

*The 5<sup>th</sup> Regional Stakeholder Forum  
Basin Planning and Environmental Management  
20-21 September 2018  
Landmark Hotel, Vientiane, Lao PDR*

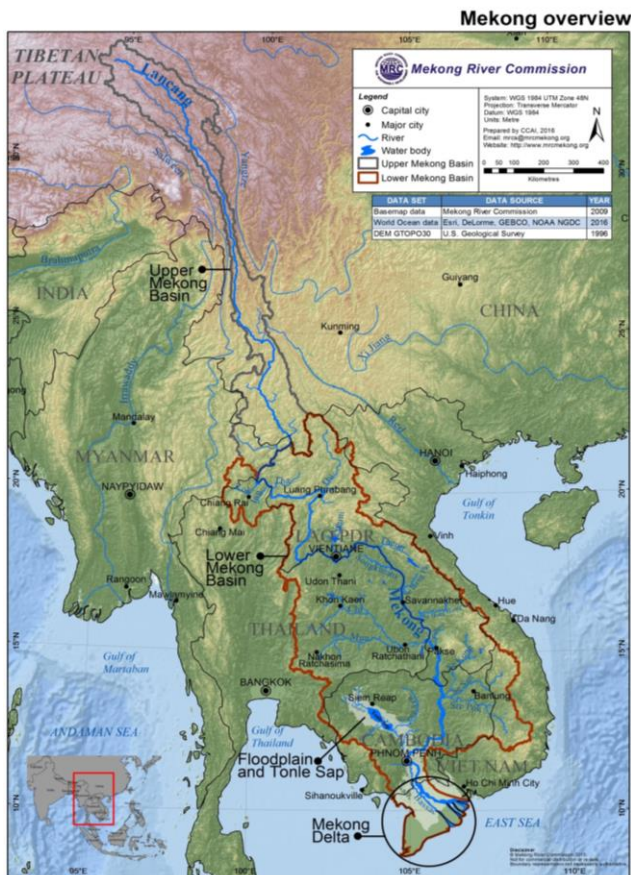


# **Mekong Climate Change Adaptation Strategy and Action Plan**



# 1. What happen to the LMB?

## Climate Change Impacts

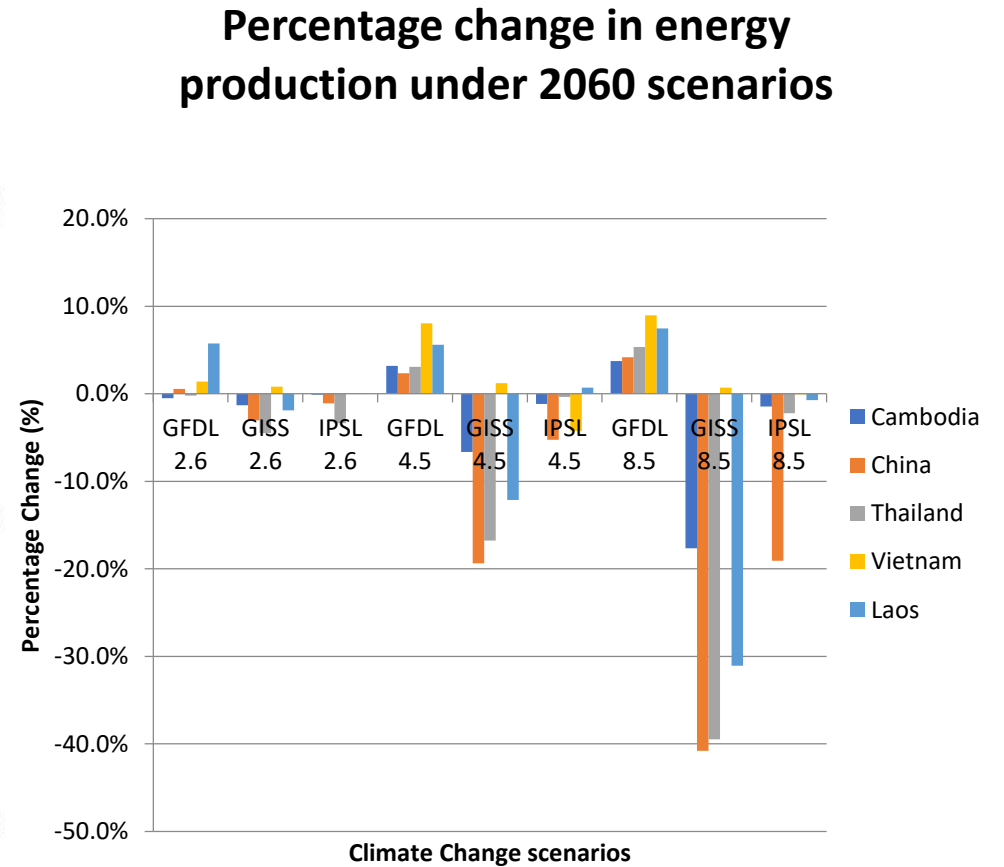
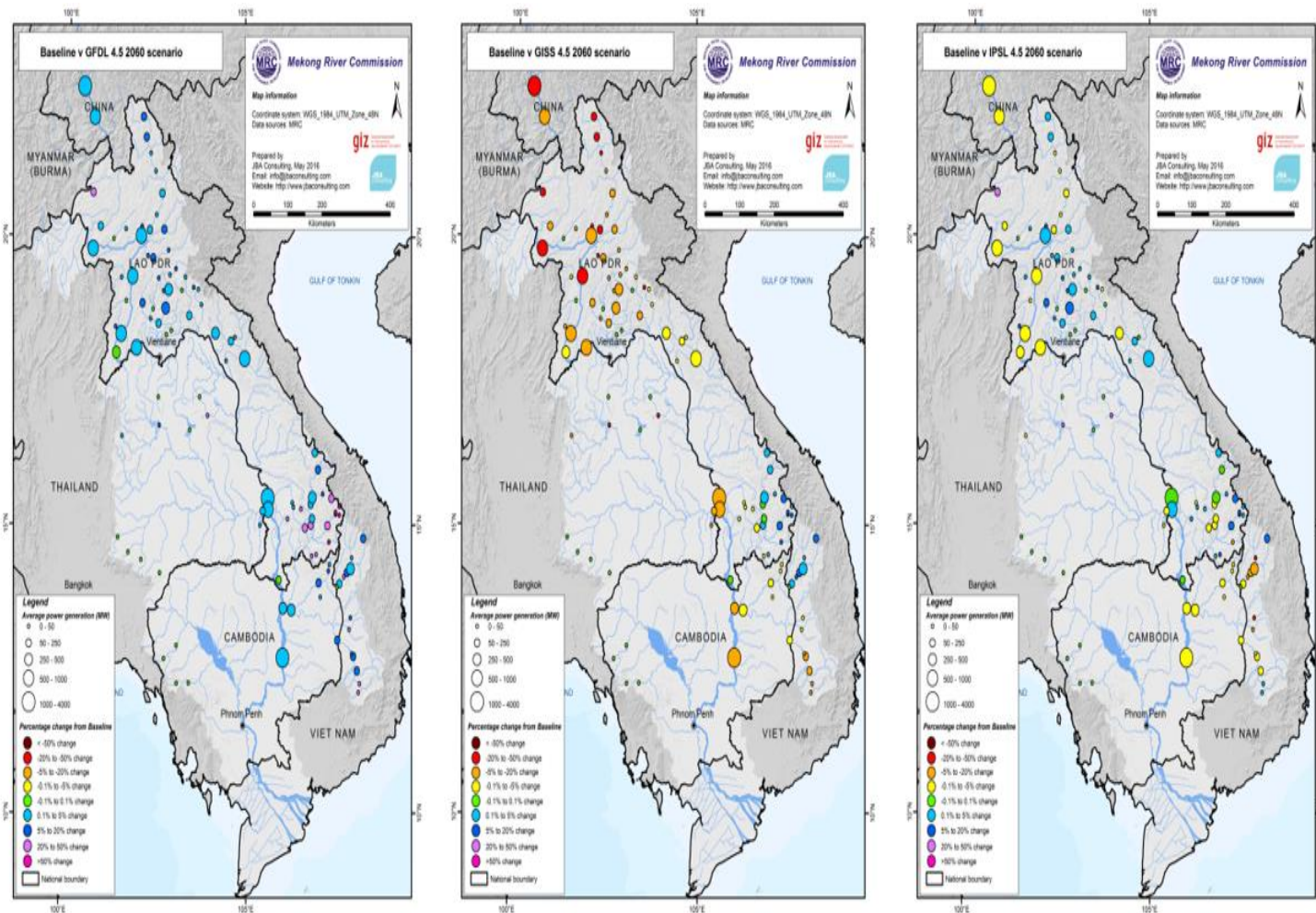


	Historical basin-wide change	Projected basin-wide change	Key impacts and vulnerabilities
<b>Climate</b>	<ul style="list-style-type: none"> <li>↑ temperature</li> <li>↑ precipitation (but regional variations)</li> </ul>	<ul style="list-style-type: none"> <li>↑ temperature</li> <li>↑/↓ precipitation</li> </ul>	
<b>Natural systems</b>	<b>Water resources</b> <ul style="list-style-type: none"> <li>↑ dry season water levels</li> <li>↓ wet season flows</li> </ul>	<ul style="list-style-type: none"> <li>↑/↓ basin water yields, annual and seasonal flow and water level, wet season duration &amp; peaks, and dry season minimums</li> <li>↑ dry season salinity intrusion</li> </ul>	<ul style="list-style-type: none"> <li>Increased floods and more severe droughts;</li> <li>Salinity intrusion further inland;</li> <li>Change in hydro-biological cues.</li> </ul>
	<b>Vegetation and forests</b> <ul style="list-style-type: none"> <li>↓ natural vegetation</li> <li>↓ forest cover</li> </ul>	-	<ul style="list-style-type: none"> <li>Reduced species adaptive capacity (low intrinsic dispersal capacity)</li> </ul>
	<b>Biodiversity and ecosystems</b> <ul style="list-style-type: none"> <li>↓ species populations</li> <li>↓ wetland area</li> <li>↓ terrestrial ecoregions</li> </ul>	<ul style="list-style-type: none"> <li>↓ species and suitable habitats</li> <li>↑ ecoregions experiencing novel bioclimatic conditions</li> </ul>	<ul style="list-style-type: none"> <li>Reduced species adaptive capacity (<u>low annual reproductive output and physical barriers/habitat disconnection</u>)</li> <li>Species extinctions</li> <li>Reduced ecosystem services</li> </ul>
	<b>Fisheries</b> <ul style="list-style-type: none"> <li>↑ overall yields</li> <li>↓ catch per unit effort</li> <li>Change in species catch composition</li> </ul>	<ul style="list-style-type: none"> <li>↑ vulnerable species</li> <li>↑/↓ habitat yields</li> </ul>	<ul style="list-style-type: none"> <li>Reduced species adaptive capacity (e.g. barriers that prevent dispersal)</li> <li>Species extinctions</li> </ul>
<b>Socio-economic systems</b>	<b>Agriculture and irrigation</b> <ul style="list-style-type: none"> <li>↑ agricultural yields</li> <li>↑ irrigation</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Crop yields at risk due to temperature increases, floods and droughts</li> </ul>
	<b>Fisheries and aquaculture</b> <ul style="list-style-type: none"> <li>↑ overall yields</li> <li>↓ catch per unit effort</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Aquaculture at risk of temperature, floods, droughts, sea-level rise and water quality</li> </ul>
	<b>Food security</b> <ul style="list-style-type: none"> <li>↑ food security</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Vulnerabilities in North and Central part of LMB with high poverty rates and high dependency ratios</li> </ul>
	<b>Energy (hydropower)</b> <ul style="list-style-type: none"> <li>↑ hydropower production</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Vulnerable to increased droughts</li> </ul>
	<b>Navigation &amp; infrastructure</b> <ul style="list-style-type: none"> <li>↑ navigation</li> <li>↑ infrastructure including grid electricity, water supply and sanitation, paved roads</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Decreases in water level a threat to navigation in upper reaches</li> <li>Roads and water supply infrastructure vulnerable to more intense rainfall, floods and landslides</li> </ul>
	<b>Human health</b> <ul style="list-style-type: none"> <li>↑ human health</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Water and vector-borne disease; heat stress</li> </ul>
<b>Poverty, wellbeing, employment and income</b> <ul style="list-style-type: none"> <li>↓ poverty</li> <li>↓ reliance on agriculture</li> <li>↑ income</li> </ul>	N/A	<ul style="list-style-type: none"> <li>North and Central part of LMB more vulnerable due to high poverty rates, high dependency ratios and greater reliance on agriculture</li> </ul>	

LMB countries: **most vulnerable** countries to CC

**Adaptation** to CC impacts: recognized as urgently needed

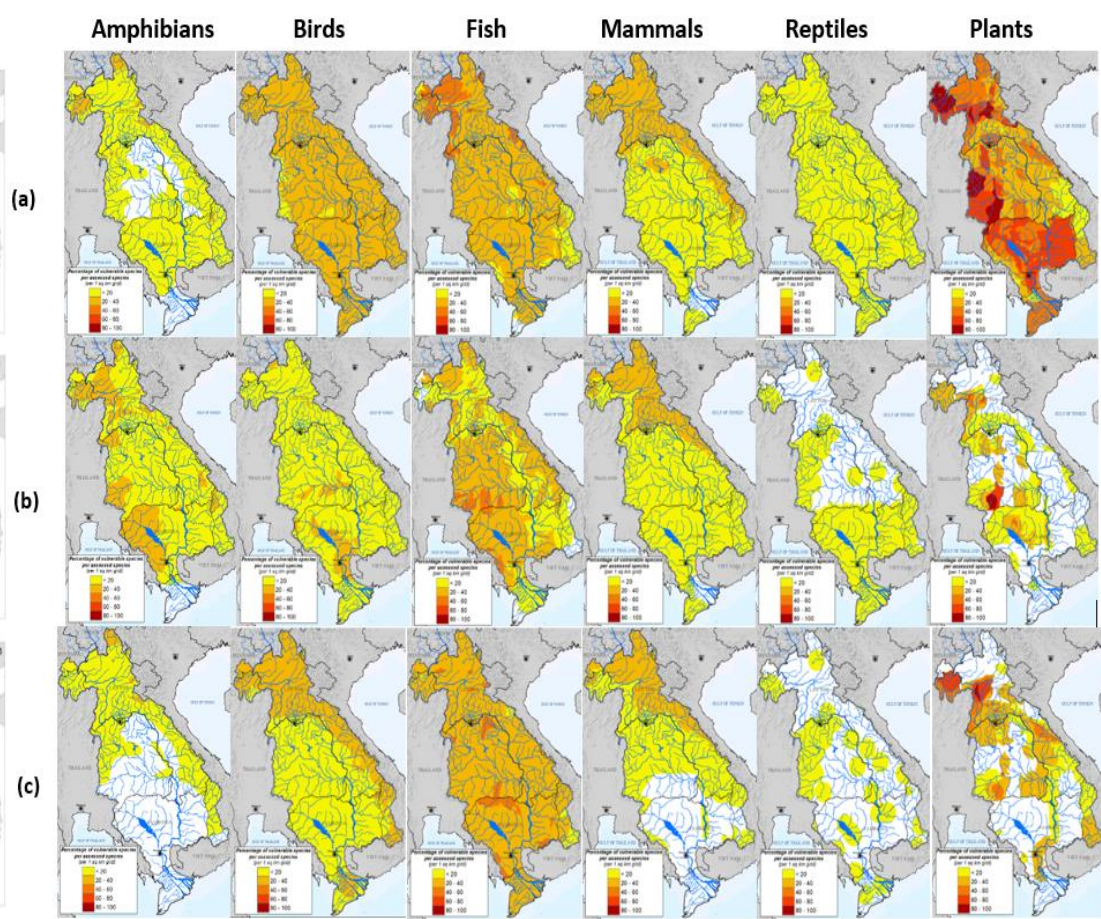
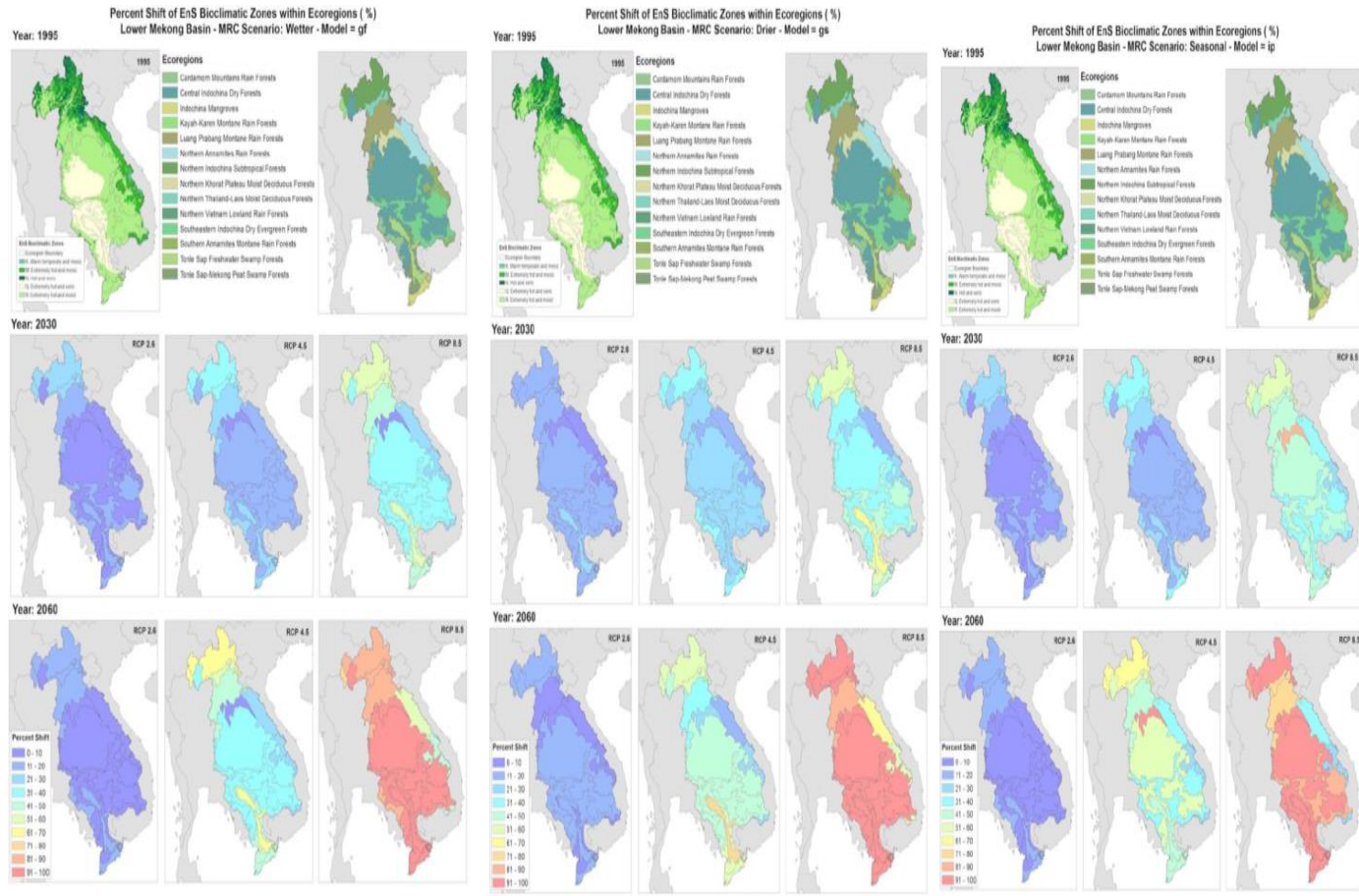
# 2. Climate Change Impacts on Hydropower Production



**Change based on 2060 proposed dams**

*(Source: MRC, 2017. Technical Report of Basin-wide Assessment of Climate Change Impacts on Hydropower Production)*

# 3. Climate Change Impacts on Ecosystem and Biodiversity



*(Source: MRC, 2017. Technical Report of Basin-wide Assessment of Climate Change Impacts on Ecosystem and Biodiversity)*

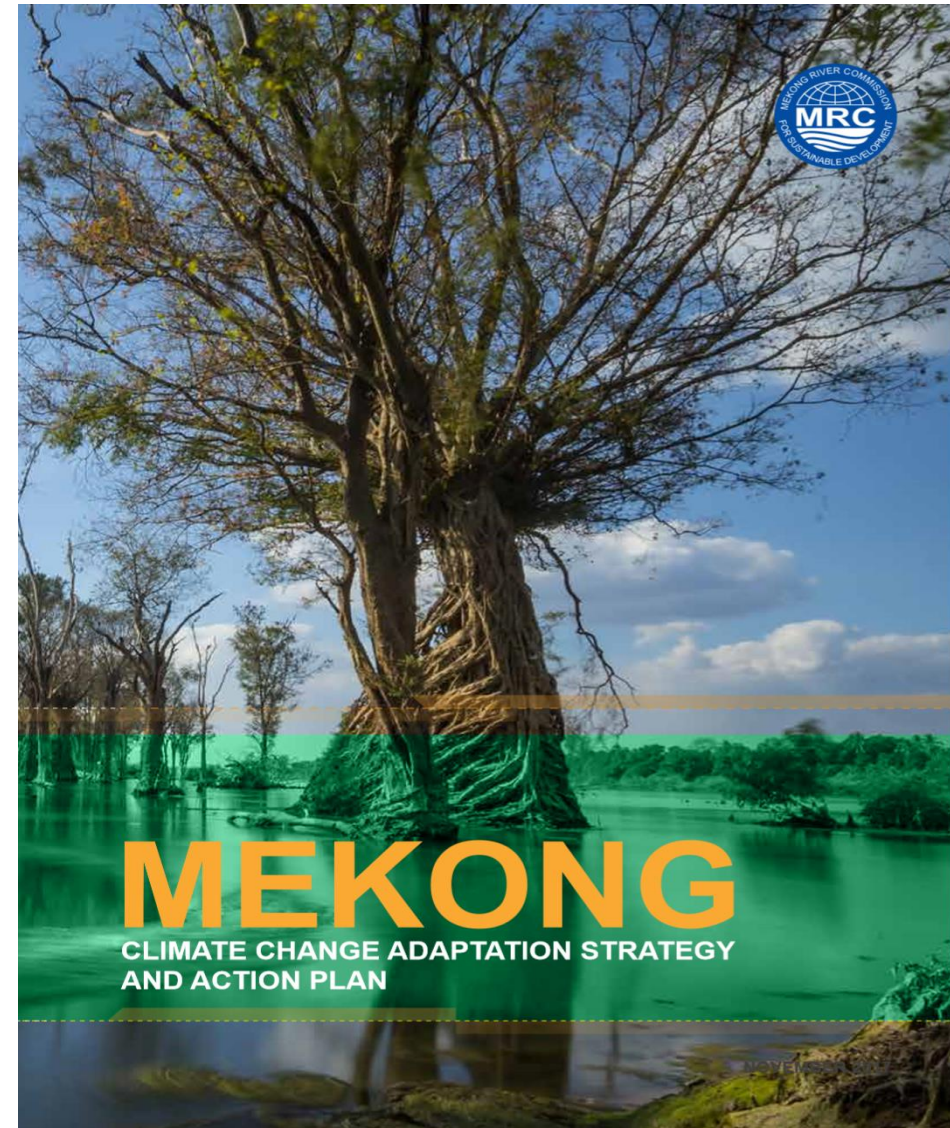
## 4. Climate Change Impacts on Flood

Scenario	Annual Flood	Chiang Saen	Luang Prabab	Nong Khai	Mukdahan	Pakse	Stung Treng
EDS	Mean	9,651	15,902	19,282	31,382	38,183	45,843
M2	Mean	9,158	14,932	18,069	29,808	36,713	43,588
M3 (NoCC)	Mean	9,158	13,879	17,372	28,972	36,463	43,622
M3 (CC)	Mean	10,252	15,439	20,356	31,800	39,683	46,734
EDS	Max	13,668	24,882	25,434	38,042	48,119	62,581
M2	Max	12,312	24,559	25,183	37,221	47,814	61,466
M3 (NoCC)	Max	12,315	20,697	21,295	36,395	45,569	62,351
M3 (CC)	Max	21,913	27,419	44,696	51,515	60,997	69,770

- Climate Change increases floods
- **‘Normal’** Floods reduced by upstream dams

## 5. What is MASAP?

- Statement of the LMB countries of strategic priorities and actions at basin level
  - *address CC risks on the basin*
  - *strengthen basin-wide resilience*
- Contribute to ensuring sustainable development of MRB in line with the 1995 Mekong Agreement
- *Contribute to SDG 13 – Climate Action*



## 6. Content of MASAP

- Chapter 1: Introduction
- Chapter 2: Framework Conditions
- Chapter 3: Climate Change and Vulnerability in the LMB
- Chapter 4: Strategic Guidance and **Priorities** for Basin Adaptation to Climate Change
- Chapter 5: **Action Plan** for Basin Adaptation to Climate Change



## 7. 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.

MASAP: approved by Member Countries in Nov. 2017



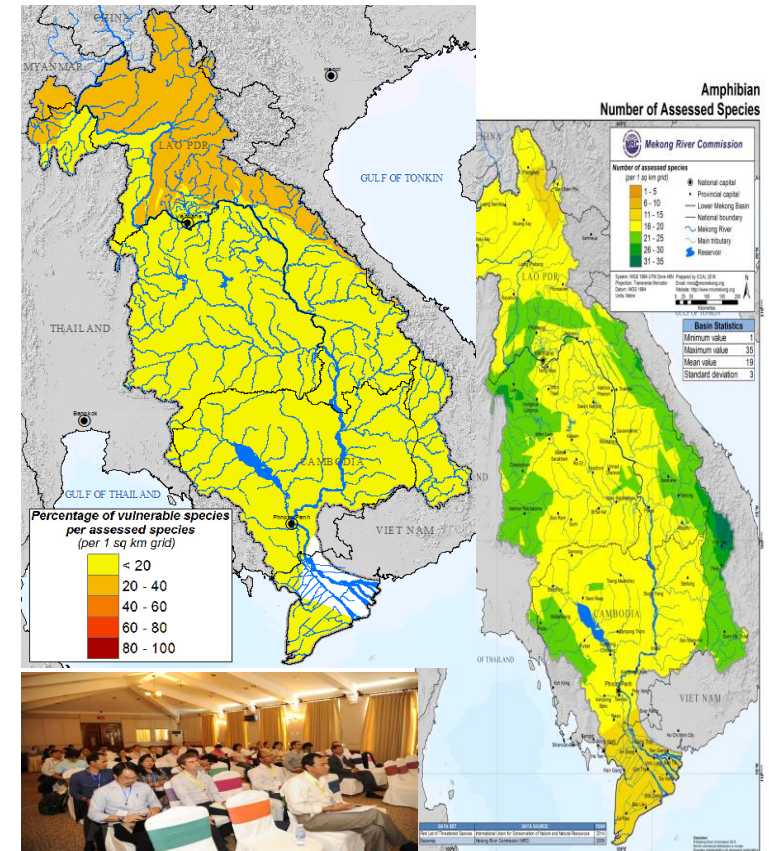
# 8. Added Values of the MASAP

Climate and water linkage at basin level

Transboundary issues associated with CC adaptation

Implement MC's adaptation strategies and plans at national, regional and international level

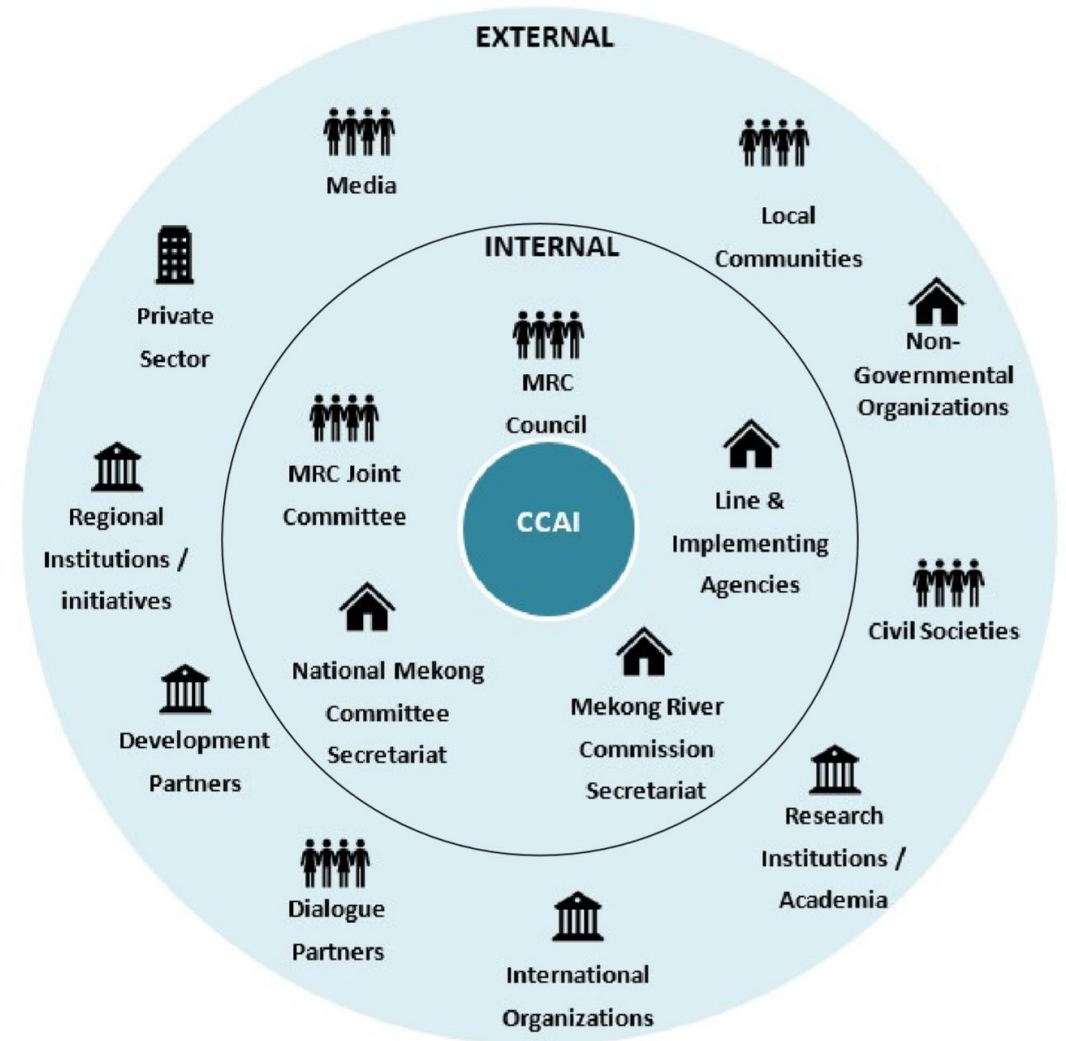
Transboundary Cooperation



Enhancing the capacity of MCs in implementing their own national strategies

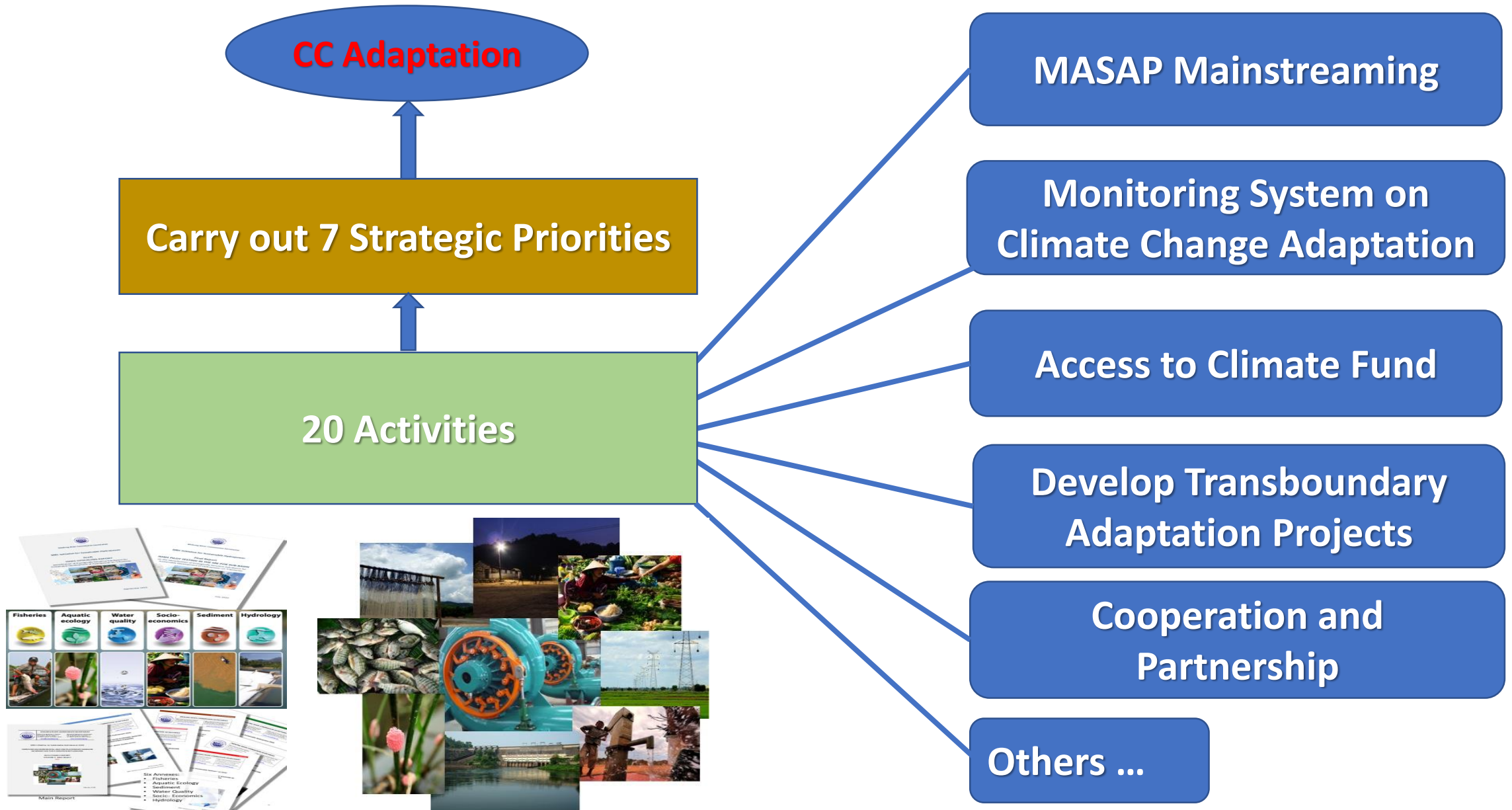
## 9. How to use MASAP?

- A tool to support and **mainstream adaptation planning** at national and regional level
- An opportunity to seek **additional funding** for adaptation measures firstly at the regional scale but also at national scale to address transboundary CC issues
- An orientation (*through the CCAI Basin-wide assessment*) for the **identification of concrete relevant adaptation measures**
- A strategy aligned to but **complementing** the already existing national strategy and plans as well as the Nationally Determined Contribution on CC adaptation



Stakeholder Engagement for MASAP implementation

# 10. Action Plan for Basin Adaptation



# 11. Summary

- Projected future CC and the resulting impacts are in some scenarios extreme. The implications for socio-economic systems may be **profound with vulnerable communities**
- **Mainstreaming CC into regional and national policies/programs/plans**
- **Transboundary adaptation projects – important**
- **Regional and international cooperation** and partnership on CC and adaptation
- **Adaptation to climate change needs to take account of planned upstream developments** and use climate financing opportunities



# Thank you

