

Climate-Resilient Development: Vietnam's Mekong Delta Region



Dates: June 11 - July 1, 2023

Program Leader: Steven Jaffee, sjaffee@umd.edu

Learn More: go.umd.edu/vietnam-AREC

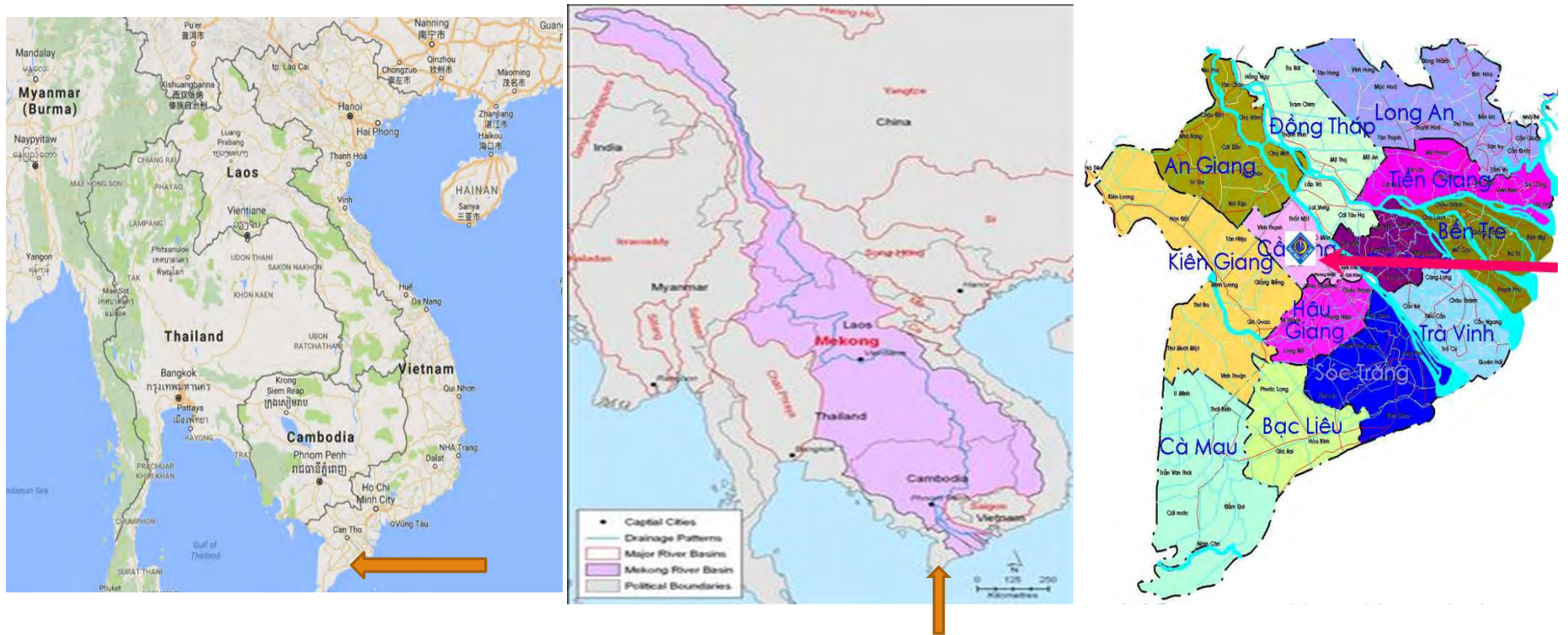
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Vietnam: A rapidly advancing middle-income country



Vietnam's Mekong Delta: the Basics

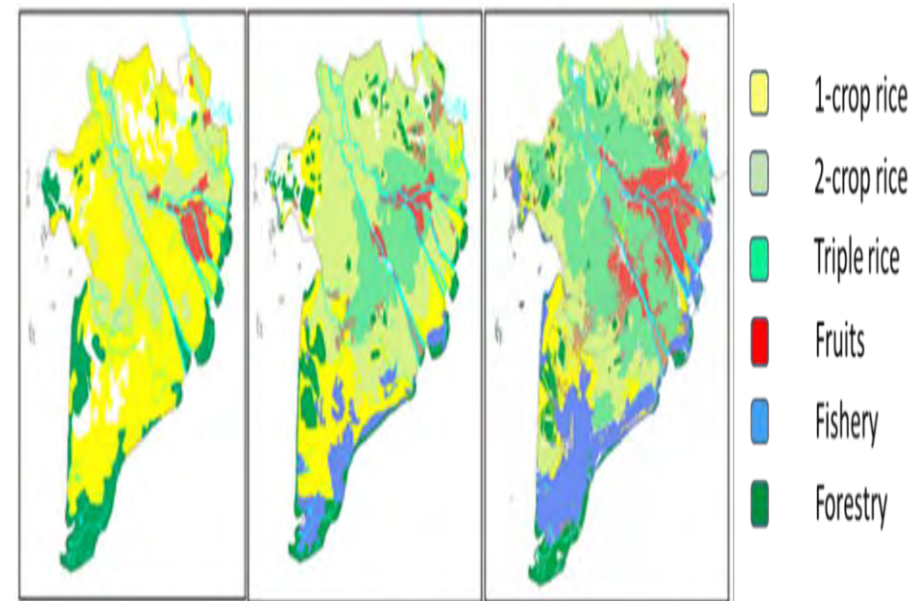
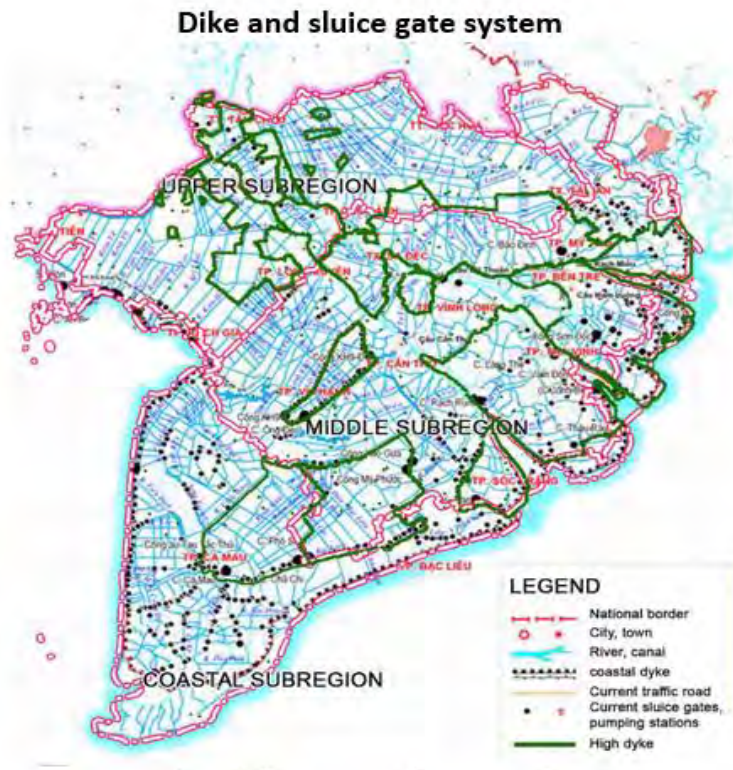


15,600 square miles (12% of VN); 21.5 million people (20% of VN); 18% of GDP;
Thirteen provinces and three hydrological sub-regions

Mekong Delta: Life along the water



Mekong Delta: An agricultural powerhouse



Land-use map of the MKD in 1976, 1996, and 2015

MKD: 1/3 of VN's agri GDP; 50% of rice production; 70% of fruit and aquaculture production

The Mekong Delta feeds the nation and the world yet is a socio-economic laggard

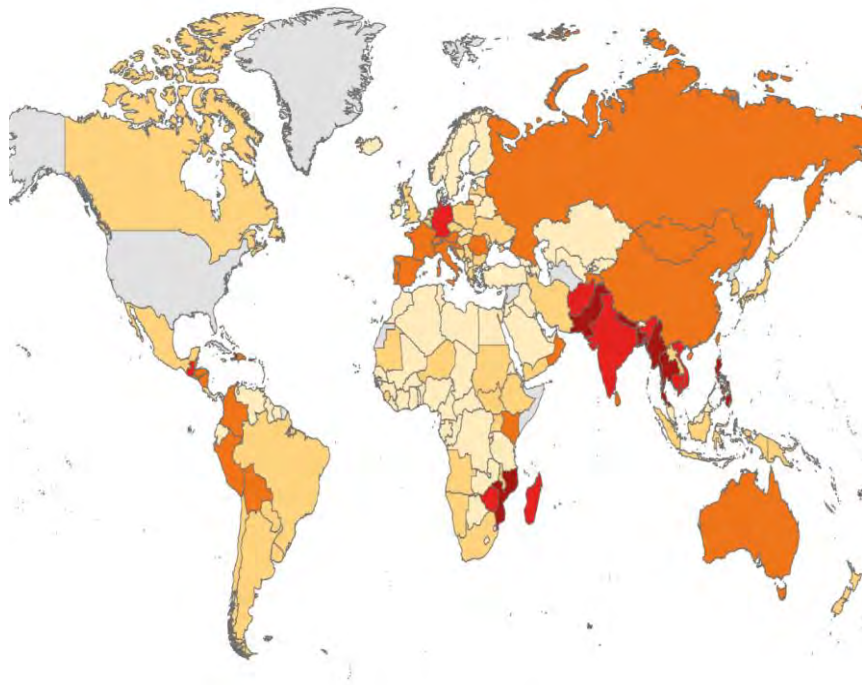
Trails other regions and the national averages for:

- Per capita income
- Nutritional status
- Labor force skills
- Educational attainment
- Job creation



Widespread out-migration has resulted in a stagnant and ageing population

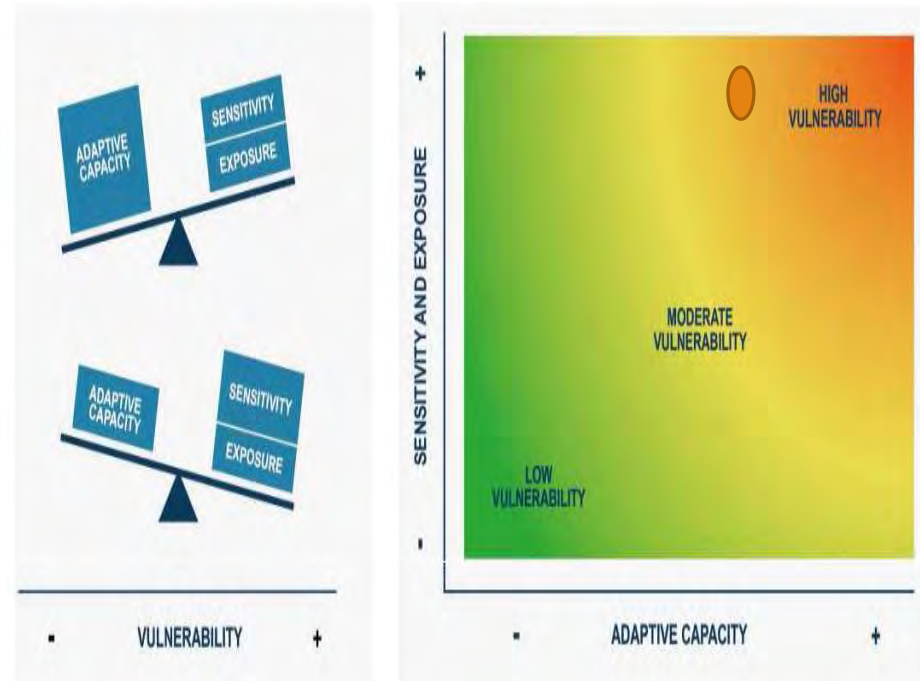
Vietnam is considered the 13th most vulnerable country to climate change—with the MKD especially vulnerable



Global Climate Risk Index: Ranking 2000 - 2019

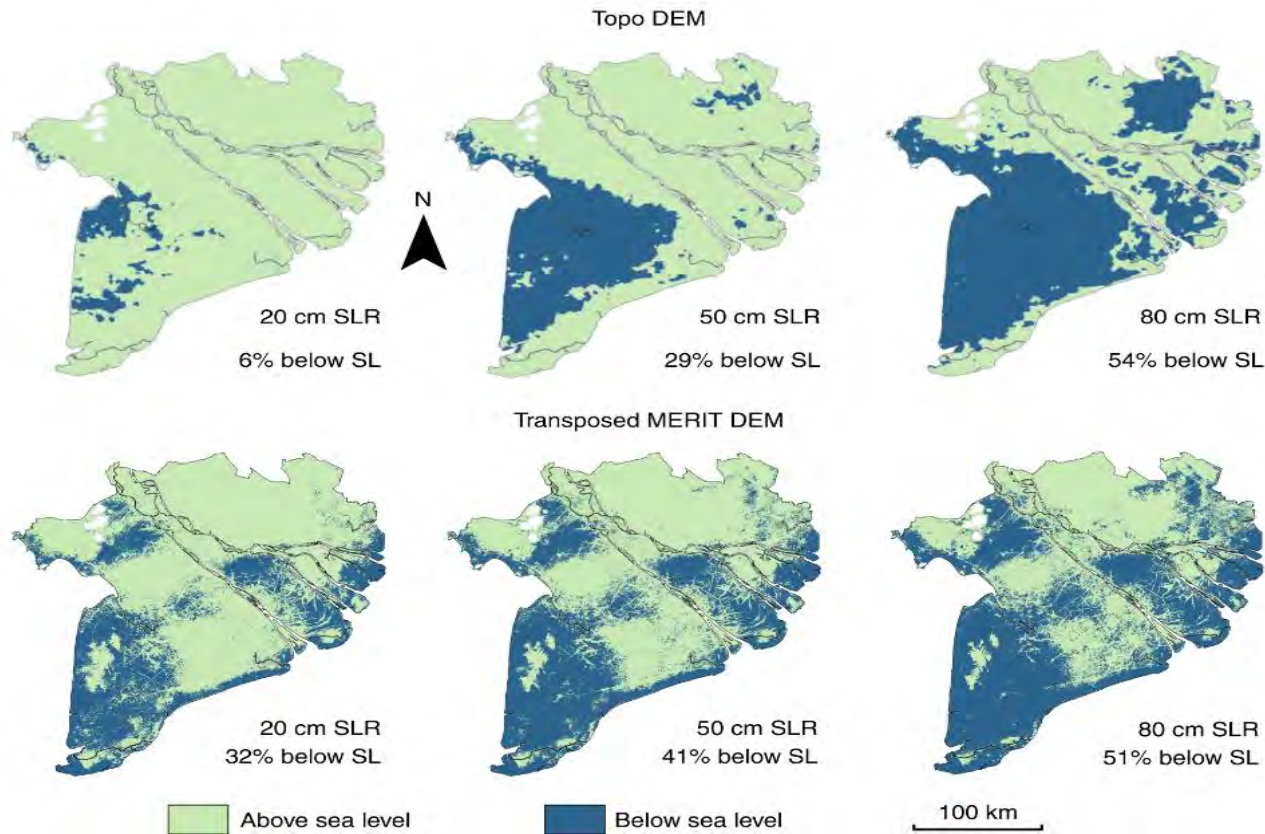
■ 1 - 10 ■ 11 - 20 ■ 21 - 50 ■ 51 - 100 ■ >100 ■ No data

Source: Germanwatch



Source: Giordano (2014)

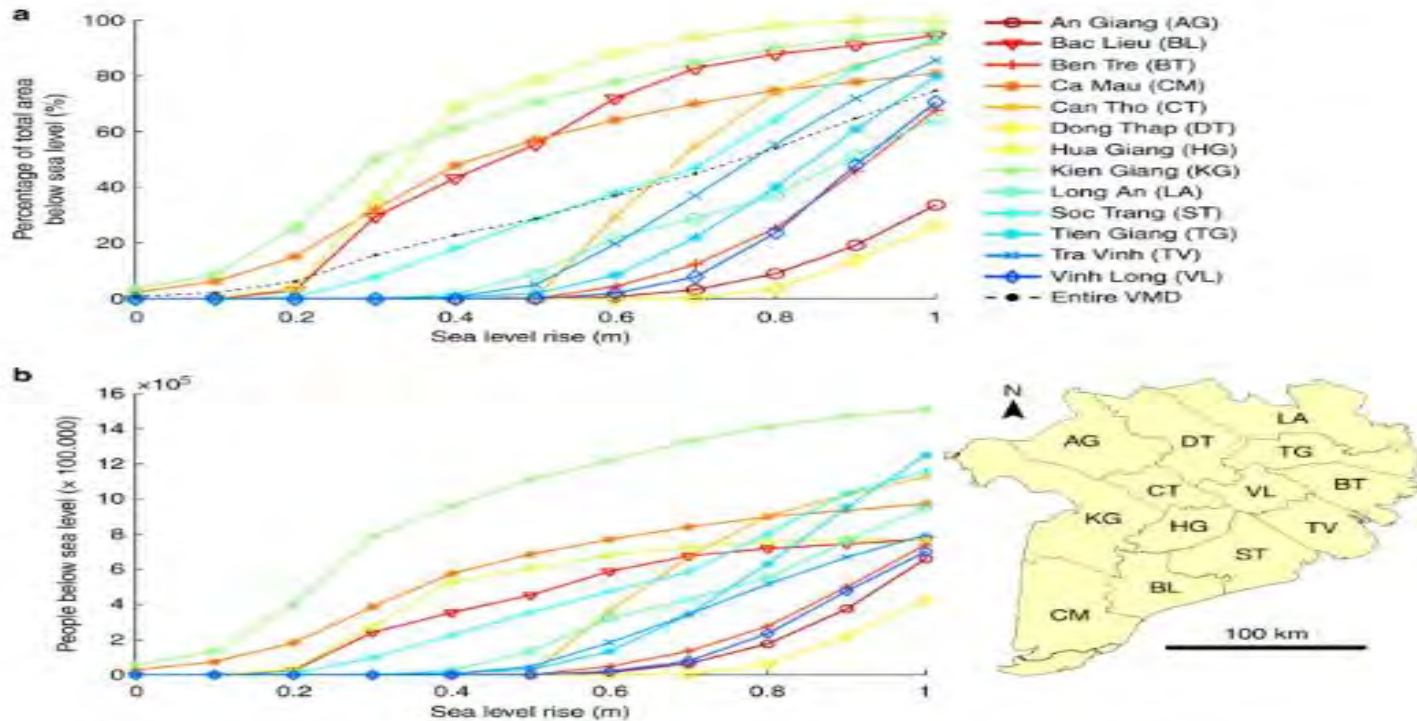
A major proportion of the MKD could be submerged due to sea level rise (2050 & beyond)



Current Projections

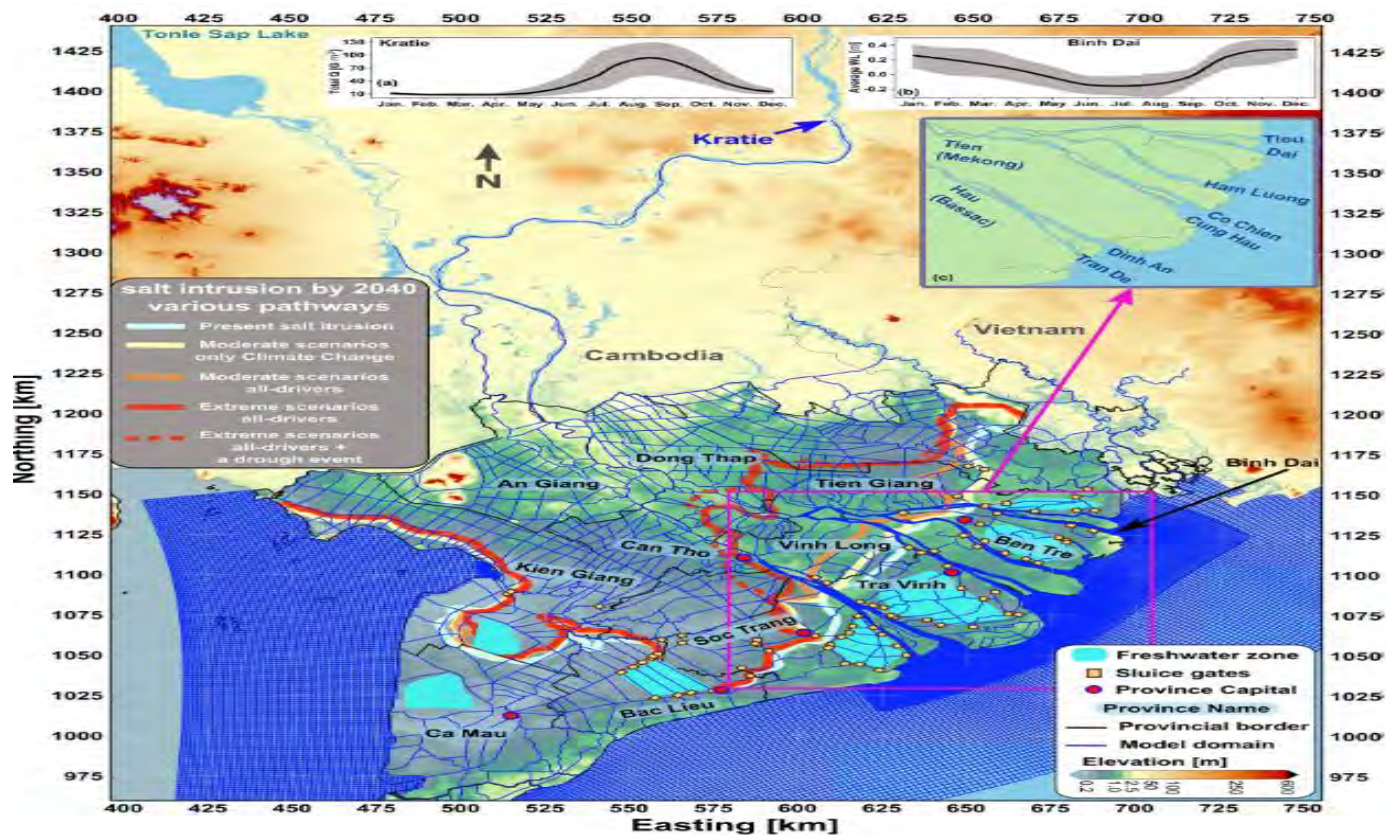
- 24-28 cm by 2050
- 56-77 cm by 2100

Impacting large numbers of people



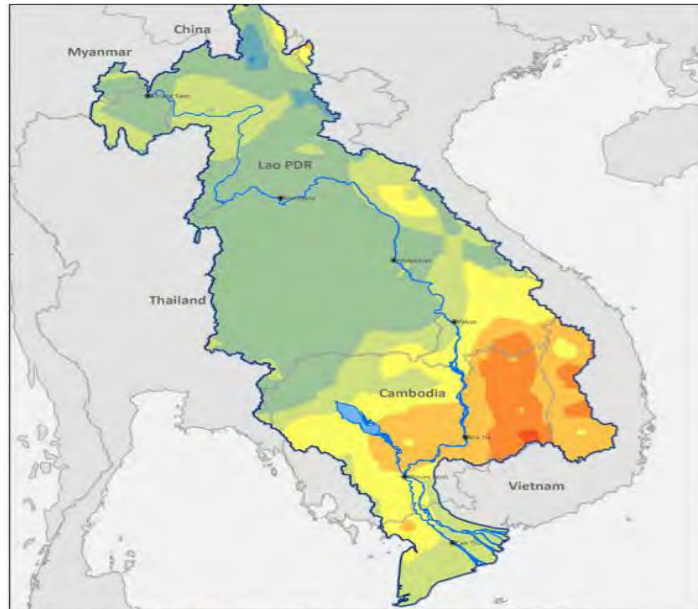
Area and estimated number of inhabitants affected by sea-level rise. Delta area (a) and estimated number of inhabitants (b) below sea level following sea-level rise up to 1 meter based on the Topo digital elevation model

Various scenarios for increased salt water intrusion into the interior of the delta, posing a threat to overall water quality

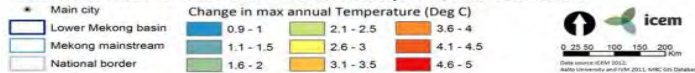


Expected (continued) changes in climate with potential impacts on agriculture and public health

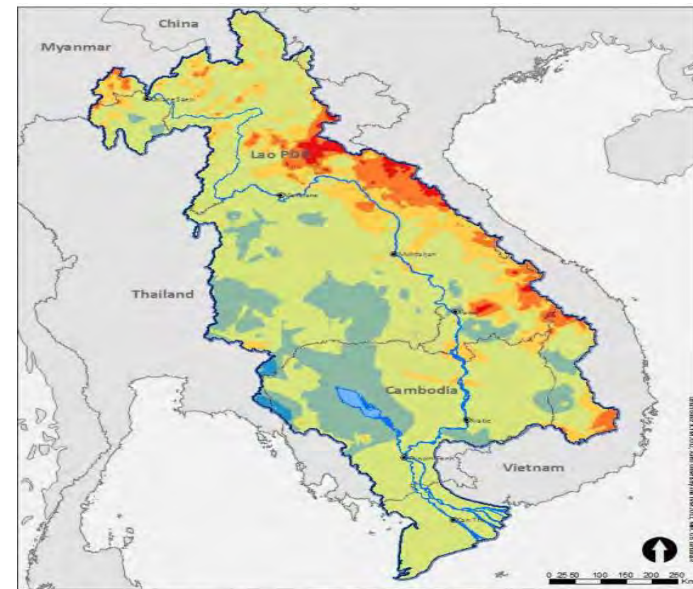
BECOMING HOTTER



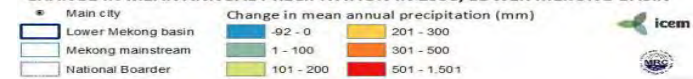
CHANGE IN MAX ANNUAL TEMPERATURE IN 2050, LOWER MEKONG BASIN



BECOMING WETTER WITH MORE CONCENTRATED RAINFALL



CHANGE IN MEAN ANNUAL PRECIPITATION IN 2050, LOWER MEKONG BASIN



Upriver developments will also pose major challenges for the Mekong Delta



Large reduction in fishery populations due to barriers, migratory disruption, and reduced nutrients—affecting the diets and livelihoods of millions of people.

Large reduction in soil fertility which will necessitate major land use changes or more intensive use of chemical fertilizers to maintain productivity

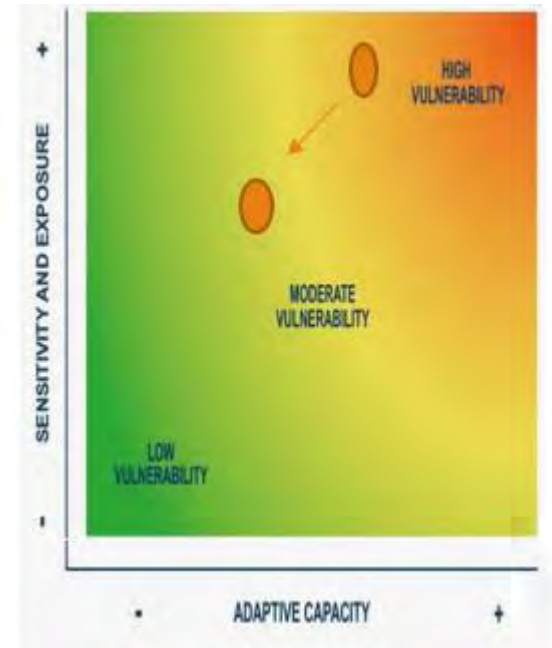
Increased exposure of downstream communities from floods and landslides caused by sudden releases of water from upstream reservoirs, plus water quality decline, adversely impacting health



Towards Climate-resilient Development: Mobilizing stakeholders and undertaking action

**(2017) Resolution on Sustainable and Climate-Resilient Development of the Mekong Delta,
and
(2022) Mekong Delta Regional Master Plan 2021-2030 with a vision to 2050**

Adaption	Mitigation
Risk Assessment	
Multi-sectoral & Inter-Provincial Planning	
Facilitate major shifts in land uses (& alternative livelihoods)	
Promote adoption of sustainable agricultural practices	
More flexible & resilient infrastructure	Promote renewable energy
Integrated coastal zone management	Promote technological changes
Enterprise and Community-Level Initiatives	



AREC 356:

A front row seat to this drama

Lectures (& Readings)	Field Trips	Discussions
Climate change impacts Climate-resilient development MKD economy & ecosystem & culture Regional planning & techniques Sustainable agriculture + aquaculture Natural resources management	Farming areas Coastal region Research stations Development projects Cultural sites National parks	Development Agencies Private Companies Community Leaders Farmers Environmental NGO CTU Students



Student Assessment:

- Field visit blog/summary
- Active participation in discussions
- Presentation
- Exam (1 week after the trip)

Also learn about climate change mitigation & adaptation in other sectors

VISIT COASTAL WIND ENERGY



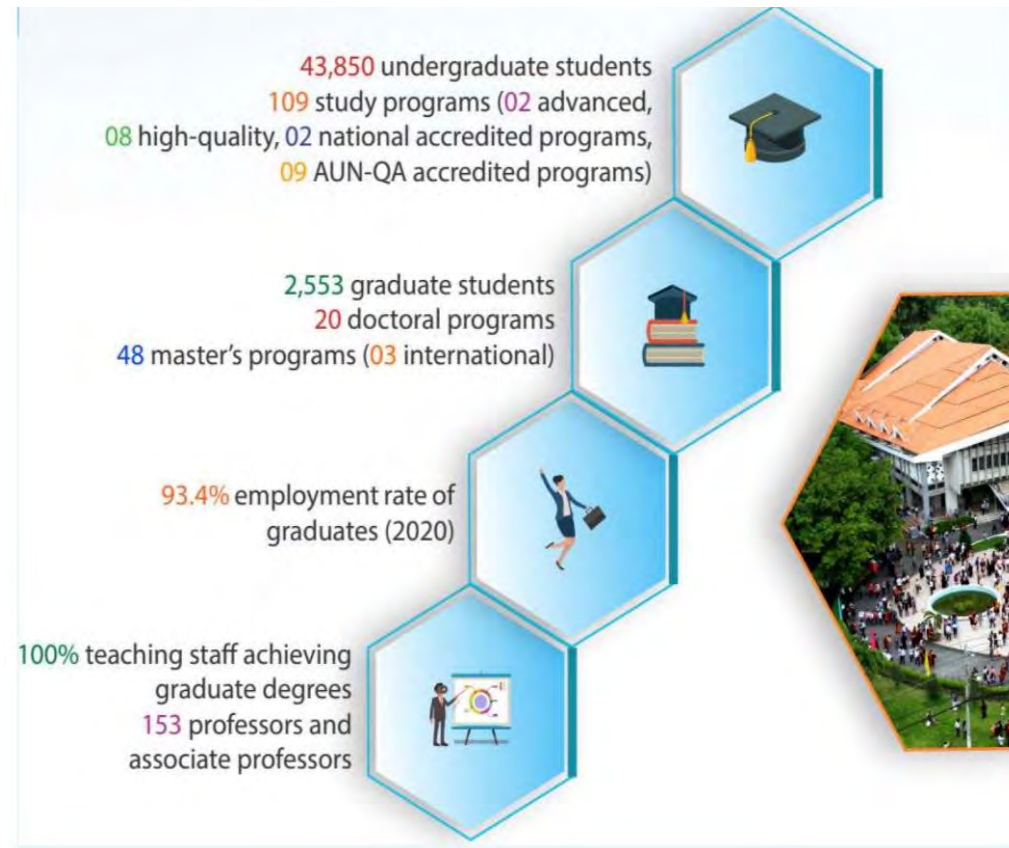
URBAN FLOOD CONTROL MEASURES



Can Tho: Provincial Capital



Our Host: Can Tho University



Course Instructors

University of Maryland:

- Steven Jaffee, Former WB Lead Agricultural Economist. Has worked extensively in Vietnam.

Can Tho University:

- Socioeconomics: Nguyen Huu Chiem, Le Khong Ninh, Van Pham Dan Tri, and Dang Kieu Nhan
- Environmental/Scientific: Duong Van Ni, Vo Quoc Tuan, Le Anh Tuan
- Cultural/Conservation: Le Dinh Bich, Ly Quoc Dang



Physical Activities: a bit of canoeing, cycling and 'walking' on bridges



Cultural Activities & Cuisine



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