

Mekong Environmental Resilience Week

14 September 2023

Parallel Session A: Extreme Weather Events, Changing River Flows, and Rising Sea Levels

Eastin Grand Hotel Sathorn
Bangkok, Thailand



Parallel Session A: Extreme Weather Events, Changing River Flows, and Rising Sea Levels



Dr Thanapon Piman
Senior Research Fellow, SEI Asia
MODERATOR



Mr Nguyen Huu Thien
Mekong Delta Ecosystems Expert,
Can Tho



Dr Piyatida Ruangrassamee
Lecturer, Chulalongkorn University

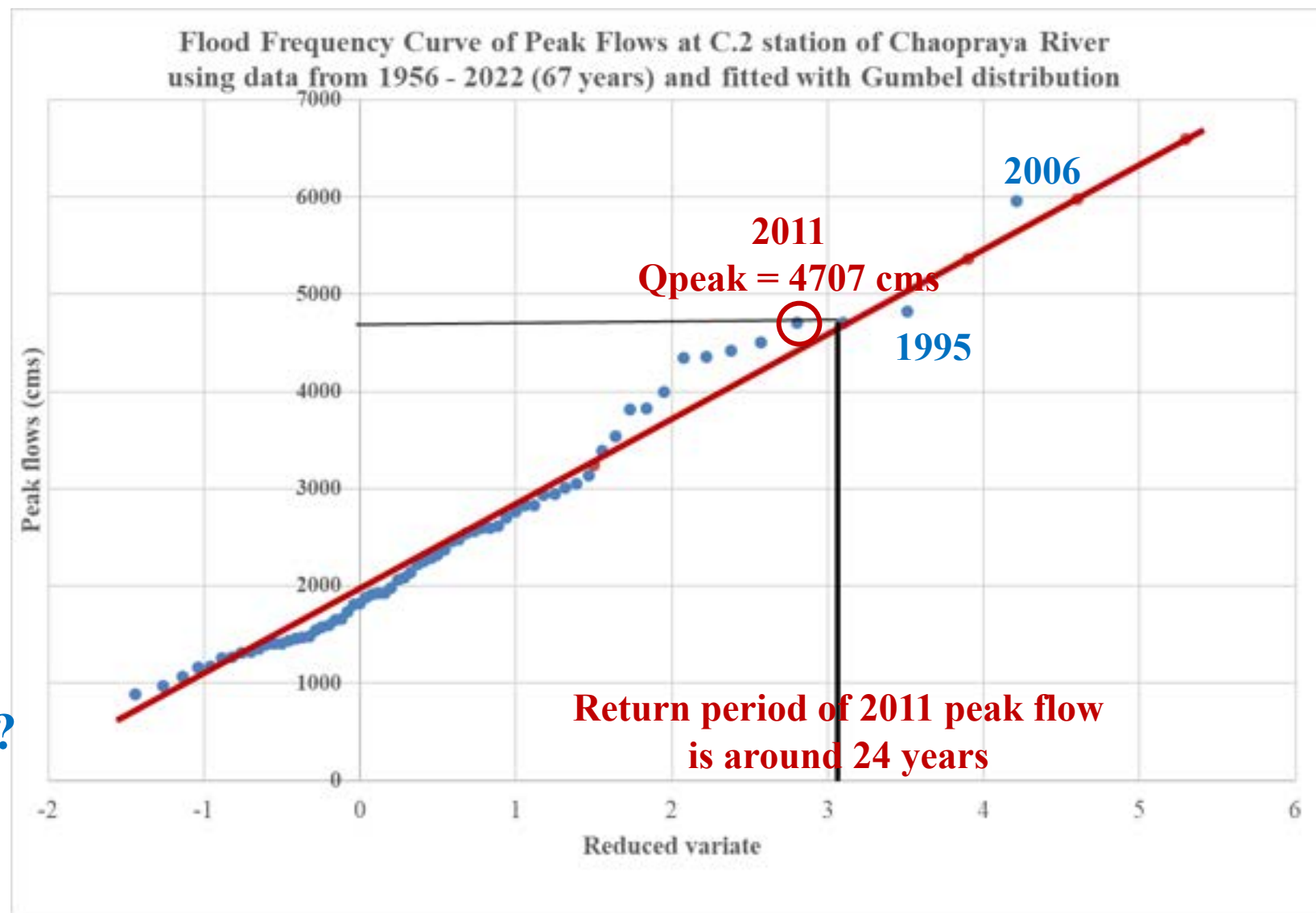


Dr Sothea Khem
River Flood Forecasting Specialist,
Mekong River Commission
Secretariat



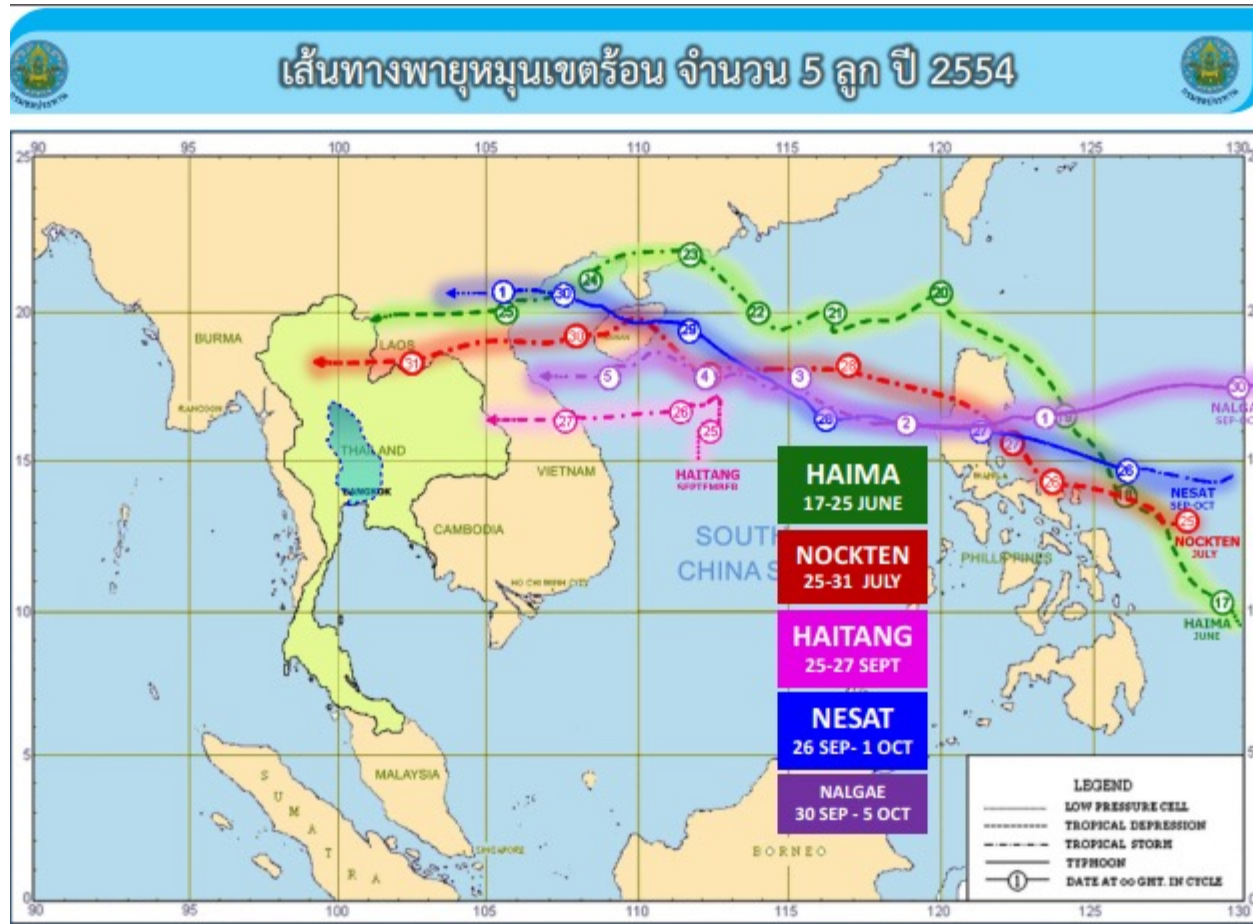
Extreme events?

climate and hydrological extreme events or damage extreme events?



variation vs. climate change?

To investigate climate change impacts, regional analysis is needed



Policy actions:

Social: Knowledge and raising awareness (settlement, land use)

Research: Provide resources for research networking platform (sharing data and analysis) for regional analysis



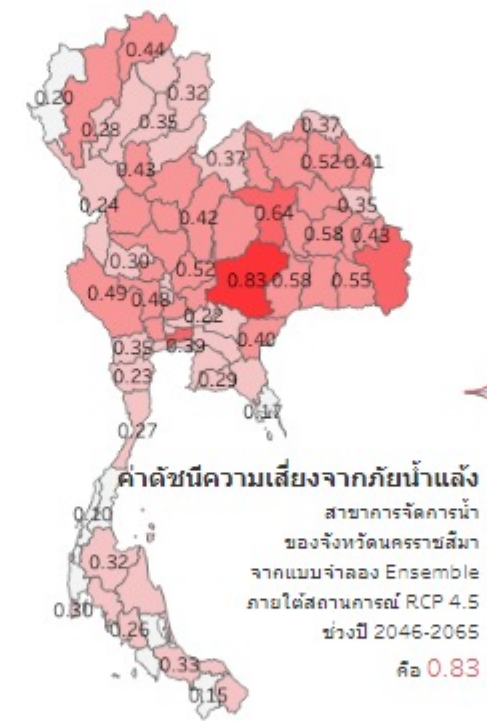
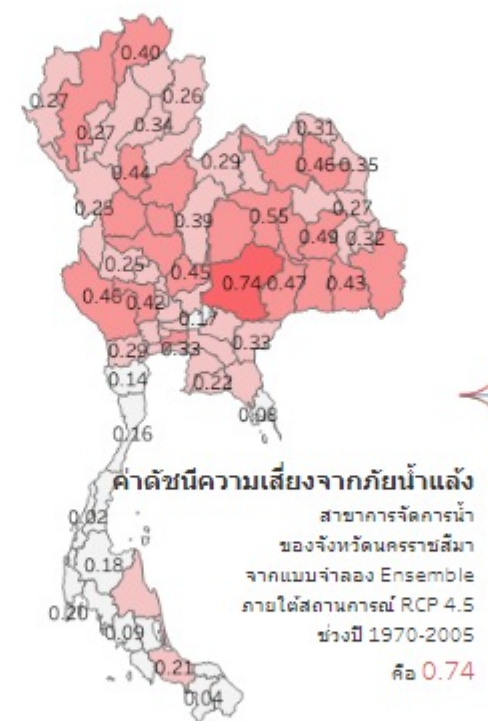
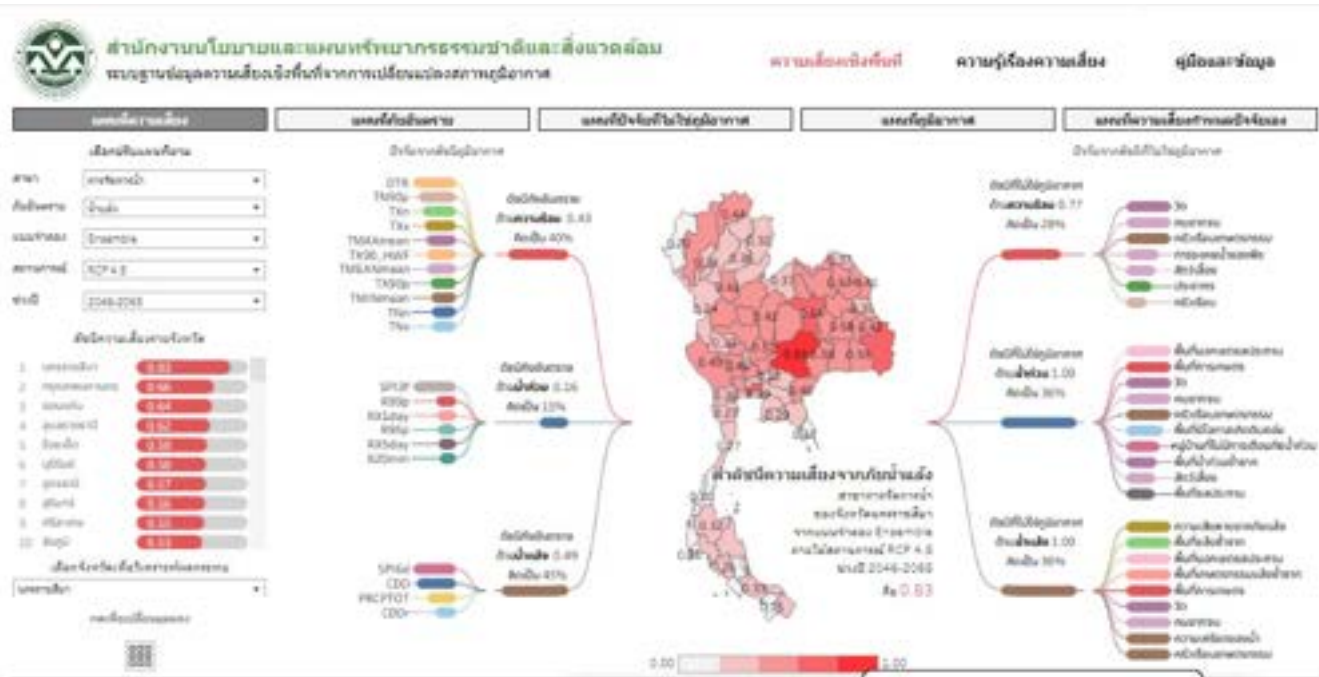
Office of The National Water Resources (ONEP) to Department of Climate Change and Environment (DCCE) (5 July 2023)

Drought risk map

Spatial risk maps from climate change

1970 - 2005

2046 - 2065 RCP 4.5

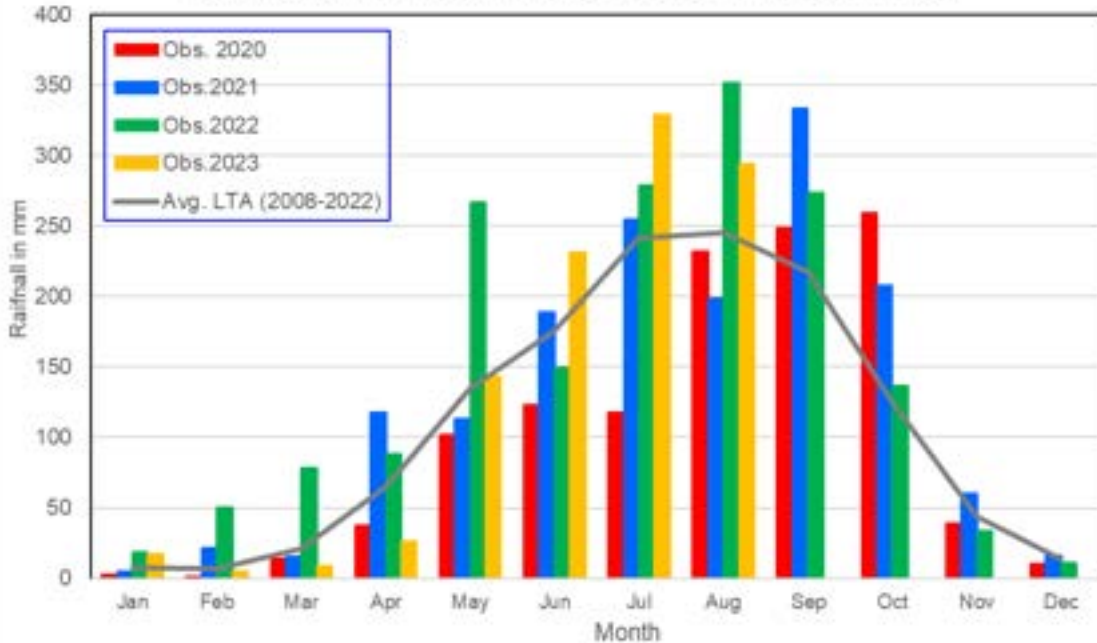


<https://climate.onep.go.th/th/topic/database/riskmaps/>

HYDROLOGICAL SITUATION UPDATE in the lower Mekong Basin

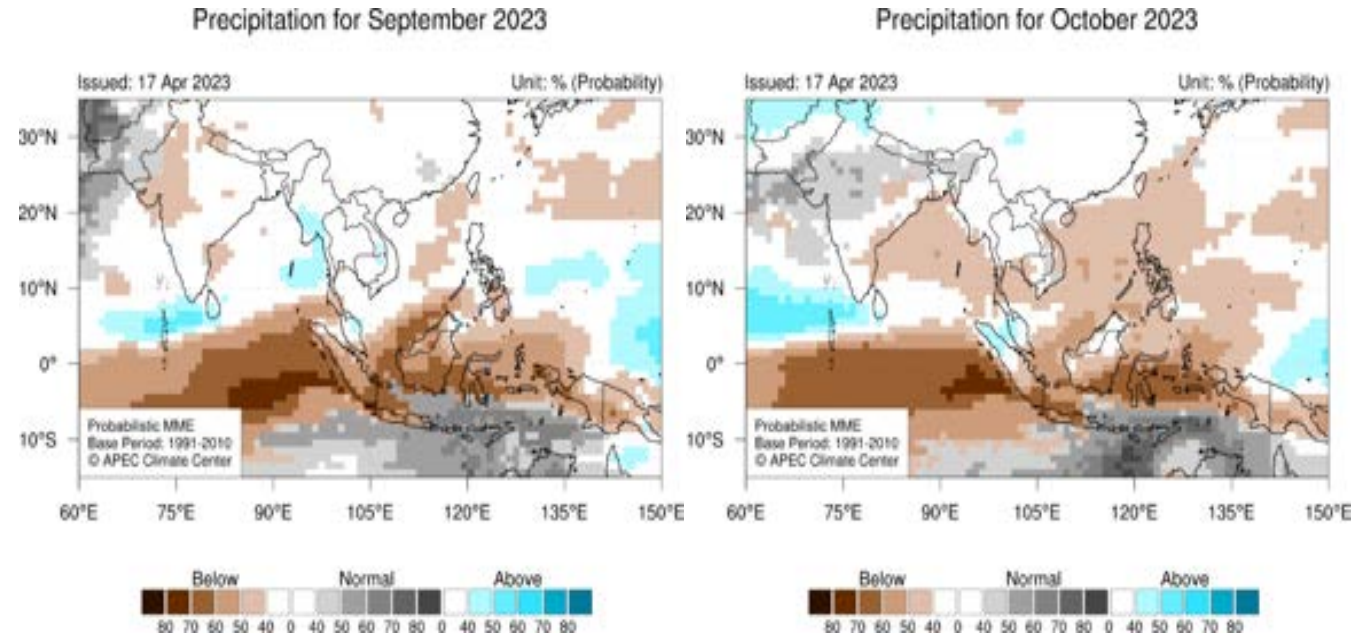


Rainfall Condition



The wet season from June to August of 2023 exhibited variations in **rainfall** patterns. Rainfall was below LTA values from January to April but exceeded LTAs from May to August. May, July, and August saw rainfall levels surpassing those of 2020 and 2021, with wet conditions characterizing the early wet season.

Rainfall Outlook

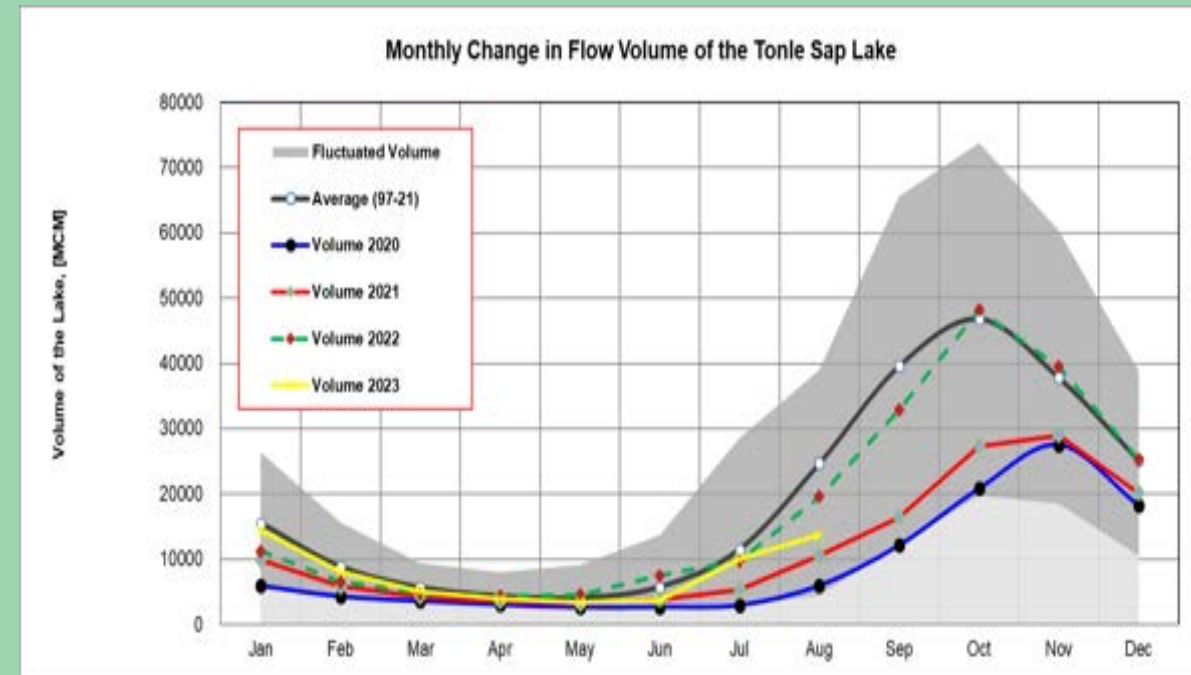
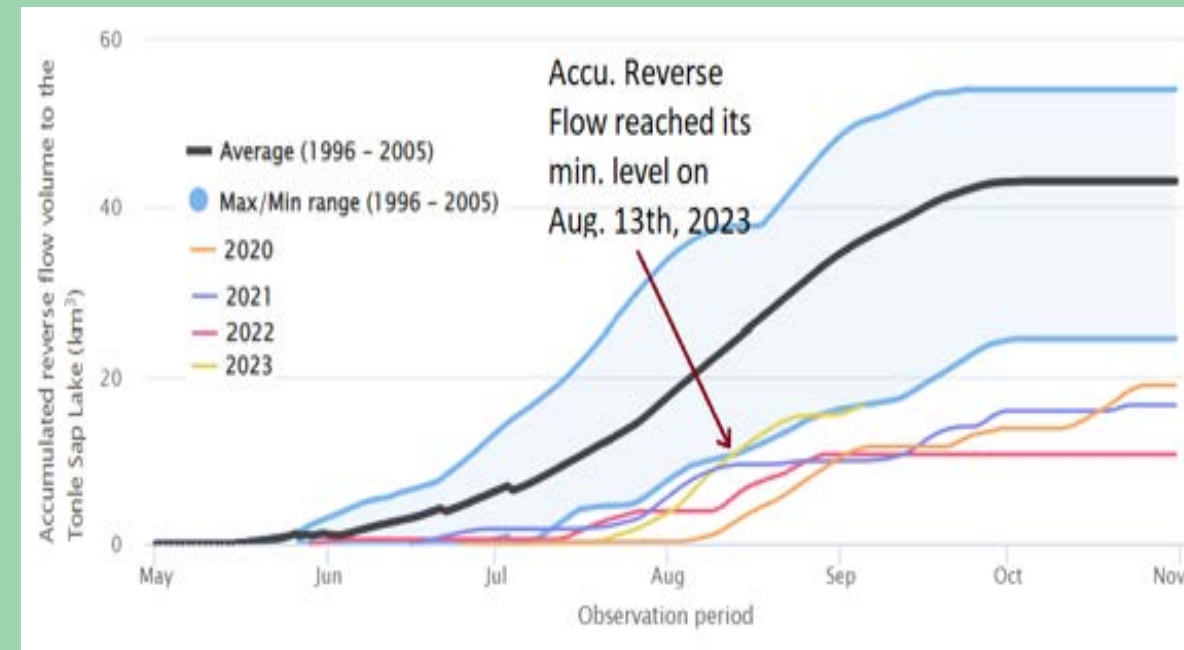


- **Oct-Nov:** Near- or below-average rainfall is predicted over central Viet Nam, southern Lao PDR, Cambodia and southern Viet Nam (**50% to 80% of chance**). While the other parts of LMB would experience slightly above- or near-average rainfall.

Flow to Tonle Sap Lake

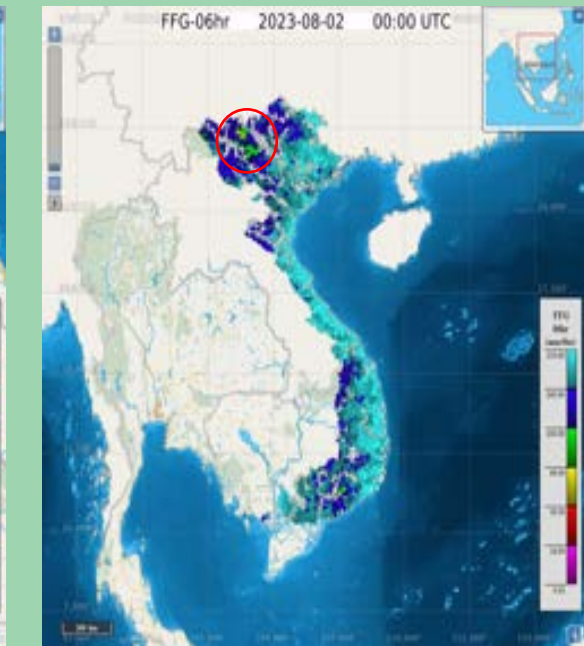
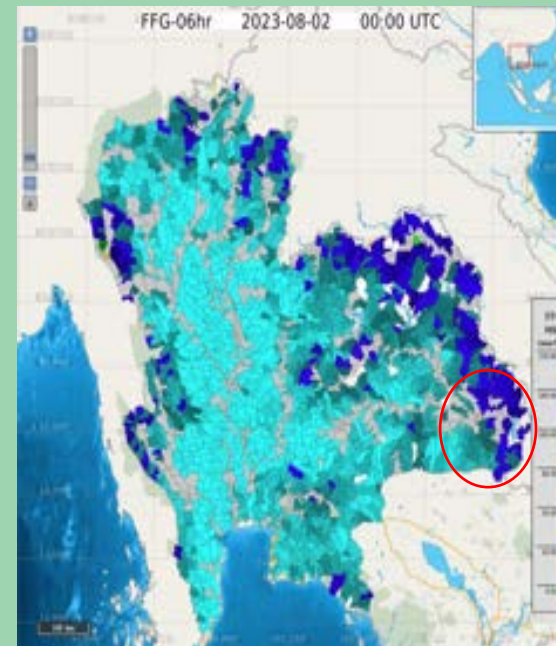
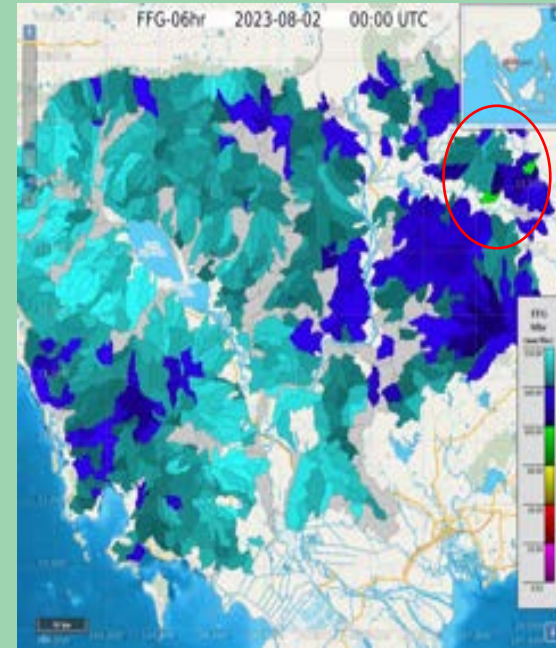
Water volume of the Tonle Sap Lake was higher than 2020, 2021, 2022 and stayed close to its LTA (about 56%), This demonstrates the influence of the relationships of the reverse and out flows, water levels of the Mekong River, inflows from tributaries, and the flow direction in the complex hydraulic environment 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.



Flash flood in the LMB

- Moderate rain occurred in some areas of the Northwest in the last 24 hours.
- Some areas in the Southeast were nearly saturated state
- In the next 6 hours, the flash flood was likely be detected in the coastal and 3S areas of Cambodia, Southern part in Lao PDR, North-east of Thailand and Northern area of Viet Nam.



Conclusion

The Mekong River Basin supports nearly 70 million people, providing energy, transport, tourism and other income-generating development opportunities. As climate and weather patterns become more volatile, flood and drought events in the Mekong have become more frequent and intense with growing potential to cause devastating damage to the region's food security and economies. Those communities that were unprepared have suffered the most.

Flood risks can be minimised through various forms of land-use, development and building controls, regional flood emergency planning, and improved preparedness. Flood preparedness requires coordinated management by all concerned parties such as water resource managers, policy-makers, and the private sector to change course from a 'traditional' flood management approach towards an approach that coordinates the needs of different stakeholders, including national agencies and affected provinces.

Unlike flood, drought only brings socio-economic hardship to riparian countries, especially riverine communities. The LMB has been experiencing severe drought hazards with serious economic losses due to damages of agricultural crops, negative impacts on the environment, and effects on people's livelihoods.

The Mekong River Commission (MRC) plays a vital role in basin-wide river monitoring and flood and drought forecasting. The organisation has been working tirelessly to improve its information system to provide better access to the public, including not only the policy makers and academia but also ordinary Mekong people.

Thank you!

