

HCMC CLIMATE CHANGE IMPACT AND ADAPTATION STUDY ADB/HCMC PPC

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Adaptation planning capacity

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- Increasing capacity in modeling the level of threat in coastal and riverine areas. But difficulties with:
 1. Modeling threats to inland and mountainous areas
 2. Communicating scientific knowledge on threat in ways that planners can understand and use
 3. Using information on climate threats in impact and vulnerability assessment (tools, procedures, guidance)
 4. Defining what needs to be done and taking action in situations of uncertainty (“how high should we make the dykes?!”)
 5. Systematically integrating adaptation with development planning (when, how, who, what)

HCMC Study contributes to National Target Plan priorities:

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1. Assessment of climate change threats and impacts on sectors, communities and areas
2. Development of actions plans to respond to climate change
3. Mainstreaming adaptation in socio-economic and spatial planning, and
4. Strengthening capacity in organization, institutions and policies on climate change.

HCMC study scenarios

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- **One time horizon** for assessing climate extent and impact: 2050
- **Two IPCC scenarios:**
 1. A2: High emission - Minimal innovation to current practice (SLR 26cm)
 2. B2: Medium emission – Mitigation measures applied (SLR 24cm)
- **Regular and extreme** climate situations – flood, drought and saline intrusion
- **With and without planned comprehensive dyke system** – designed for current climate (USD750 million)

Communes with Highest Pollution Load and River Network



The steps to adaptation planning

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1. **Assessing the threat:** Estimating the kinds of climate and hydrodynamic changes and their nature, scale and location
2. **Socio-economic projections:** Modeling socio-economic conditions in future climate situations
3. **Assessing the impact:** Linking estimates of climate threat to potential socio-economic and environmental impacts
4. **Assessing vulnerability:** Identifying areas, sectors and communities sensitive to climate change impacts
5. **Identifying adaptation options and priorities:** Defining what needs to be done, by whom and when
6. **Integrating with development planning:** policies, procedures, design standards, budgets, projects
7. **Implementation of adaptation measures:** including monitoring, learning and adjustment

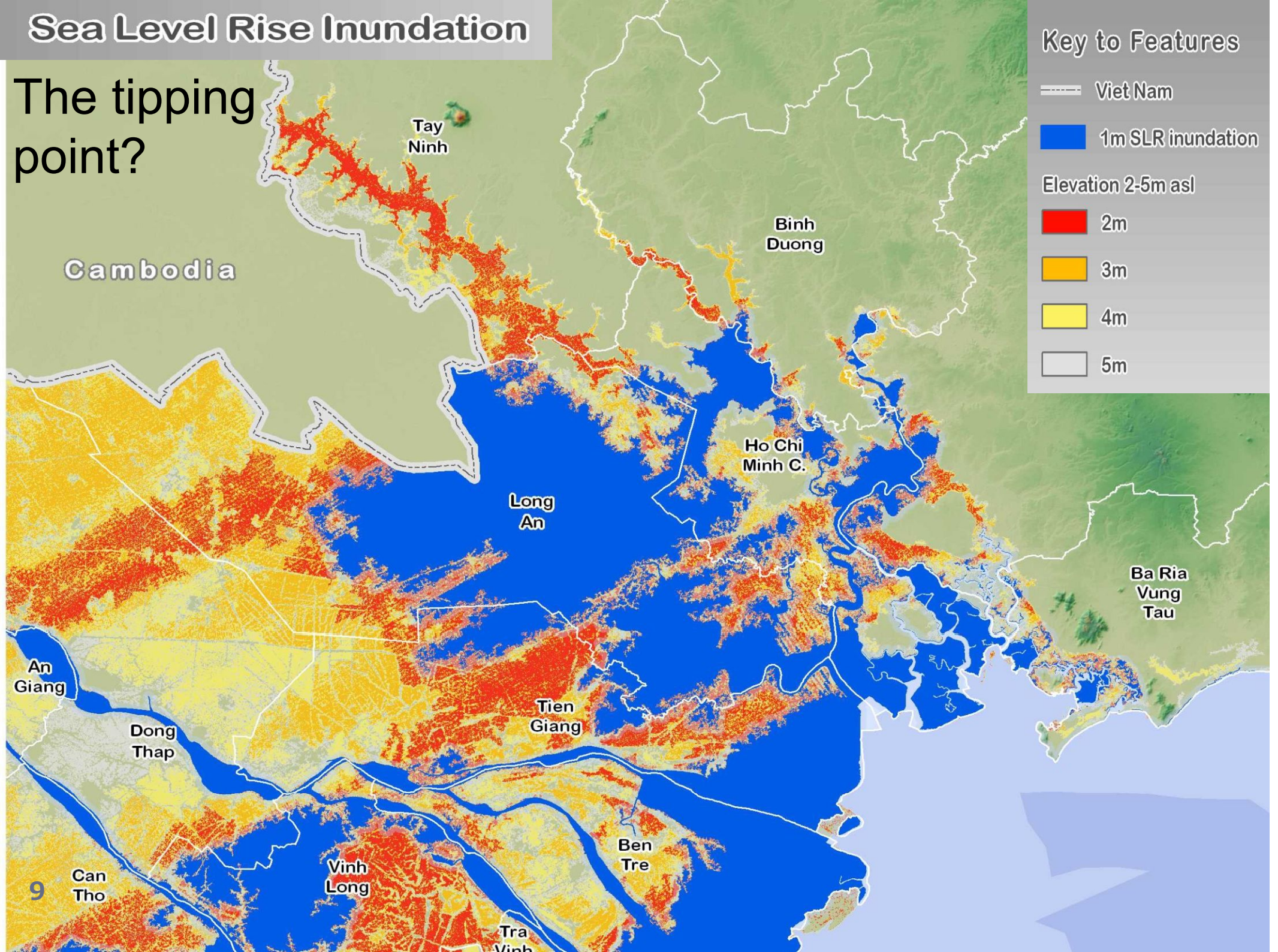
The 2050 climate change threat

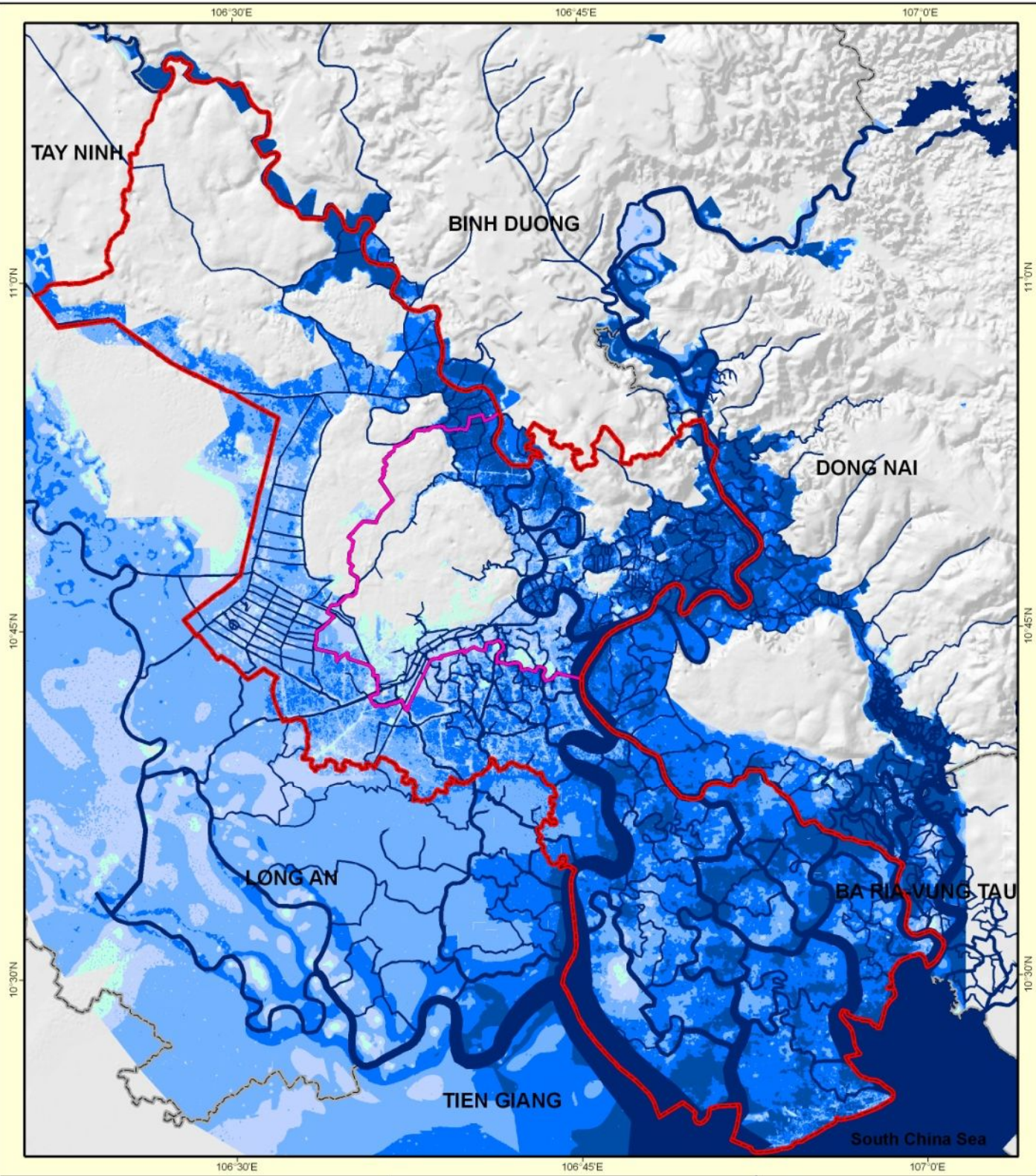
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- **Regular events** (ie daily or seasonal)
 - ▣ Temperature (seasonal and rising)
 - ▣ **Monsoon rainfall** (annual and more intense)
 - ▣ **Tides** (twice daily and increasing amplitude)
 - ▣ Wind (annual and more intense)
 - ▣ Drought (annual and more intense)
 - ▣ Saline intrusion (regular and greater inland reach)
 - ▣ Sea level rise (incremental increase – 26cm/25cm)
- **Extreme events** (eg 10 or 30 year return period)
 - ▣ Tropical storms – wind and rain (more frequent)
 - ▣ **Storm surge** (more intense)

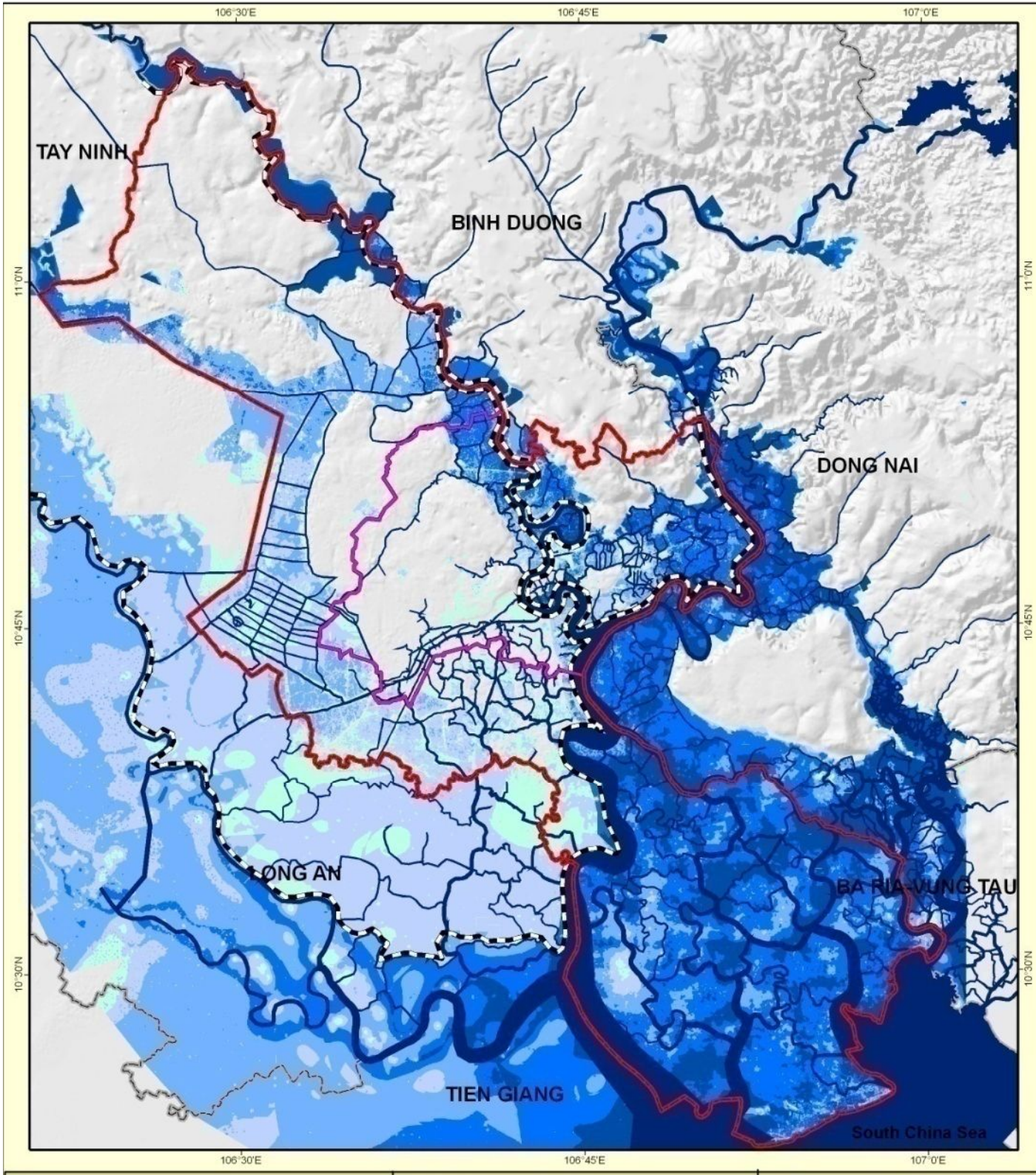
Sea Level Rise Inundation

The tipping point?

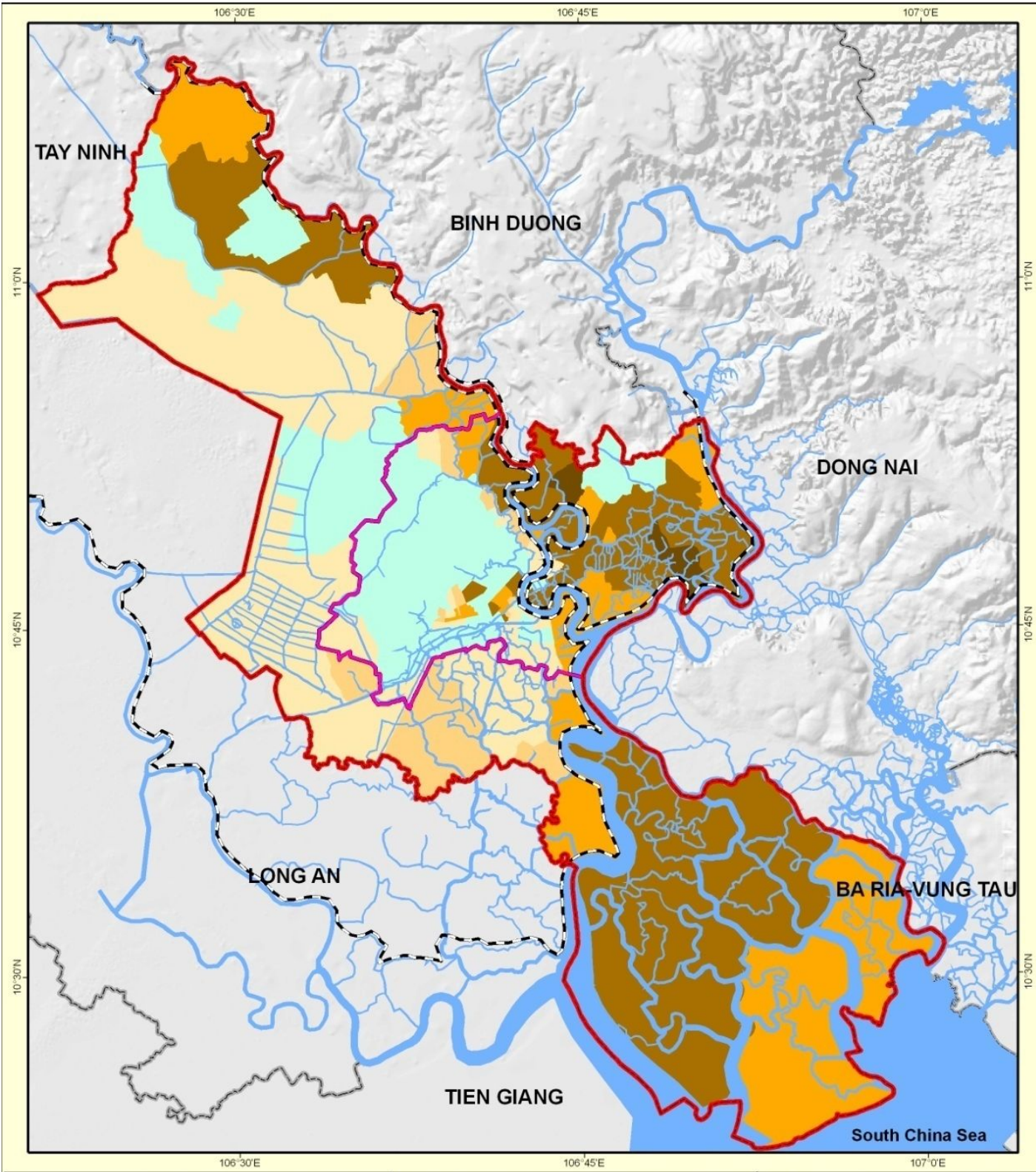




2050
extreme
flood
event
without
dykes



2050
extreme
flood
event
with
dykes



2050
regular
flood
duration by
commune
(days/year)
with dyke
system

Impact assessment

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An assessment of the impacts on

- 1. Economic assets:** Industrial assets, water, transport, agriculture and energy, public health infrastructure
- 2. Social variables and assets:** population affected, livelihood/income types most affected, poor communities affected
- 3. Environmental assets:** aquatic systems, forest resources, fish resources affected, biodiversity lost
- 4. Environmental quality:** (i) Areas affected by salinity, and (ii) areas affected by wastewater/pollution