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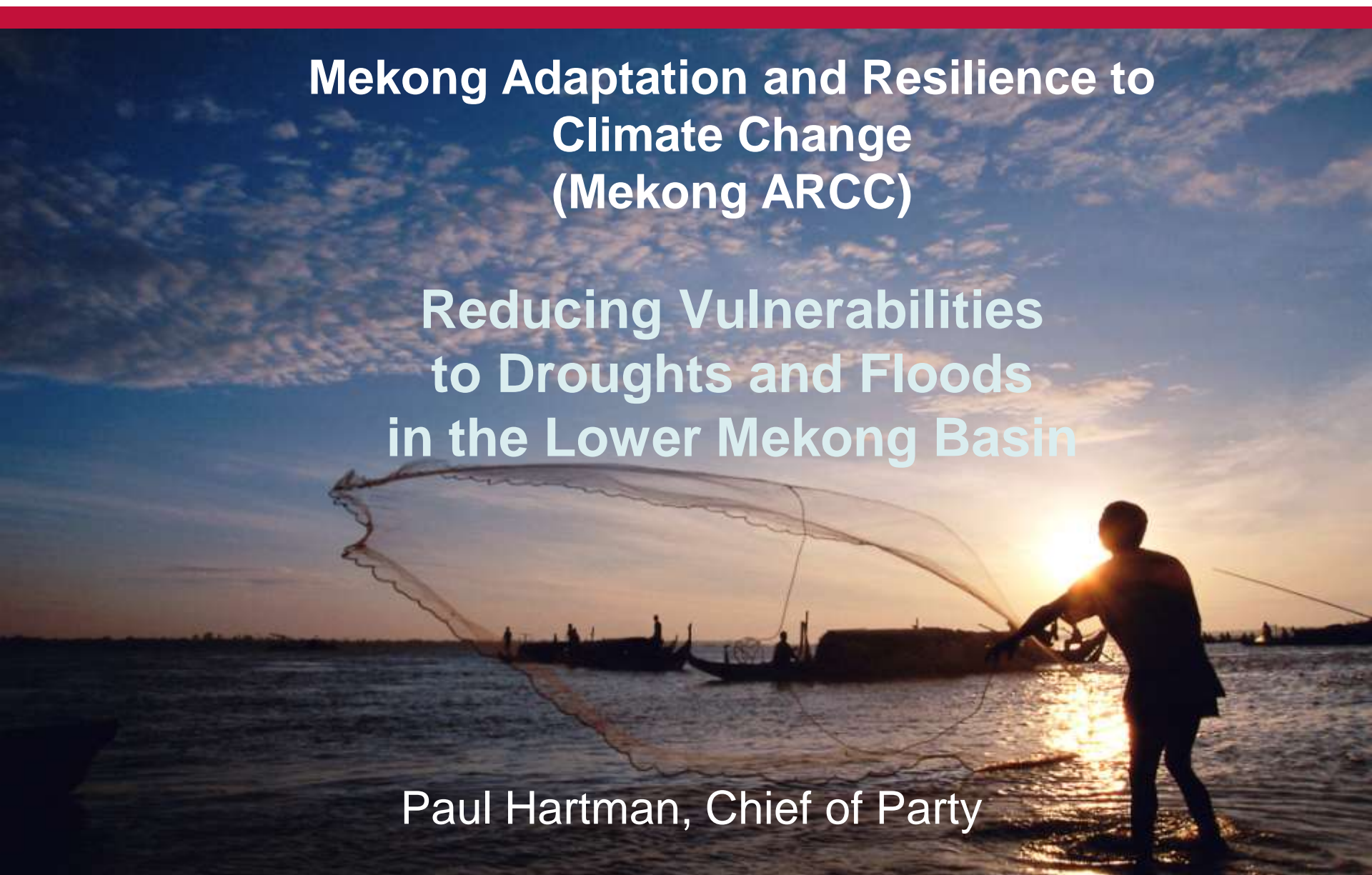


**USAID Mekong Adaptation and
Resilience to Climate Change**

Mekong Adaptation and Resilience to Climate Change (Mekong ARCC)

Reducing Vulnerabilities to Droughts and Floods in the Lower Mekong Basin

Paul Hartman, Chief of Party



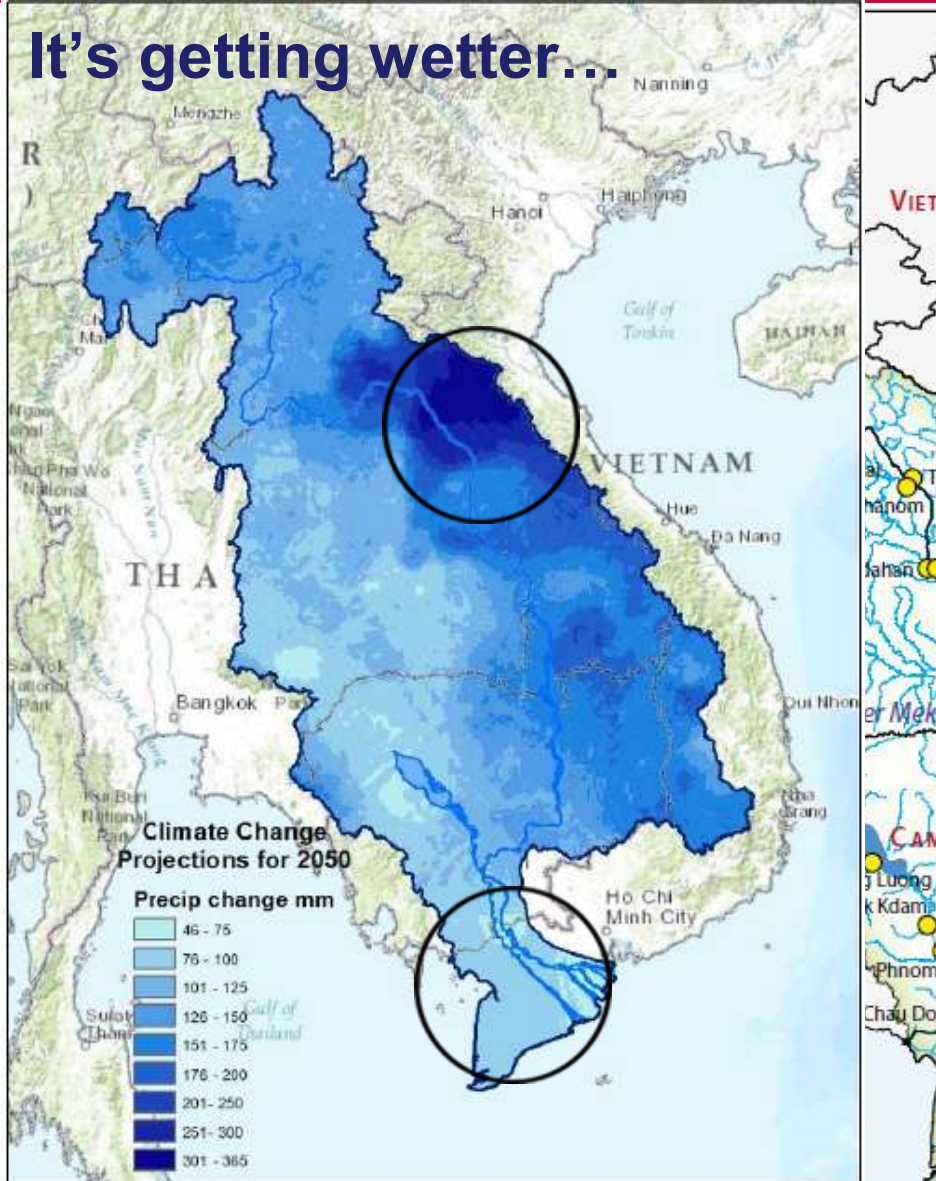


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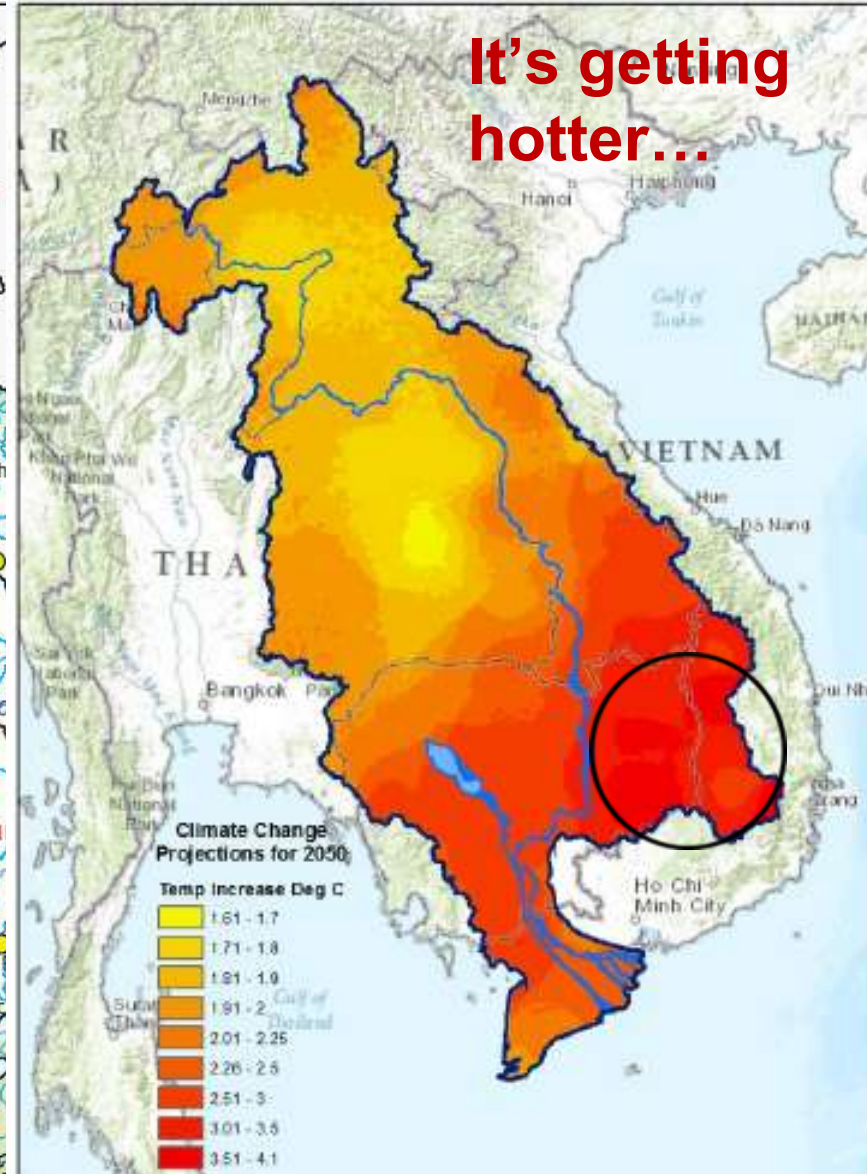


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It's getting wetter...



It's getting hotter...



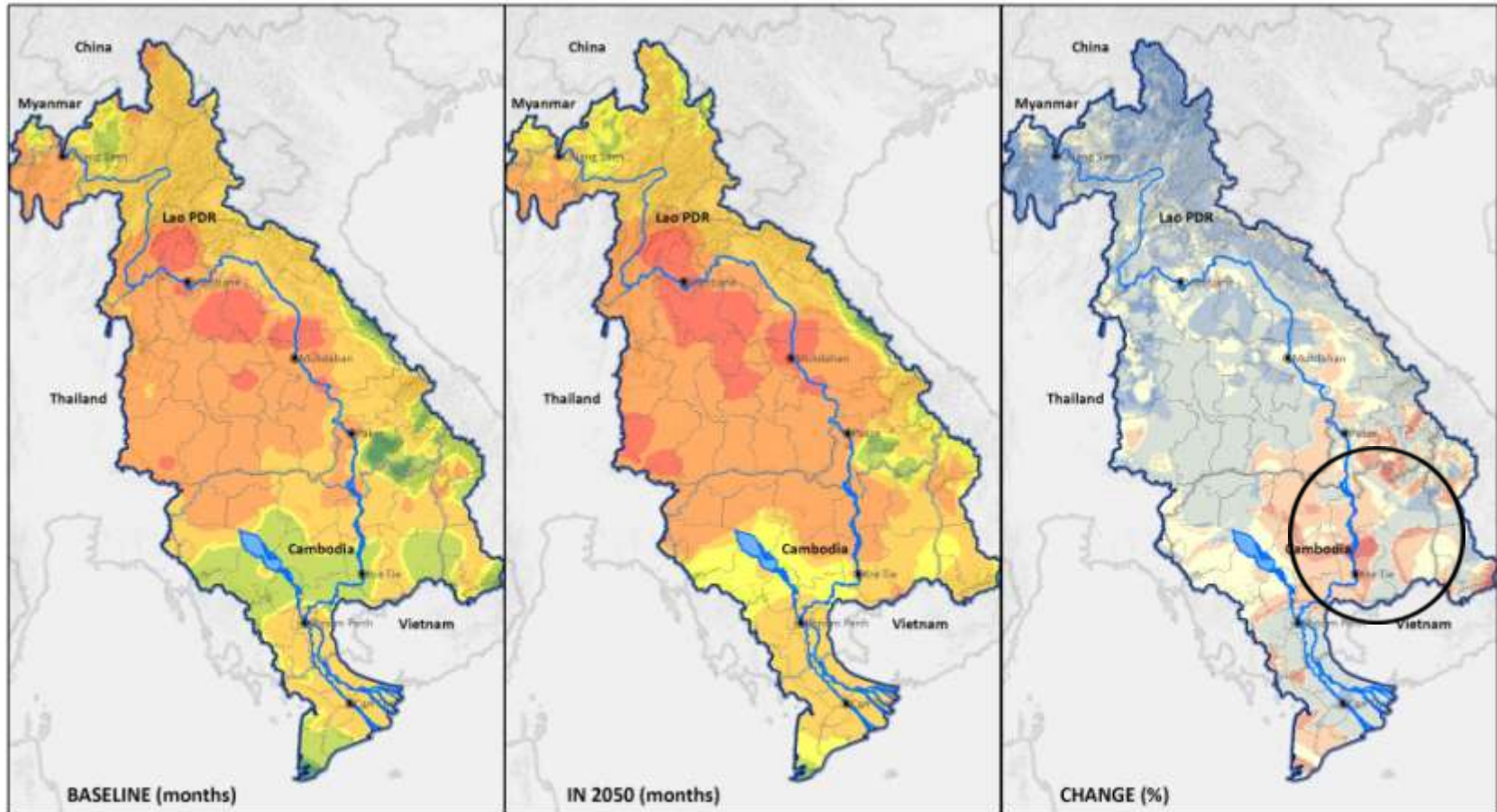


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Number of Drought Months by 2050



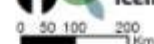
NUMBER OF DROUGHT MONTHS, LOWER MEKONG BASIN



LMB Boundary
 National Border
 Province Border
 Mekong Mainstream



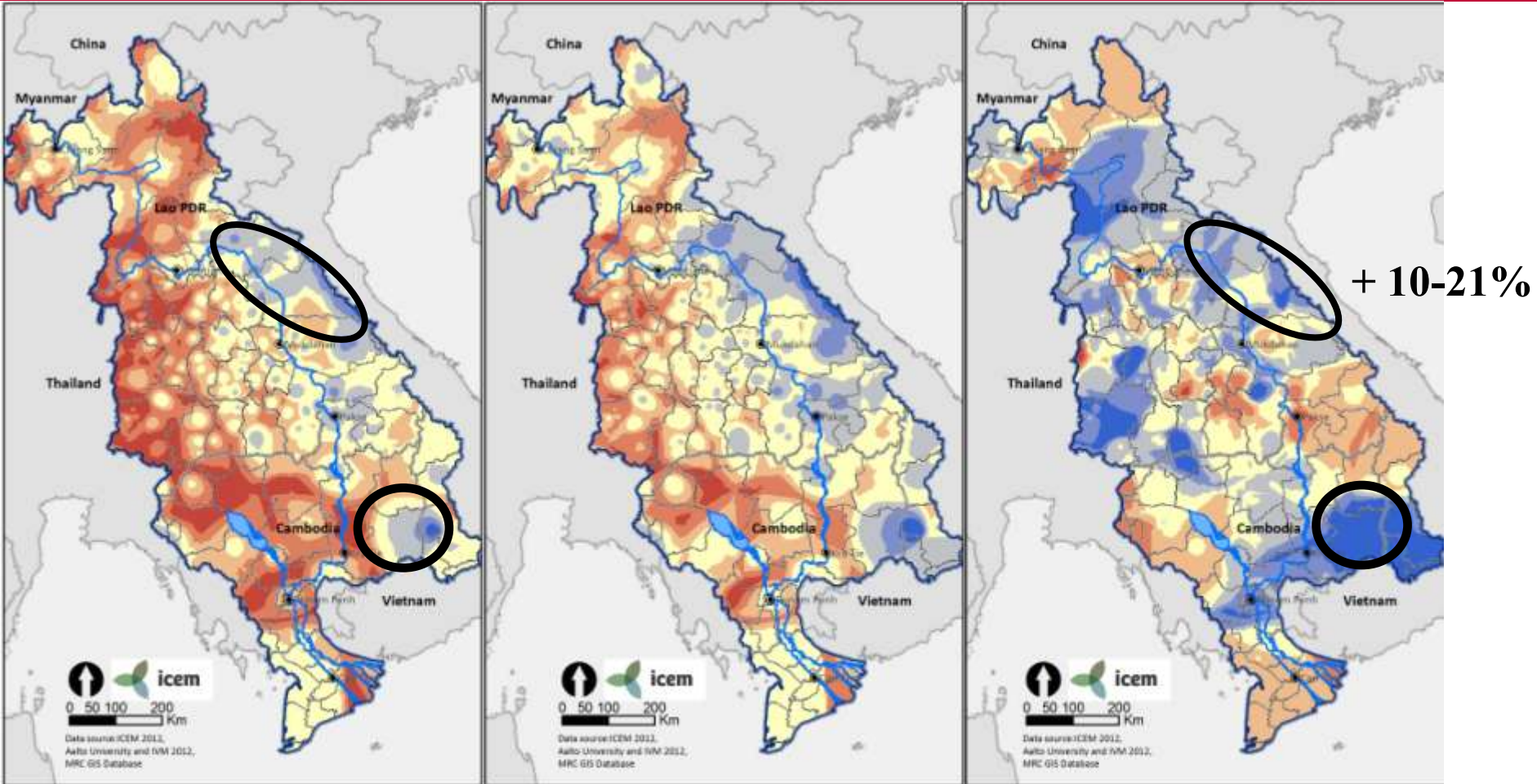
Data source: ICM 2017, Aalto University and IVM 2012, MRC GIS Database



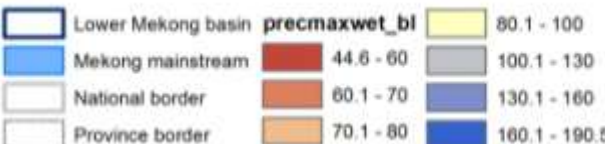


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Change in Peak Daily Precipitation



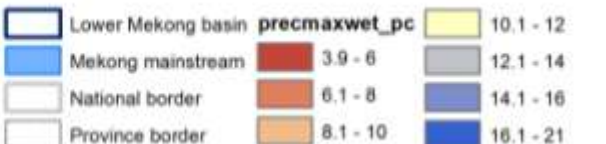
AVERAGE MAX PRECIPITATION IN WET SEASON (mm/day), BASELINE, LMB



AVERAGE MAX PRECIPITATION IN WET SEASON (mm/day), IN 2050, LMB



AVERAGE MAX PRECIPITATION IN WET SEASON CHANGE (%), LMB





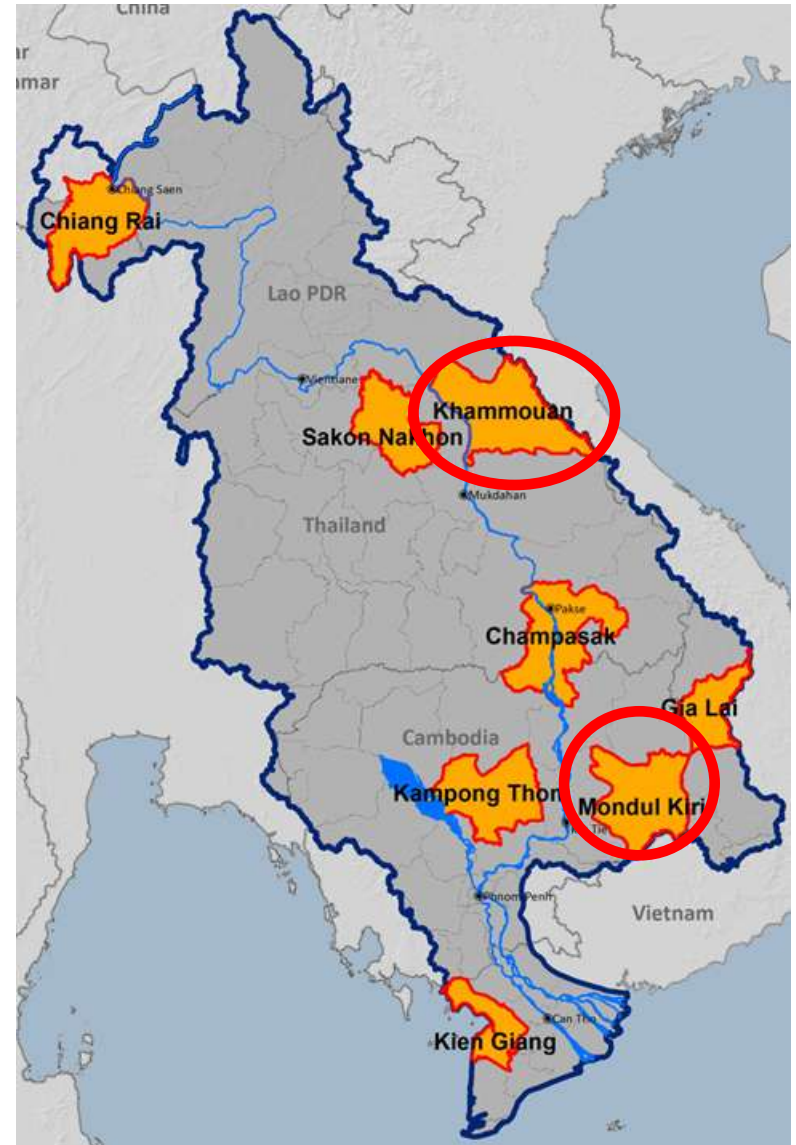
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Priority Hotspot Provinces selected by Mekong ARCC climate change impact and vulnerability assessments

- **Chiang Rai - Thailand**
- **Sakon Nakhon - Thailand**
- **Khammouan – Lao PDR**
- **Champasak - Lao PDR**
- **Mondulkiri - Cambodia**
- **Kampong Thom - Cambodia**
- **Gia Lai – Vietnam**
- **Kien Giang -Vietnam**





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Mondulkiri, KH – Change in Dry Season Precipitation

MONDULKIRI & EASTERN CAMBODIA - LIVELIHOOD VULNERABILITIES



RISING TEMPERATURES
HEAT STRESS, REDUCED SOIL WATER

Suitable growth conditions compromised for cassava, soybean, rice and rubber



Reduced livestock reproductive rates and immunity



Compromised water quality of aquaculture ponds

GREATER RAINFALL & STORMS
INCREASED FLASH FLOODING, WATERLOGGING

Rice, soybean, cassava and rubber crops at risk of damage from more frequent, intense storms

Increased risk of disease, herd loss among livestock

Affected aquaculture infrastructure, reduction in stocks





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Khammouan, Laos—Change in Wet Season

KHAMMOUAN - LIVELIHOOD VULNERABILITIES



RISING TEMPERATURES

HEAT STRESS

Decreased yields of rainfed rice

Reduced fodder availability and reproductive rates of smallholder livestock

Decreased habitat suitability impacting fish reproduction rates

Impacted growth of NTFPs and crop wild species (orchids, rattan, etc.)

GREATER RAINFALL & STORMS

INCREASED FLASH FLOODING, WATERLOGGING

Growth of cassava and maize crops at risk

Increased risk of disease, herd loss among smallholder livestock

Affected aquaculture infrastructure, decrease stocks of fish in stream valleys

Damaged high tree canopy growth, negative impact on wild rice and seedling growth





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Community/Subnational Adaptation Options



- **Natural system adaptation** – rehabilitation, revegetation
- **Human solutions** – species/ecological enrichment, check dams, farm ponds, drainage systems, bank stabilization
- **Landuse planning** – management plans, seasonal restrictions on harvesting, village conservation zones
- **Institutional mechanisms development** – community committees, climate impact monitoring teams/climate witness, DRM preparedness teams





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Policy-maker's Adaptation Needs



- Credible downscaled climate projections, especially of extreme events and associated impacts
- Better syncing of timeframes and scales of climate information generated by researchers/implementers to what policymakers require
- Tools to assist in the analysis of costs and benefits of adaptation measures, particularly at local level
- Monitoring and evaluation frameworks that clearly define adaptation goals and layout success indicators
- Practical guidance on the 'how to' of adaptation tools and approaches to make them more suitable to specific contexts



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Thank You
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