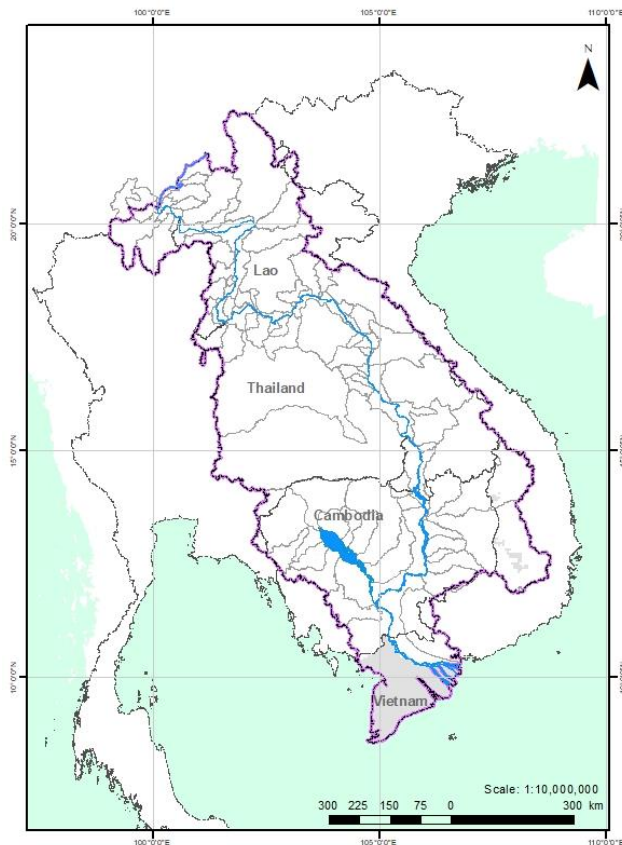


Figure 15: Weekly Index of Soil Water Fraction from May 22 to 28.

- **Weekly Combined Drought Index (CDI)**

The combined drought indicator, as displayed in [Figure 13](#), reveals that during May 22-28 the LMB was in normal condition all over the region. No drought threat was found.



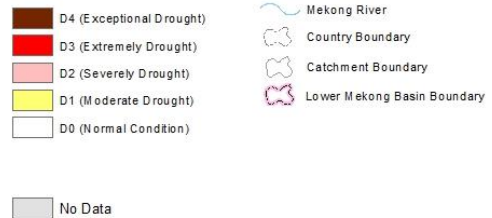
Drought Forecasting and Early Warning for the Lower Mekong Basin



Updated On: 28-05-2022

Weekly Monitoring

Combined Drought Index (CDI)



The drought monitor focus on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Disclaimer: This drought monitoring and forecasting map is calculated based on the satellite imageries with no ground verification. MRC does not guarantee the values and accuracy of the products nor be responsible for any risks of using the products.

Figure 16: Weekly Combined Drought Index during May 22-28.

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

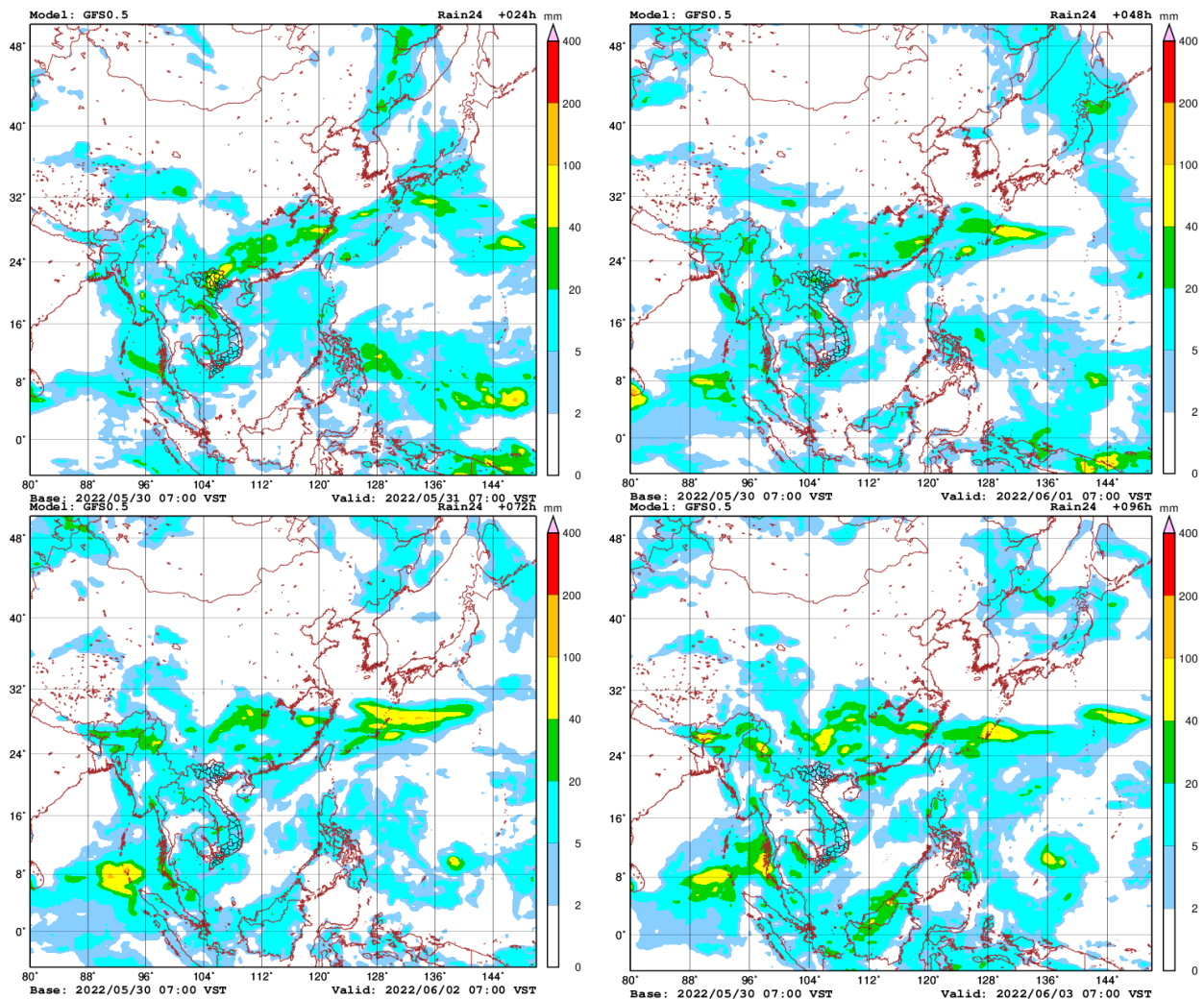
6 Weather and Water Level Forecast and Flash Flood Information

6.1 Weather and rainfall forecast

Based on the analysis of the synoptic meteorological information and result from the Global Forecast System (GFS) Model, in the coming week there may be two main factors affecting the LMB. They include (i) low pressure in the upper part and (ii) the prevailing weak Southwest Monsoon from the Gulf of Thailand to the lower part of the LMB.

During May 31 – June 6, in general, small rainfall (5-20 mm/24h) or no rain may occur in some areas of the LMB.

[Figure 14](#) shows accumulated rainfall forecast (24hrs) of the GFS model during May 31 – June 6.



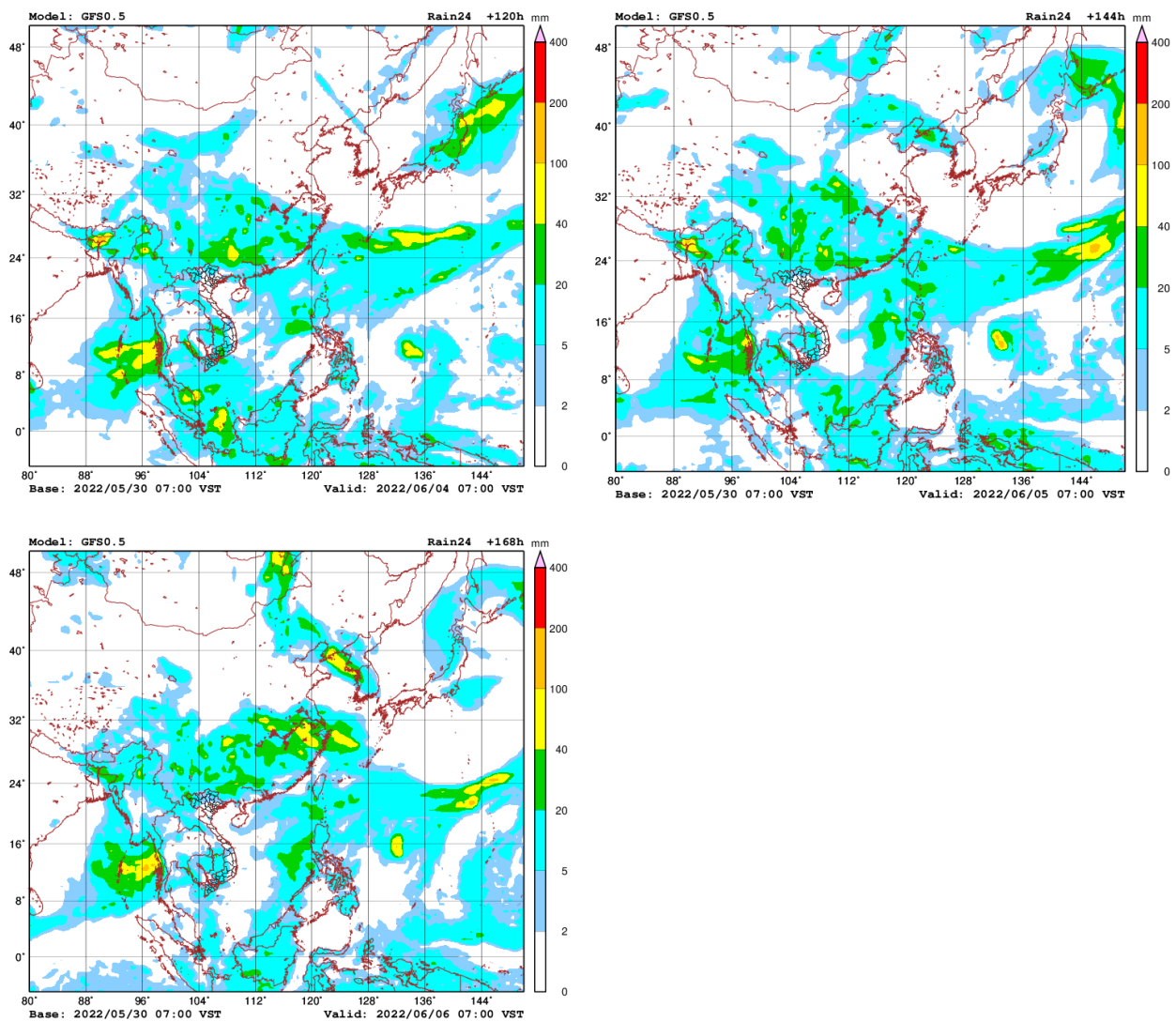


Figure 17: Accumulated rainfall forecast (24 hrs) of model GFS.

6.2 Water level forecast

Chiang Saen and Luang Prabang

Based on May 30's weekly river monitoring bulletin, the weekly forecast water level at Chiang Saen in Thailand is expected to increase about 0.15 m in the next seven days from 3.17 m to 3.32 m. The trend of water level at these stations will continue staying higher than its LTA. Rainfall is forecasted in the area in the next seven days.

For Luang Prabang in Lao PDR, the water level is likely to decrease about 0.39 m in the next seven days. The water level will remain close to its maximum value. Rainfall is forecasted in the area in the next seven days.

Chiang Khan, Vientiane-Nong Khai and Paksane

Water level at Chiang Khan station in Thailand is forecasted to suddenly go down by about 0.84 m for the next seven days. From Vientiane in Lao PDR to Nong Khai in Thailand, water

levels will also significantly decrease about 1.20 m in the next seven days. At Paksane in Lao PDR, water level will also decrease about 0.74 m due to less rainfall and inflows from the upper catchments and hydropower dam operation. Rainfall is forecasted in this area in the next seven days. The water levels at Nong Khai and Paksane will remain higher than their LTA level.

Nakhon Phanom to Pakse

Water levels from Nakhon Phanom to Mukdahan in Thailand will decrease about 0.50 m in the next seven days. The water levels from Khong Chiam in Thailand to Pakse in Lao PDR will slightly decrease about 0.08 m. Water levels at these stations will remain higher than their LTA level. Next week rainfall is forecasted in the area.

Stung Treng to Kompong Cham/Phnom Penh to Koh Khel/Neak Luong

From Stung Treng to Kratie on the Mekong River in Cambodia, the water levels will go down about 0.35 m over the next seven days. Water level from Kompong Cham down to Chaktomuk and downstream at Neak Luong will be up about 0.35 m. Rainfall is forecasted for the area between Stung Treng and Kompong Cham during next week.

The water levels of the Tonle Sap Lake at Prek Kdam and Phnom Penh Port as well as at Phnom Penh's Chaktomuk on the Bassac River will increase about 0.10 m over the next seven days.

Water levels at these stations will continue to stay higher than their LTA value, particularly in the lower part of the region from the Bassac in Phnom Penh to Koh Khel as well as from Tonle Sap at Prek Kdam to Phnom Penh Port, including the Tonle Sap Lake. Rainfall is forecasted for the low-lying area of Cambodia next week.

Tidal stations at Tan Chau and Chau Doc

For Viet Nam's Tan Chau on the Mekong River and Chau Doc on the Bassac River, water levels will be moving up and down between their Minimum and Maximum values following daily tidal effects from the sea.

[Table 3](#) shows the weekly River Monitoring Bulletin issued on May 30. Results of the started weekly river monitoring bulletin are also available at http://ffw.mrcmekong.org/bulletin_wet.php.

6.3 Flash Flood Information

Flash flood events are not likely to happen in the LMB. 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 <http://ffw.mrcmekong.org/ffg.php>.

Further detailed information on Flash Flood Information Warning, as well as on its explanation, is available for download [here](#).

6.4 Drought forecast

There are several climate-prediction models with different scenarios on the upcoming months until July 2022. The MRC's DFEWS adopts an ensemble model called the North America Multi-Model Ensemble (NMME), which averages all scenarios.

The global scale of rainfall prediction is used to see how the rain distribution looks like for the coming months. [Figure 15](#) shows the ensemble mean of daily average precipitation (mm/day) each month from May to July 2022 produced by the NMME.

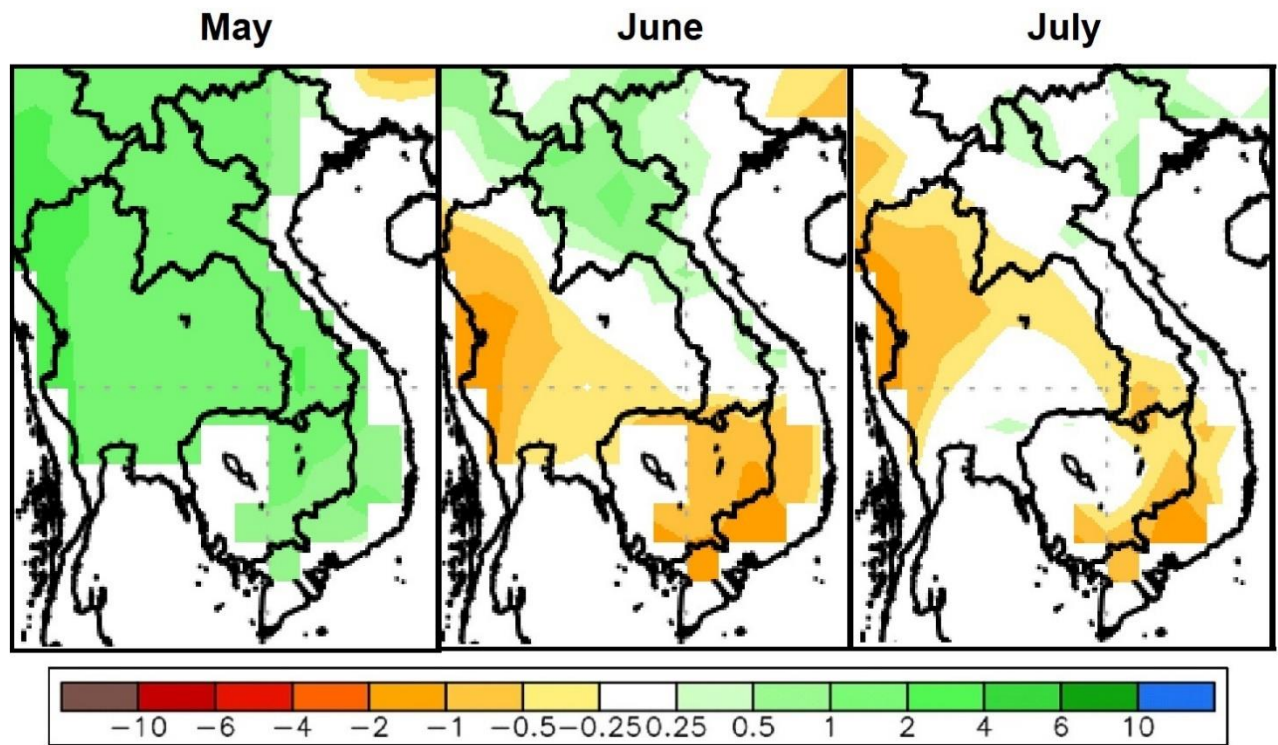


Figure 18. Daily average of monthly rainfall anomaly forecast from May to July 2022.

The ensemble prediction model based on the initial conditions in April 2022 reveals that the LMB is likely to receive ample amount of rainfall in May and below average rainfall in both June and July 2022 from the middle to the lower part of the region. Based on the weather forecast, condition in May is likely to be much wetter than normal year especially in the north and central parts of the LMB.

The 2021 dry season is relatively wetter than that of 2020 and the monsoon rain in 2022 might come on time or even earlier than normal year.

Table 2. Weekly River Monitoring Bulletin.



Mekong Bulletin

Mekong River Commission Secretariat (MRCS)
Regional Flood and Drought Management Centre (RFDMC)

P.O. Box 623 #576, National Road #2, Chak Angre Krom, Meanchey, Phnom Penh, Cambodia
Tel: (855-23) 425353, Fax: (855-23) 425363, Email: floodforecast@mrcmekong.org

Forecast period from: 31 May to 06 June 2022

Date: 30 May 2022

LOCATION	Country	Observed Rainfall (mm)	Zero gauge above M.S.L (m)	Min water level against zero gauge (m)	Observed W. level against zero gauge (m)		Forecasted Water Levels (m)						
					29-May	30-May	31-May	01-Jun	02-Jun	03-Jun	04-Jun	05-Jun	06-Jun
Jinhong		0.0	-	-	536.71	536.65							
Chiang Saen		0.0	357.110	0.00	3.21	3.17	3.14	3.09	3.05	3.08	3.13	3.22	3.32
Luang Prabang		0.0	267.195	2.53	10.30	10.02	9.77	9.69	9.65	9.56	9.50	9.55	9.63
Chiang Khan		37.0	194.118	1.91	8.51	8.04	7.71	7.50	7.40	7.34	7.22	7.16	7.20
Vientiane		0.2	158.040	-0.28	6.26	5.84	5.40	5.10	4.91	4.82	4.77	4.66	4.60
Nongkhai		0.0	153.648	0.33	6.15	5.76	5.34	5.07	4.91	4.84	4.80	4.70	4.66
Paksane		0.0	142.125	0.10	7.43	7.22	7.05	6.83	6.69	6.60	6.56	6.53	6.48
Nakhon Phanom		13.6	130.961	0.18	5.59	5.73	5.80	5.67	5.47	5.36	5.26	5.22	5.20
Thakhek		16.7	129.629	1.38	6.73	6.89	6.98	6.84	6.63	6.51	6.40	6.35	6.32
Mukdahan		0.0	124.219	0.72	5.20	5.38	5.53	5.62	5.52	5.34	5.23	5.13	5.10
Savannakhet		0.0	125.410	-0.65	3.49	3.80	4.01	4.15	4.08	3.95	3.88	3.80	3.77
Khong Chiam		0.0	89.030	1.02	5.70	5.46	5.71	5.90	6.04	5.90	5.70	5.57	5.45
Pakse		0.0	86.490	0.03	4.44	4.52	4.71	4.90	5.04	4.94	4.77	4.66	4.56
Stung Treng		24.5	36.790	0.32	5.46	5.16	5.05	5.11	5.23	5.35	5.25	5.1	5.02
Kratie		29.4	-1.080	3.06	12.18	12.83	12.53	12.41	12.48	12.60	12.73	12.60	12.43
Kompong Cham		nr	-0.930	0.65	5.92	6.72	7.38	7.05	6.90	6.99	7.11	7.25	7.12
Phnom Penh (Bassac)		nr	-1.020	1.58	3.26	3.57	3.72	3.60	3.53	3.58	3.64	3.71	3.65
Phnom Penh Port		-	0.000	0.14	2.04	2.25	2.39	2.27	2.20	2.26	2.32	2.39	2.33
Koh Khel		nr	-1.000	1.52	3.18	3.42	3.56	3.50	3.45	3.49	3.53	3.58	3.55
Neak Luong		nr	-0.330	0.81	2.17	2.34	2.65	2.90	2.75	2.66	2.70	2.73	2.80
Prek Kdam		nr	0.080	0.58	2.43	2.67	2.80	2.70	2.64	2.70	2.75	2.80	2.75
Tan Chau		0.0	0.000	-0.37	1.24	1.21	1.06	0.85	0.60	0.37	0.24	0.12	0.05
Chau Doc		12.0	0.000	-0.60	1.31	1.25	1.08	0.85	0.61	0.40	0.27	0.15	0.09

REMARKS:

-: not available.
*: reference stations without forecast.
nr: no rain.

River Flood Forecaster

KHEM Sothea

NOTE: Discharge at Luang Prabang may be influenced by hydropower operations (at both upstream and downstream).
For more info, please refer to this link:
<http://www.mrcmekong.org/>; http://ffw.mrcmekong.org/bulletin_wet.php; <http://ffw.mrcmekong.org/reportflood.php>

7 Summary and Possible Implications

7.1 Rainfall and its forecast

This week, rainfall was observed from Chiang Khan in Thailand from the upper part to Tan Chau and Chau Doc in Viet Nam at the lower part of the Mekong region. Compared with last week's amount, this week rainfall is lower and it mainly focussed at Chiang Khan in Thailand of the LMB.

Based on the forecasted rainfall from satellite using GFS data, rainfall is likely to take place in the areas from the upper to the lower part of the Mekong region including the 3S area and Mekong Delta of Viet Nam during 31 May-06 June 2022, varying from 0.50 mm to 150.00 mm. This indicates that the early starting wet season over the LMB.

7.2 Water level and its forecast

According to MRC's observed water level at Jinghong, it showed a **slight decrease of about 0.06 m from 536.71 m to 536.65 m during the weekly monitoring period from 24 to 30 May 2022 (recorded on 7:00 am)**. The outflow at Jinghong station decreased from 1,850.00 m³/s to 1,800.00 m³/s from 24 to 30 May 2022.

Water levels in the lower part of the monitoring locations in the LMB, during this reporting week, were decreasing from Chiang Saen down to Luang Prabang. Water levels at each key station from Chiang Khan to Paksan were rising and remaining higher and close to their maximum value. Water levels from Nakhon Phanom to Pakse significantly increased by about 1.00 m, which pushed the levels close to their maximum value during this week report.

In Cambodia, water levels from Stung Treng to Kratie also increased and were close to their maximum level. Water levels at Chaktomuk of the Bassac in Phnom Penh and Prek Kdam of the Tonle Sap in Cambodia were higher than their LTA level. Water level at Koh Khel was also higher than its LTA level during this week. The increased level in these stations was due to higher rainfall (above-average rainfall) and inflows from upstream in the region from 24 to 30 May 2022. Generally, this week's water levels were relatively lower than those of last week in the upper part in the LMB.

The current water levels at Luang Prabang, Chiang Khan, Vientiane, Nong Khai, from Nakhon Phanom to Pakse and from Stung Treng to Kompong Cham are higher or close to their Maximum Level, while WLs at the rest of stations in the Mekong River are staying higher than their LTA level, except the 2 tidal stations at Tan Chau and Chau Doc which are under their LTA value (due to tidal effect) during this monitoring period.

The flow volume of the Tonle Sap Lake was slightly higher than its LTA. From next week, the flow is expected to increase due to the above-average rainfall forecasted in the inflow catchments of the Tonle Sap Lake.

From Stung Treng to Kompong Cham, water levels will go up and from Chaktomuk in Phnom Penh the water levels will increase for the next 7 days. The water levels – at Neak Luong on

the Mekong River, from Prek Kdam to Phnom Penh Port on the Tonle Sap, and Koh Khel on the Bassac – are forecasted to continue staying higher than their LTA level.

The situation in Tan Chau on the Mekong River and Chau Doc on the Bassac River is expected to remain fluctuating. The current fluctuation of water level is in between their Minimum and Maximum levels, which considered critical.

Since the fourth week of October 2021, water levels across most monitoring stations in the LMB have significantly dropped to the level lower than their LTA (from upper to lower stretches within the LMB). For a more complete preliminary analysis of the hydrological conditions in the LMB over July–December 2020, November 2020 to May 2021 and June to October 2021 see this [Situation Report](#).

The contribution to the Mekong River’s flow from the UMB in China (Yunnan component) is about 16% by the time the river discharges through the Mekong Delta into the Sea. By far the major contribution comes from the two major ‘left-bank’ (Eastern) tributaries between Vientiane – Nakhon Phanom and Pakse – Stung Treng, which together contribute more than 40% of the flows.

7.3 Flash flood and its trends

With the predicted rainfall for the coming week as mentioned earlier in [section 6.1](#), major flash floods are not likely to happen in the LMB.

7.4 Drought condition and its forecast

Drought conditions of the LMB from 22 to 28 May 2022 were normal in all areas from north to the south. There was no drought threat over the region.

For the upcoming three months’ forecasts, the LMB is likely to receive ample amount of rainfall in May and below average rainfall in both June and July 2022 from the middle to the lower part of the region. Based on the weather forecast, condition in May is likely to be much wetter than normal year especially in the North and central parts of the LMB.

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

Table A1: Weekly observed water levels

2022	Jinghong	Chiang Saen	Luang Prabang	Chiang Khan	Vientiane	Nongkhai	Paksane	Nakhon Phanom	Mukdahan	Pakse	Stung Treng	Kratie	Kompong Cham	Phnom Penh (Bassac)	Koh Khei	Neak Luong	Prek Kdam	Tan Chau	Chau Doc
24-05-2022	536.71	4.75	10.51	7.91	4.52	4.38	6.48	4.74	4.47	3.60	4.21	10.39	4.97	2.89	2.81	2.08	2.07	0.27	0.31
25-05-2022	536.68	4.54	10.43	8.87	5.24	4.89	6.38	5.01	4.71	3.80	4.48	10.57	5.11	2.92	2.80	2.10	2.05	0.43	0.48
26-05-2022	536.71	4.02	10.12	9.60	6.36	5.76	6.50	5.02	4.91	4.00	4.57	10.94	5.24	2.97	2.51	2.12	2.04	0.72	0.76
27-05-2022	536.64	3.58	10.98	9.30	6.90	6.67	7.05	5.05	4.91	4.16	4.66	11.14	5.42	3.01	2.88	2.12	2.16	1.10	1.23
28-05-2022	536.72	3.37	10.58	8.95	6.59	6.60	7.39	5.31	4.99	4.36	4.86	11.40	5.64	3.11	3.06	2.14	2.28	1.22	1.31
29-05-2022	536.71	3.21	10.30	8.51	6.26	6.15	7.43	5.59	5.20	4.44	5.46	12.18	5.92	3.26	3.18	2.17	2.43	1.24	1.31
30-05-2022	536.65	3.17	10.02	8.04	5.84	5.76	7.22	5.73	5.38	4.52	5.16	12.83	6.72	3.57	3.42	2.34	2.67	1.21	1.25

Table A2: Weekly observed rainfall

2022	Jinghong	Chiang Saen	Luang Prabang	Chiang Khan	Vientiane	Nongkhai	Paksane	Nakhon Phanom	Mukdahan	Pakse	Stung Treng	Kratie	Kompong Cham	Phnom Penh (Bassac)	Koh Khei	Neak Luong	Prek Kdam	Tan Chau	Chau Doc
24-05-2022	0	0	1.4	0	0	2	17.8	4	13.5	2.6	9.5	4	7.4	2.5	1.1	0.5	0	5.4	5
25-05-2022	0	0	0	3.8	0.8	1.3	0.1	17.2	0	0	27.5	0	0	0	0	0	0	0	0
26-05-2022	0	0	0	0	0	0	0	0	2	0	0	0	0	28	0	0	0	0	0
27-05-2022	0	3.5	0	0	0	0	0	7.1	0	0	0	0	5.6	0	0	0.9	0	0.8	0
28-05-2022	0	0	0	0	0	0	0	40.4	0	91.6	8.5	33.1	90.2	28.1	8.1	32.5	0	2	0.4
29-05-2022	0	0	0	0	0	3.6	125.5	0	0	28	10	31	0	3.4	0	0	63.4	0.8	5
30-05-2022	0	0	0	37	0.2	0	0	13.6	0	0	24.5	29.4	0	0	0	0	0	0	12



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