



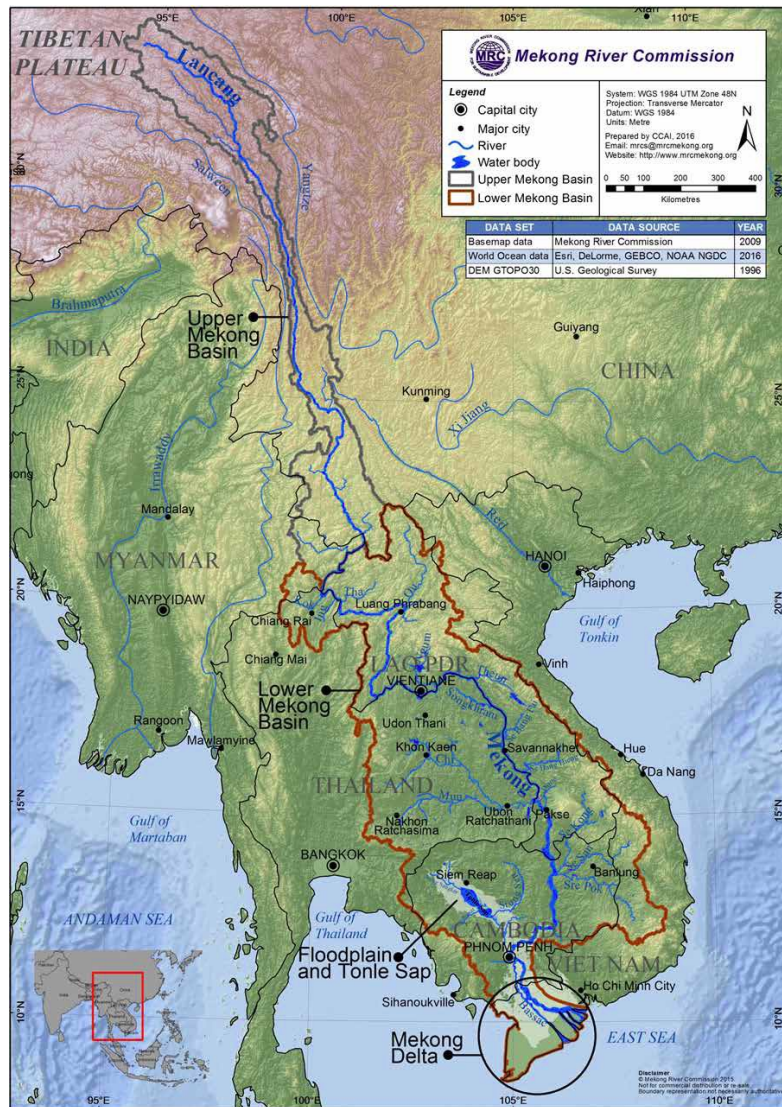
MEKONG CLIMATE CHANGE ADAPTATION STRATEGY & ACTION PLAN AND DISASTER RISK MANAGEMENT

GLOBAL PLATFORM FOR DRR SIDE-EVENT GOVERNANCE OF CLIMATE CHANGE AND TECHNOLOGICAL RISKS IN TRANSBOUNDARY WATER BODIES, 27 MAY 2022

Presented by Bountieng Sanaxonh, Director of Planning Division, MRCS



The Lower Mekong Basin and the Mekong River Commission



- Mekong River Commission is intergovernmental organization, joining cooperation between Cambodia, Lao PDR, Thailand, Vietnam
- Mekong Agreement 1995
- Lower Mekong Basin countries identified amongst the most vulnerable countries to CC in the world
- 2007: MRC Council requested the MRCS to develop the Climate Change Adaptation Initiative (CCAI) aimed at: basin scale analysis of CC impacts on water resources, capacity building, awareness raising, development of basin strategy (MASAP)

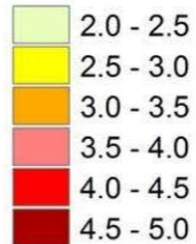
Climate Change impacts in LMB

GFDL-CM3 RCP8.5

Temperature change (°C)

in 2081–2100 with respect to 1986–2005

Medium climate sensitivity



Coordinate system

System: WGS 1984 UTM Zone 48N

Projection: Transverse Mercator

Datum: WGS 1984

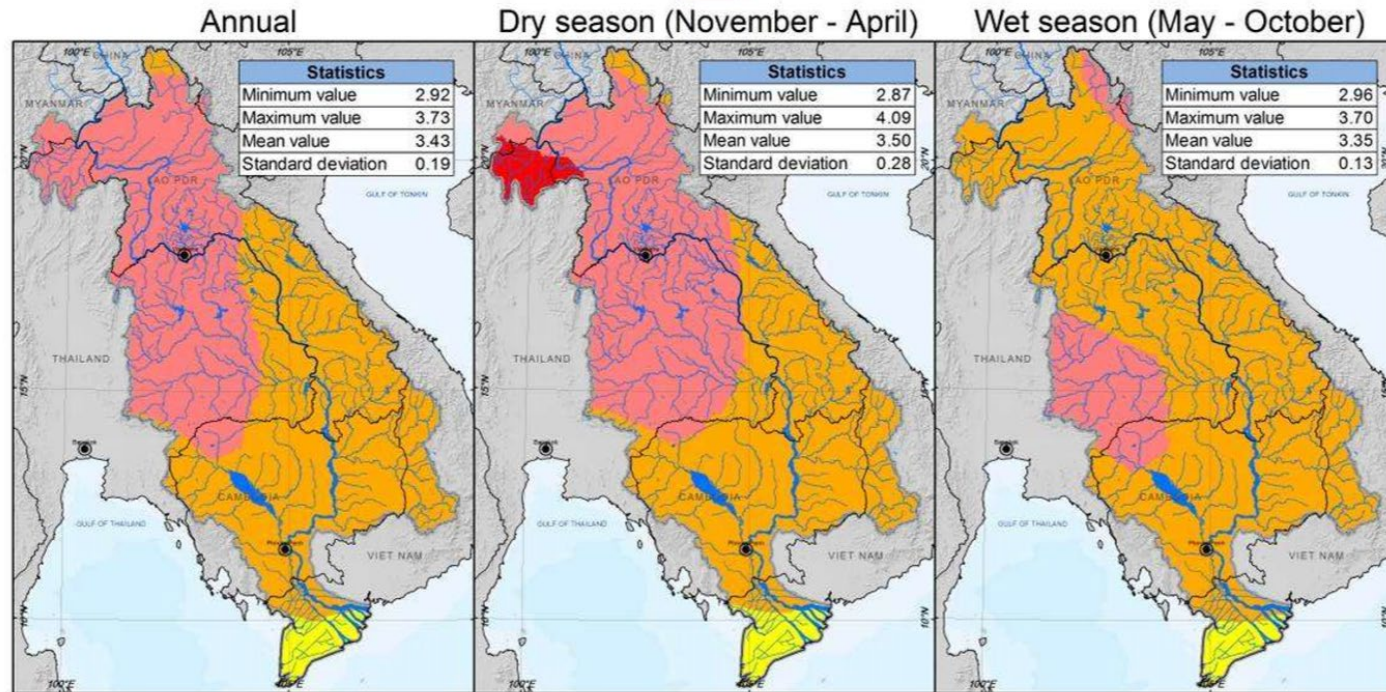
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Prepared by

CCAI, January 2015

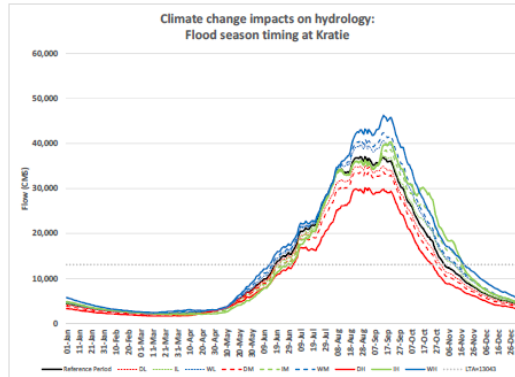
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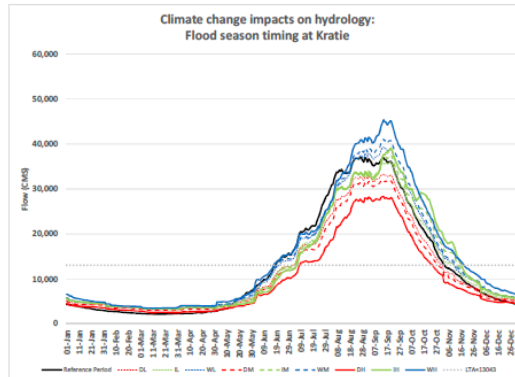


- Temperature increase
- Low flow and fluctuation on the mainstream and its tributaries, flow less than monthly minimum flow average,
- Flow into Tangle Sap great lake late, water level not reaches its peak as annual average especially Tangle Sap Lake,
- Occur flood and drought more frequent severe affected on agriculture, impact on storage water in the reservoirs
- Lose function of watershed and water sources in the basin.

Climate Change Impacts on Mekong Hydrology

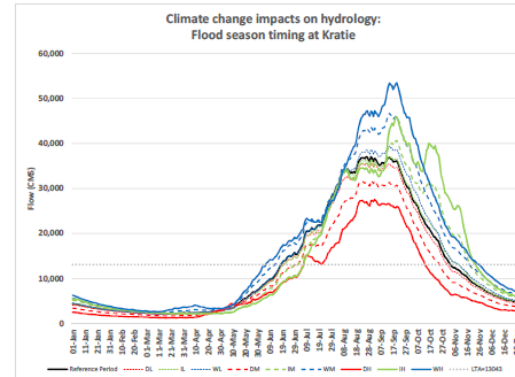


2030, climate change scenarios

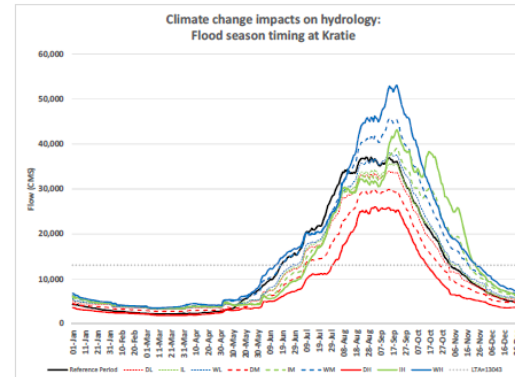


2030, climate change and development scenarios

	2030		2060	
	CS	CS + DS	CS	CS + DS
River flow	Annual	-22% 25%	-34% 38%	
	Dry season	19% 17%	21% 23%	
	Wet season	-25% -6%	-41% -29%	
River level	Annual	1.49 1.18	1.79 1.68	
	Dry season	-0.66 -0.12	-1.14 -0.74	
	Wet season	-0.03 -0.42	-0.04 -0.31	
Flood timing	Onset	4 15 15 20	2 17 17 21	
	Offset	0 14 15 15	0 3 15 15	
	Duration	26 30 20 17	46 41 25 25	
Flood volume	Peak flow	-19% -23%	-26% -30%	
	Peak level	1.60 2.16	2.17 2.83	
	Volume	6% -5%	7% -4%	
Drought	1-day flow	-26% 17%	-49% -13%	
	7-day flow	-3% 53%	-4% 56%	
	30-day flow	-25% 16%	-43% -13%	
Drought	1-day level	-0.37 0.34	-0.68 -0.18	
	7-day level	-0.04 0.74	-0.05 0.77	
	30-day level	-0.37 0.23	-0.61 -0.19	



2060, climate change scenarios



2060, climate change and development scenarios

At key monitoring stations on the mainstream, changes assessed for the different climate and development scenarios in terms of :

- river flow,
- water level,
- wet season duration and peaks,
- dry season minimums

Summary of projected hydrological impacts at Kratie monitoring station under three model scenarios (wetter, drier, increased seasonal variability) and three emissions scenarios (RCP2.6, RCP4.5, RCP8.5) with and without development impacts to 2030 and 2060

(Source: MRC, 2017. Technical Report of Climate change impacts on hydrology of the Lower Mekong Basin)

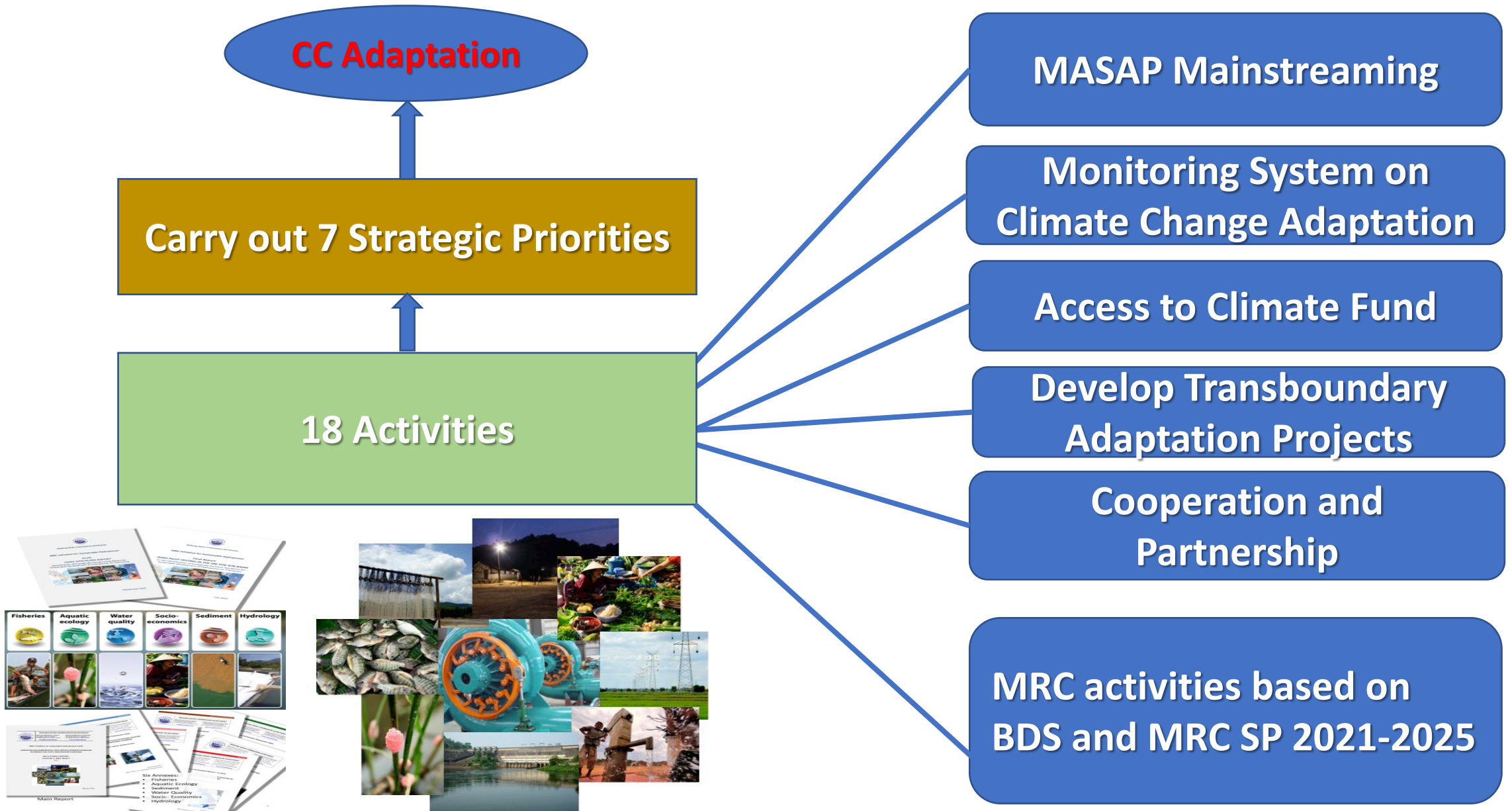
MASAP Strategic Priorities

MASAP is a Statement of the LMB countries of strategic priorities and actions at basin level to *address CC risks and strengthen basin-wide resilience.*

Strategic priorities:

1. **Mainstreaming** CC into regional and national policies/programs/ plans
2. Regional and international **cooperation and partnership** on adaptation
3. Preparation of **transboundary**, gender sensitive adaptation options
4. Access to adaptation **finance**
5. **Monitoring**, data collection and sharing
6. **Capacity development** for CC adaptation strategies/ plans
7. **Outreach** of MRC products on CC and adaptation.

Action Plan for Basin Adaptation



MRC SP activities 2021-2025 are implementing

- Support options for water resources development including increasing natural and constructed water storage to support water security.
- Promote and provide guidance on irrigation development opportunities, for adaptation to climate change, improved food security.
- Improved cropping patterns and resilient production system against natural disasters.
- Support irrigation technologies for future application in the LMB, produce manual user of the technologies for practical use.
- Support mainstreaming of climate change adaptation into regional and national strategies, plans and projects, e
- Enhance water security as it relates to floods and droughts, ensuring enough water in the dry season to support productive uses including GW study.
- Developed flood and drought adaptation strategy and guidelines for further implementation
- Support review opportunities for coordinated flow management to increase efficiency, reduce impacts and help mitigate floods and droughts
- Coordinated water infrastructure operations.

MASAP Implementation and Disaster Risk Reduction

MASAP mainstreaming at regional level: integrate CCA into MRC sectoral strategies and BDS

Mainstream MASAP perspectives into flood management and mitigation strategy update

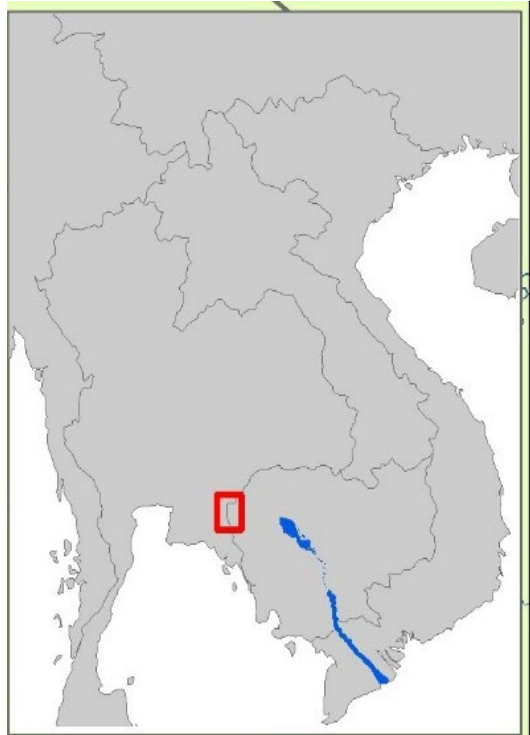
MRC CCAI products on related to disaster risks disseminated:

- A range of CC scenarios were analyzed and selected for the LMB
- Basin-wide assessments of the impacts of CC scenarios on water and water related resources were done
- Historical trends of hydroclimatic conditions including extreme events (*tropical storms and typhoons*) were statistically analyzed
- Specific methodologies were developed to assess CC impacts on flood and drought patterns

Achieving Resilience to the Flood Impacts of Climate Change

- Key Adaptation Strategies:
 - Reducing uncertainties and enhancing awareness of potential impacts
 - Joint planning to avoid further loss of floodplain storage
 - Ensuring floodplain development is resilient to and supports beneficial flooding
 - Protecting watersheds to better manage runoff and groundwater recharge
 - Coordinate operation of reservoirs
 - Ensuring timely and accurate forecasts and warnings to potentially affected communities
 - Enabling insurance and post recovery measures

Example: Joint Project on Flood & Drought (1)



- Mekong sub catchment shared between Cambodia (downstream) and Thailand (upstream)
- Series of significant floods alternating with severe drought in recent years and present trend indicating possible increase in intensity of future events
- Significant social economic development on going and expected with increasing pressure on the limited water resource
- Willingness from both countries to investigate the potential for mutually beneficial transboundary water resource planning and disaster risk management



**Joint Project on Flood and Drought
in Cambodia and Thailand**



THANK YOU

One Mekong. One Spirit.