# Flashlight: Experiences of flood risk adaptation and regional cooperation in the Mekong Delta

## GSDV 2023 Workshop 6: Regional Cooperation on Flood Risk Adaptation

Dr. Nigel K. Downes Can Tho University,

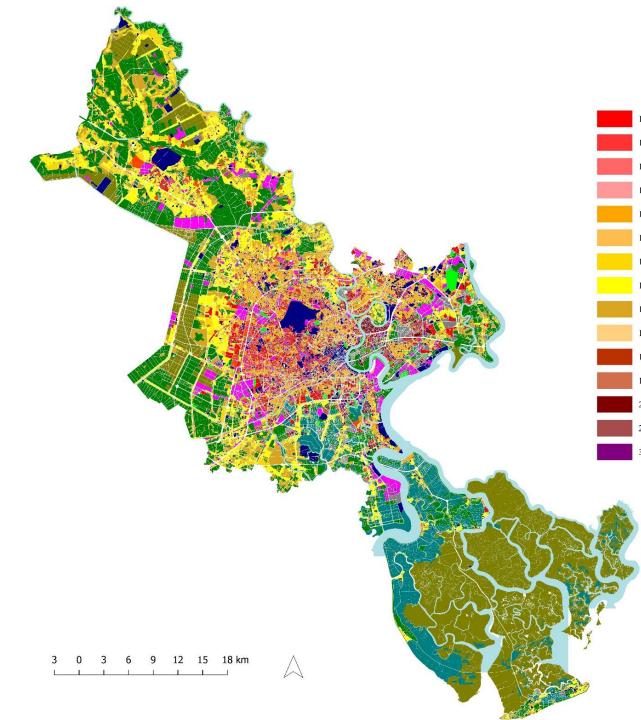
College of Environment & Natural Resources



Integrated expert placed by:

Centre for International Migration and Development

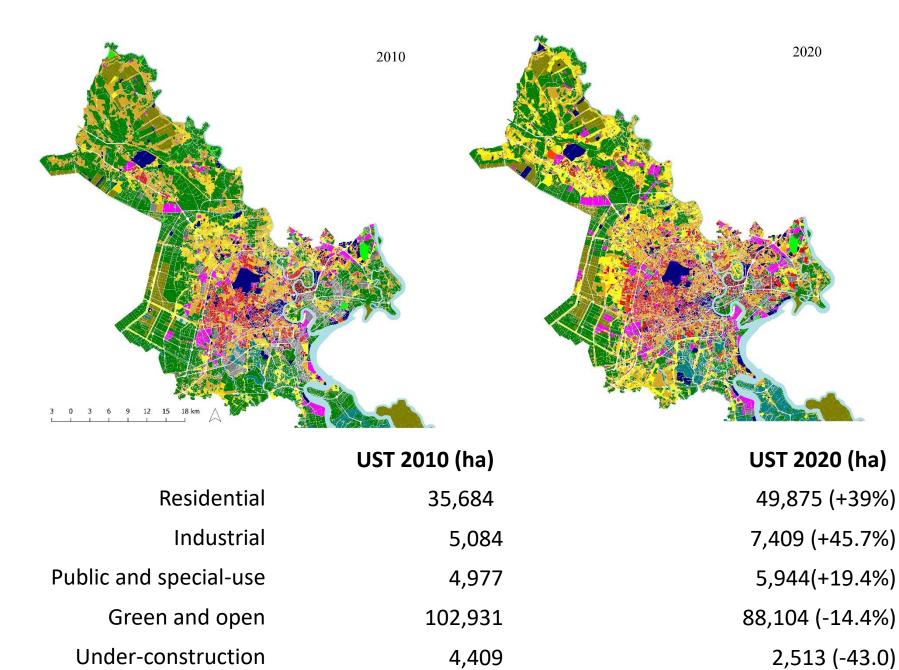
a joint operation of GIZ and the German Federal Employment Agency 26<sup>th</sup> April 2023



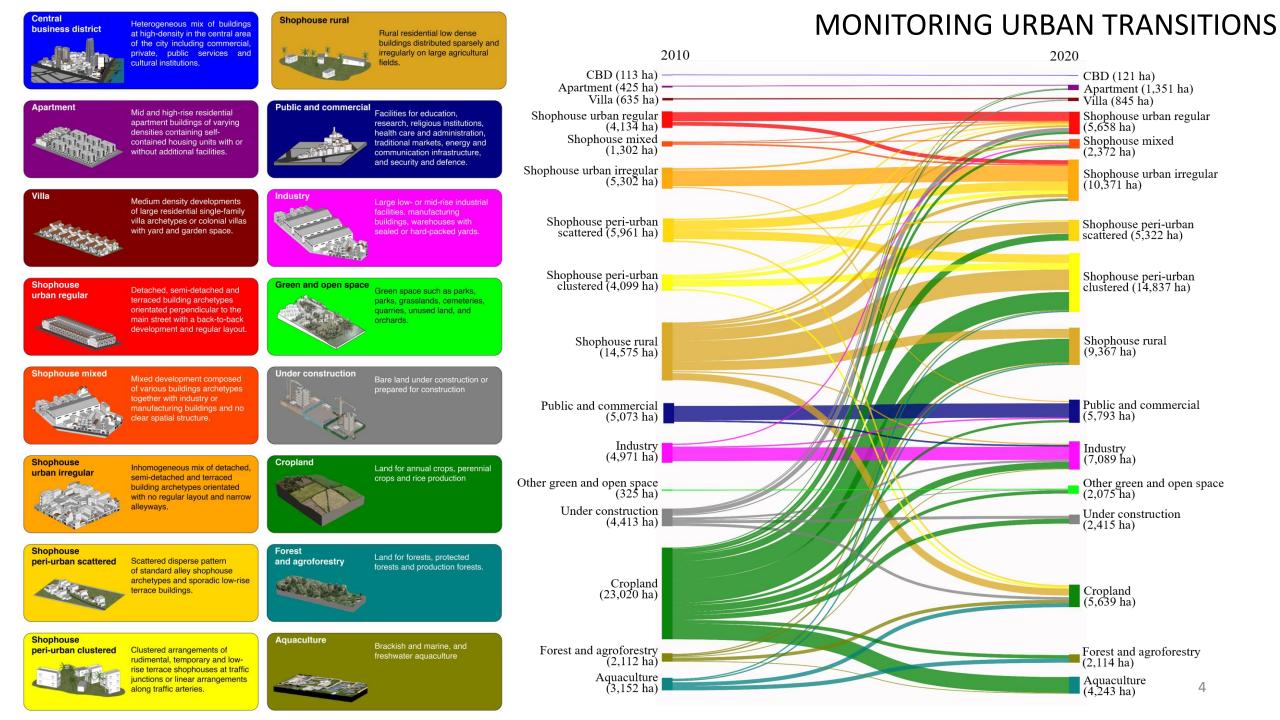
#### 111 Shophouse regular new 321-322-323 Old apartments 592 Security site 410-420 Central business district 611-612-621-622 Industry 112 Shophouse regular new community 113 Shophouse regular new with narrow street/alleyways 511-512 Education 711-712 Park 114 Shophouse regular with yards 521 Traditional market 721-728 Agriculture 121 Shophouse irregular highdense 729 Urban commercial agriculture service 522 Shopping centres 122 Shophouse irregular with yards 531 Religious and worship site 731 Brine & sea aquaculture 532 Site traditional beliefs 123 Irregular shophouse scattered 732 Freshwater aquaculture 124 Irregular shophouse clustered/linear 540 Hospital & health centre 741-752 Agroforest 125 Shophouse rural 550 Administration & public offices 753 Un-used land 561-562-566 Transport infrastructure 126 Shophouse irregular temporary 754 Under construction 131 Shophouse with industry 563 Airport 761 Municipal solid waste site 565 Habour/Port container 132 Shophouse irregular with regular 762 Wastewater treatment plant 211-212 Regular villa 571-572-573 Historical site 771-772-773 Sport site 221-231 Mixed villa 581-582 Energy & comm infrastructure 780 Cemetery 311-312 New apartments 591 Military areas 791-792 Surface water

### MONITORING URBAN TRANSITIONS

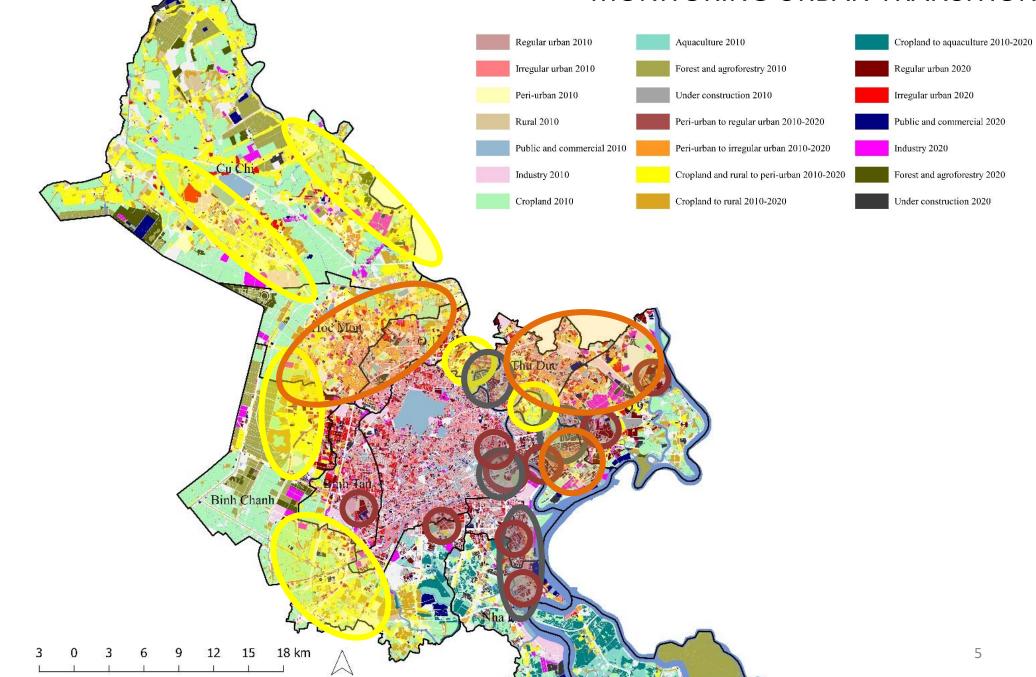
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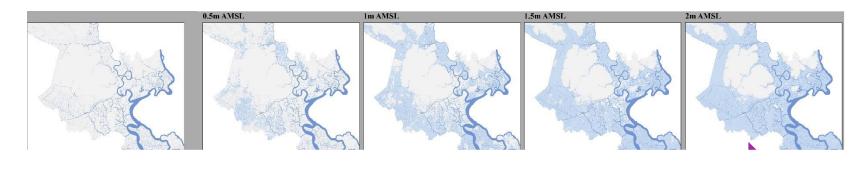
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#### MONITORING URBAN TRANSITIONS



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Flood risk management integrated too late into the planning cycle!

Legally securing areas for flood retention?

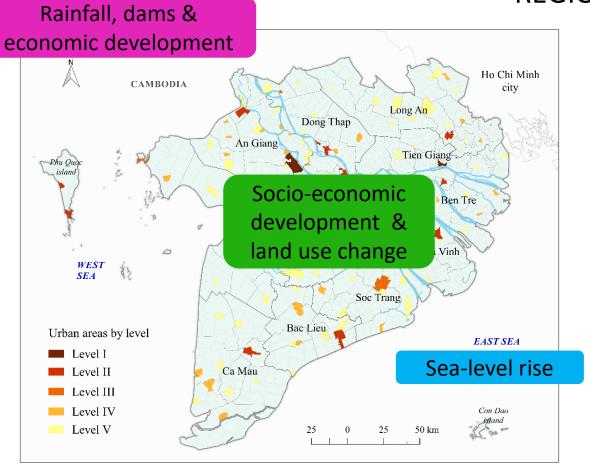
Zoning residential areas out of exposed areas?

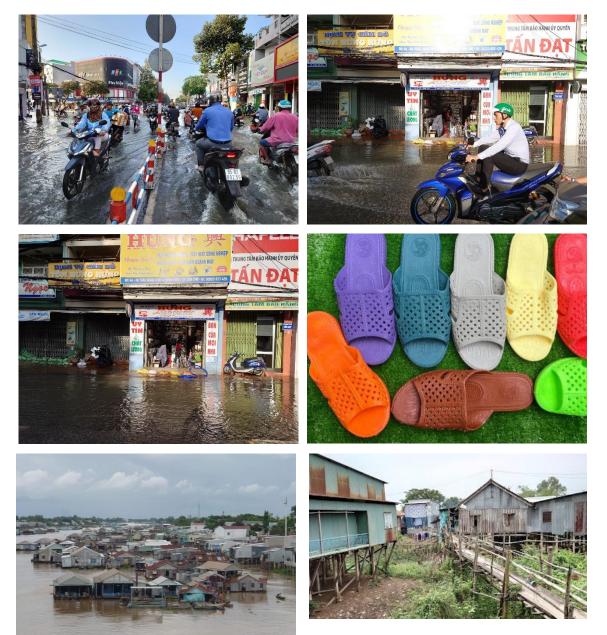
UST 2010 45,549 ha

UST 2020 62,516 ha

LUP 2020 vision 2030 81,146 ha

#### **REGIONAL ENVIRONMENTAL SENSITIVITY AND CHANGE**





#### **IMPORTANCE OF REGIONAL COOPERATION**

	Sea level rise	
npacts	Higher air temperature	
	Higher surface water temperature	Loss of biodiversity and change of species
nge in	More intense rainfall	Change in flood extends and extremes
Climate change impacts	Increased frequency and magnitude of flooding	Surface water contamination
	Higher variability in local climate	Unsafe supply of freshwater and food
	Higher occurrence and severity of storms and storm surges	Soil degradation
	Higher occurrence and severity of droughts	Insecure livelihoods st
	Change in downstream flow volumes	Insecure livelihoods Starting   Migration   More GHG emissions, less carbon sinks
	Change in sediment volumes	More GHG emissions, less carbon sinks
	Canalisation and regulation of natural waterways	Increased risk for human health
	Agricultural intensification	Coastal erosion
ories	Increased fertiliser and pesticide application	Riverbank erosion
raject	Increased freshwater demands	Increased subsidence
Development trajectories	Increased groundwater pumping	Increased salinity intrusion
	Loss of natural habitat, wetlands, forests and mangroves	Higher exposure and vulnerabilities to disaster
	Increased aquaculture	
	Lack of land-use control	
	Increased sand mining	
	Urbanisation and industrialisation	
	Socio-economic polarisation	

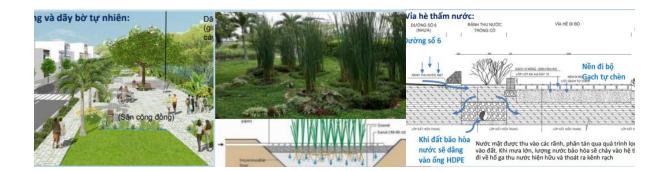
#### SHARED UNDERSTANDING OF REGIONAL DRIVERS OF FLOOD RISKS

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][	Urbanisation and industrialisation
	Socio-economic polarisation

#### **IMPORTANCE OF DESIGN STANDARDS AND NORMS**



Thí điểm hạ tầng xanh kết nối lợi ích cộng đồng: Ý tưởng thiết kế công viên ven Rạch Ngỗng







Công viên bờ sông kdc An Khánh



- Changes in urban master planning to leverage natural components in flood management (i.e. adjustments to DoC Action Plans, and Green Growth Strategy, VMD development plan).
- Changes/flexibility in requirements, regulations, standards and norms related to water drainage infrastructure and urban infrastructure, etc.
- Increased monitoring of socioeconomic/urban/land-use transitions and the drivers of (flood) risk.

# THANK YOU FOR YOUR ATTENTION

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- What potentials do regional cooperation and the exchange of knowledge offer for flood risk reduction?
- Which approaches related to the regional cooperation and knowledge exchange are pursued by projects/ provinces?
- Which groups of stakeholders are addressed and why?
- What results have been achieved so far?