

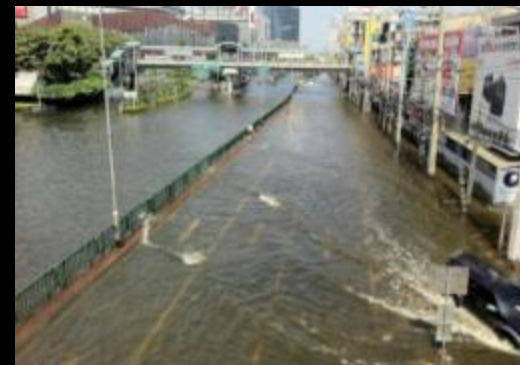
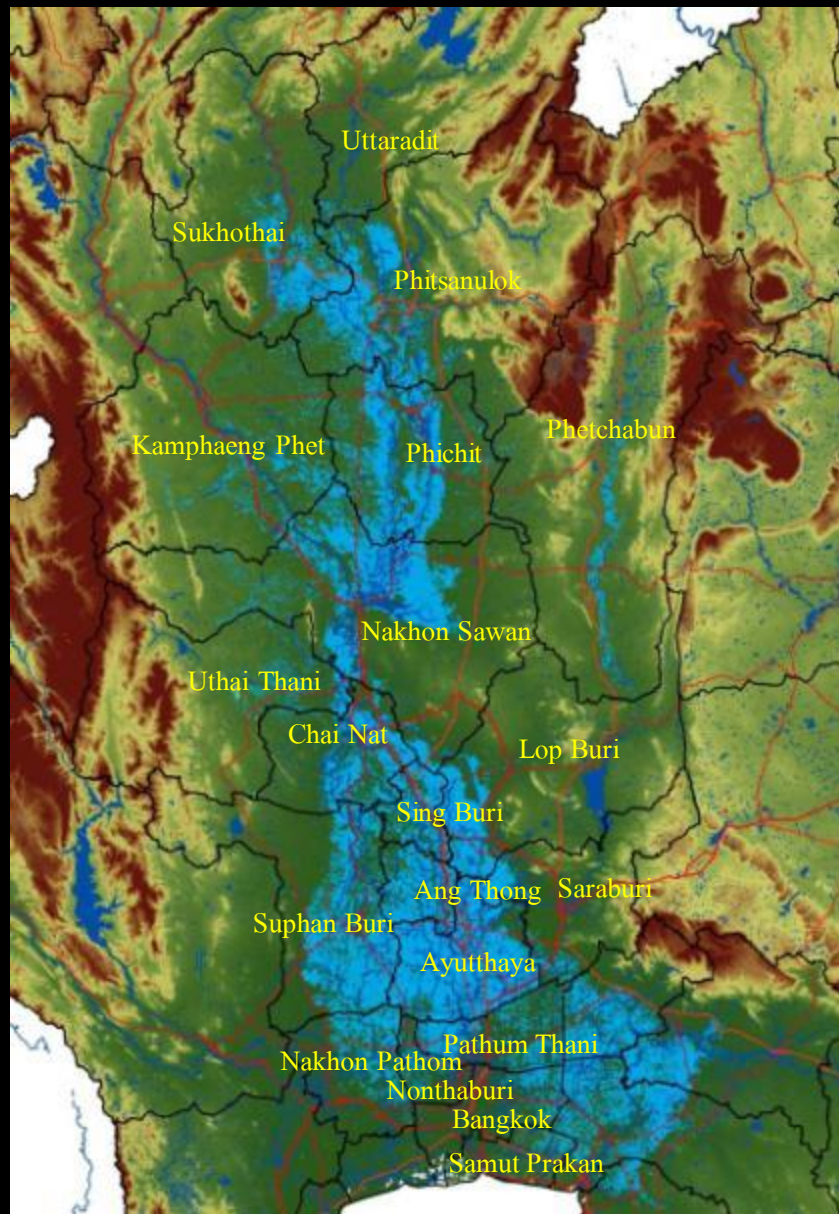
Impacts of Climate Change in Thailand

Chirapol Sintunawa
Thailand

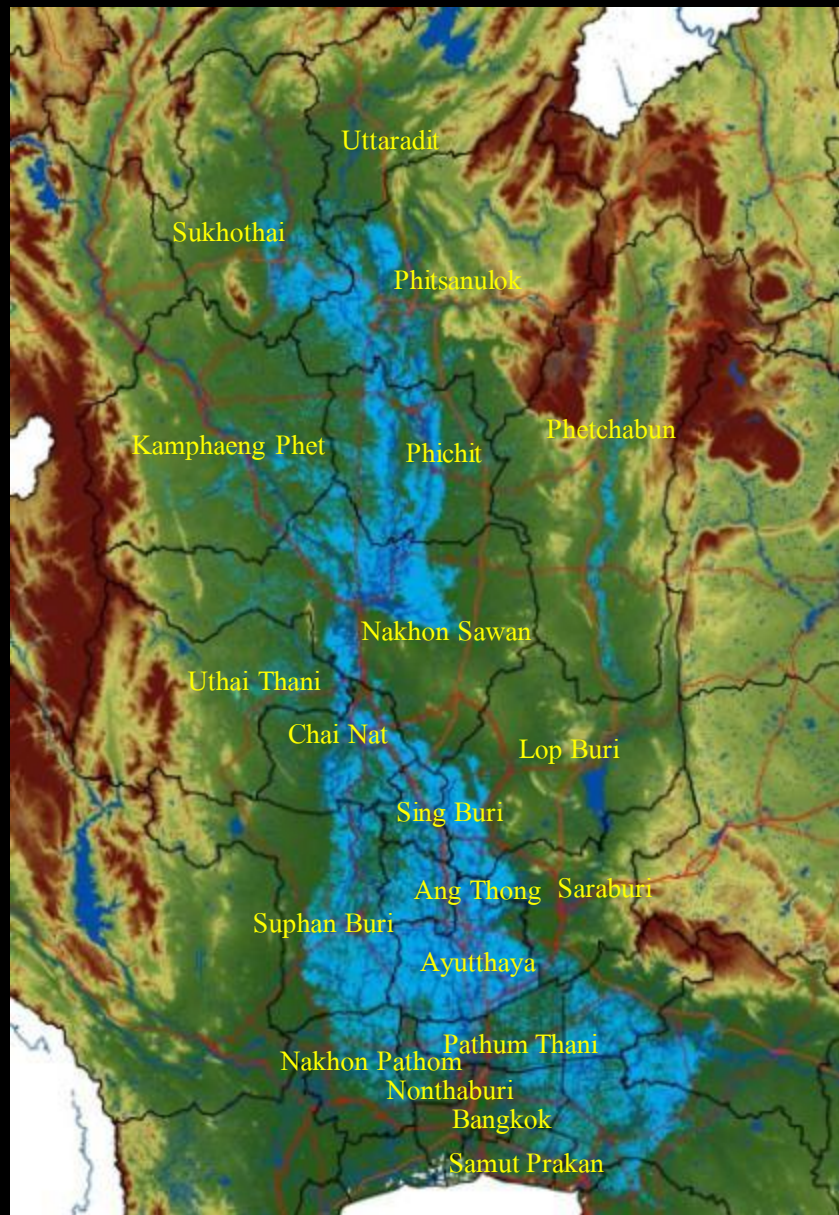
Background

- 1980 – 2010 : 105 natural disasters in Thailand
- 64 million people affected and 12,000 deaths since 1980
- \$194,282,000 USD cost every year on average
- 48% of surveyed small & medium sized enterprises (SMEs) were affected by disaster at least once per year
- Avg. cost per SME per event: \$115,441 USD
- Avg. recovery time: 2 months
- 86% of respondents have never had disaster risk management training (DRM)
- 72% of respondents stated they would use DRM training if available

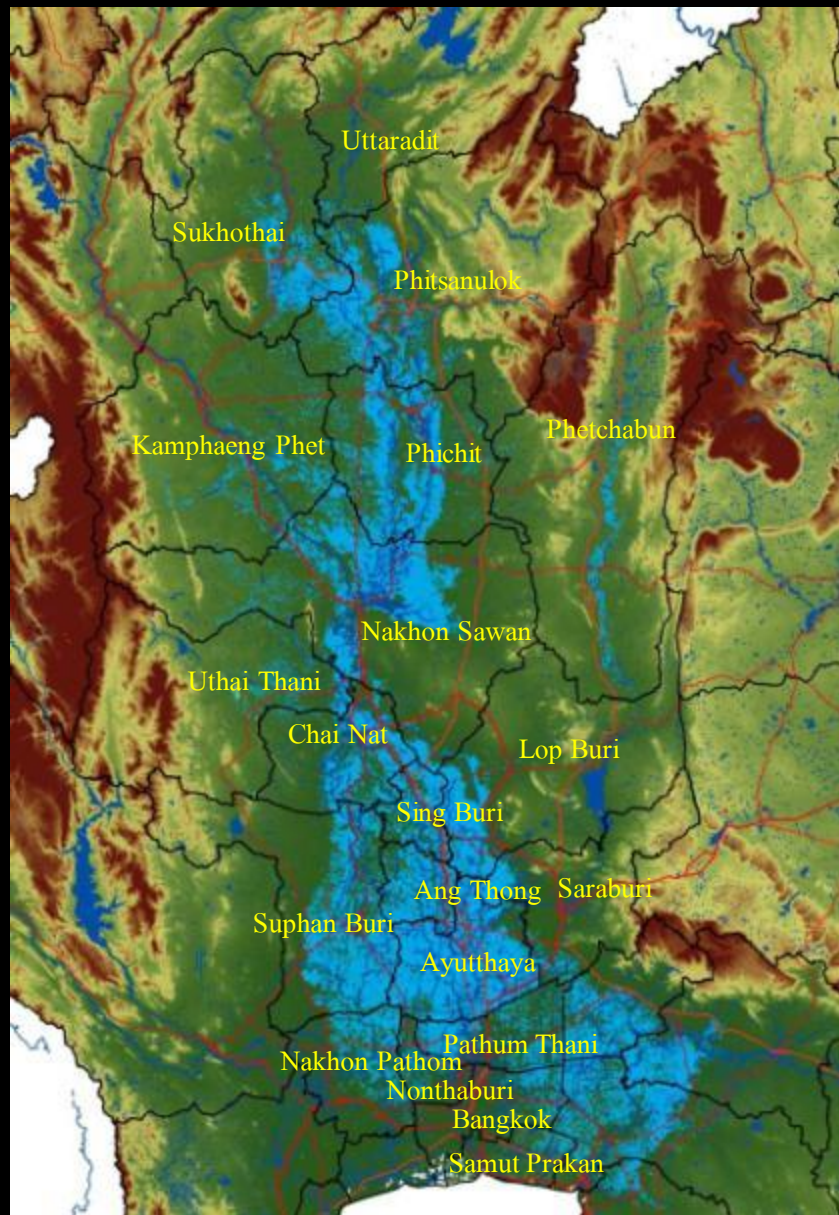
Flood in 2011: Industrial Areas and Major Infrastructure



Flood in 2011: Urban Areas



Flood in 2011: Rural/Agricultural Areas







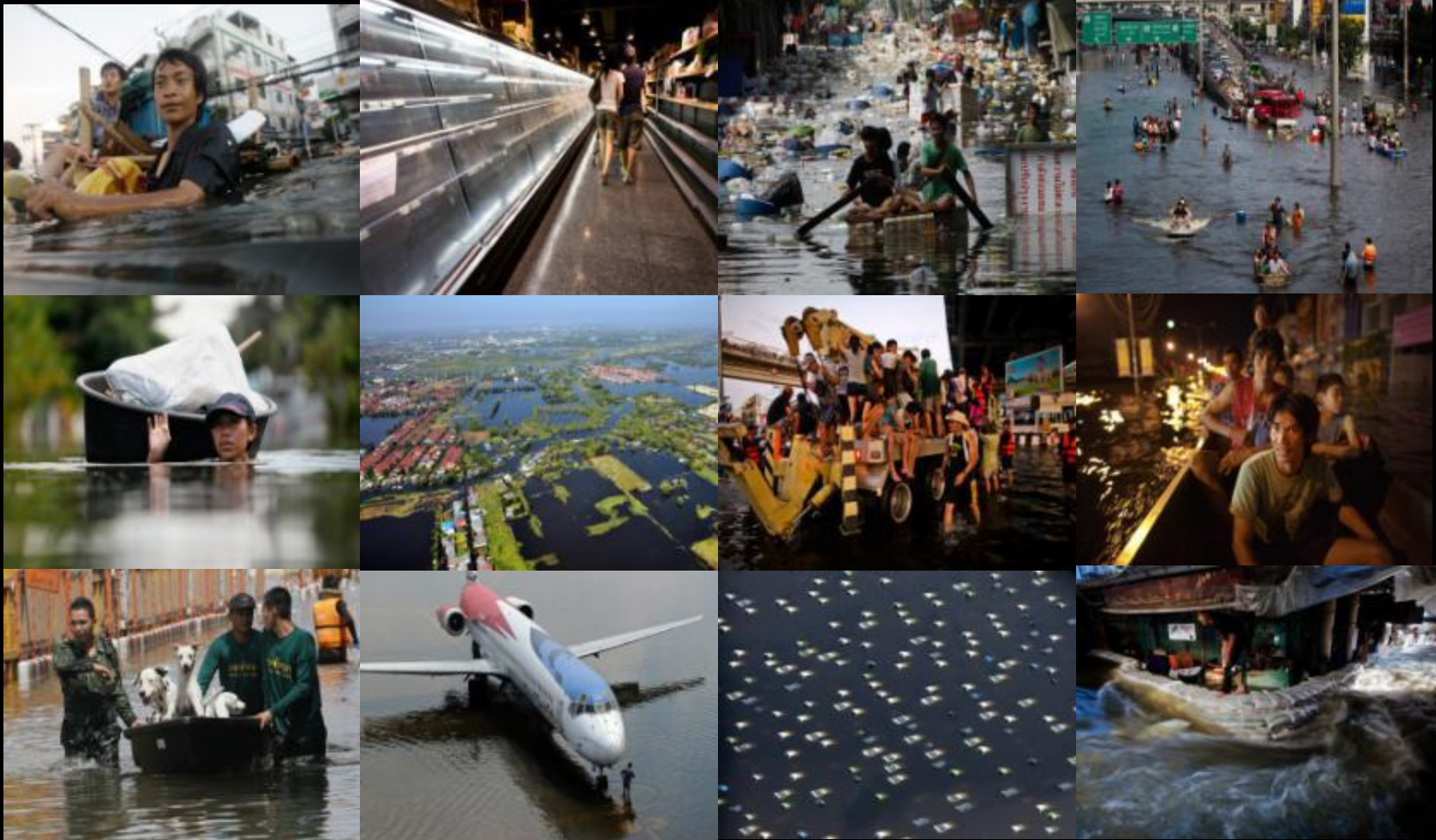








We could not imagine such Damages & Livelihood



Empty shelves at almost every store during flooded period.





Empty Airport



Shore house
collapsing in sea
level rise affected
area.



Raised floor as sea level rise adaptation in Bangkok



Raised under water milestone to be more visible and become tourist attraction

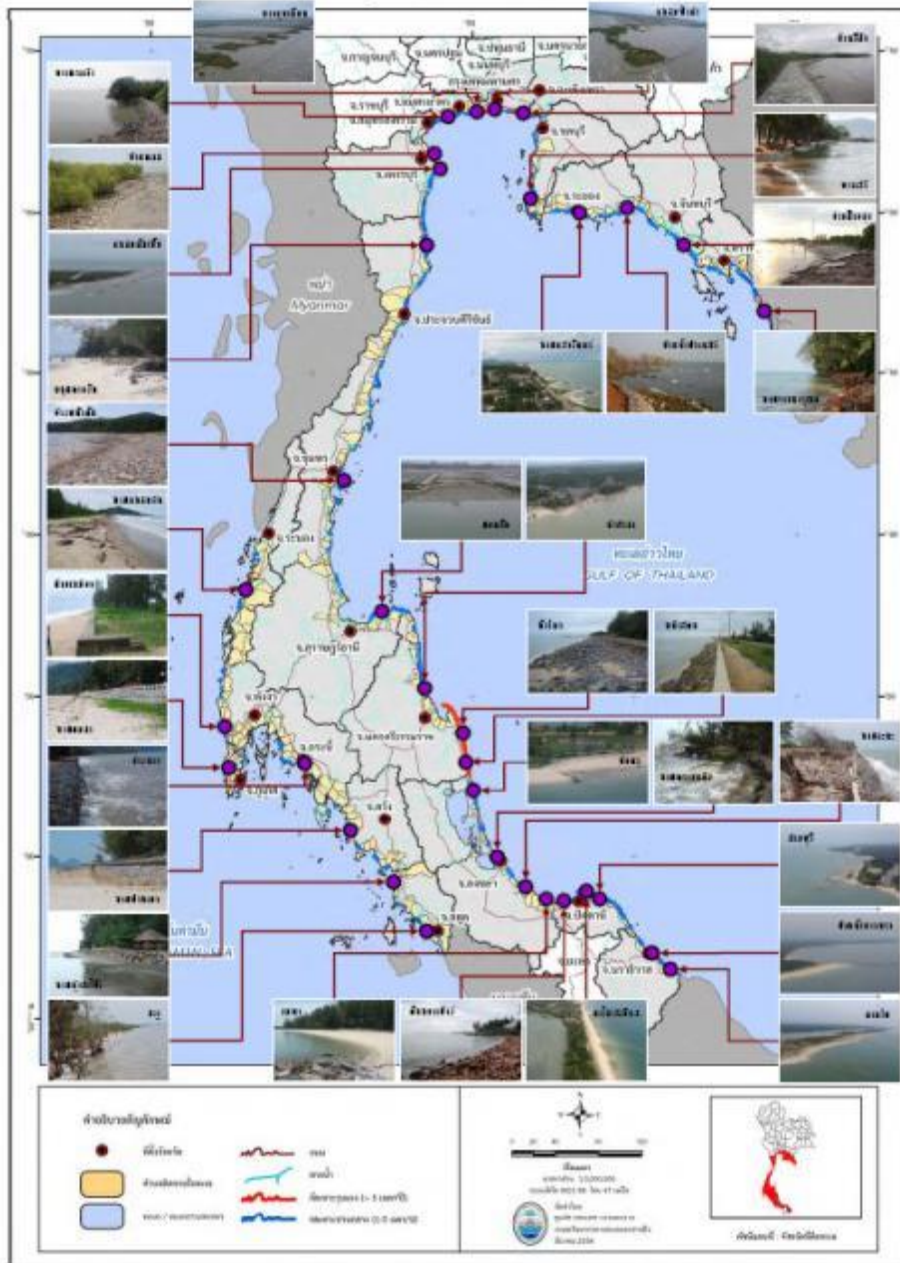


Wat Baan Khun Samut Chin



Wat Baan Khun Samut Chin

แผนที่แสดงสภาพปัญหาการกัดเซาะชายฝั่งทะเลของประเทศไทย



Beach erosion in Thailand

NPuangkeaw



Sea level rise and beach erosion adaptation

1964



@chatchawassa

1992

ရွှေဘိုမြို့နယ်

2014



Where is Wat Baan Khun Samut Chin?

- 30 km from Bangkok
- Accessible by boat and walking only
- Concrete bridge connects it to land
- Now an island in the ocean 500 meters off shore



The temple is now two meters above sea level



Why is land eroding?



- River dammed upstream (sediment cannot reach coast)
- Mangrove forests destroyed
- Increasing storms and higher waves

Submerged electricity poles show where town once was





Living with continuous adaptation.





- Gulf of Thailand is projected to be one of the areas of the world that will see the largest increase in sea level.
- Thai coast has already lost 60km to sea level rise

How quickly is Khun Samut Chin's coastline changing?



- Lost 1 kilometer and badly damaged an additional 4 kilometers in 2 generations
- Moo 8 (177 houses) totally lost already.



- Village's population has decreased 50%
- Many residents have moved their homes further from sea 10-12 times in their lifetimes
- Monsoon waves have doubled in size in 20 years

Initial reactions to rising water



- Started building dams in 1994
- Earth, stone, wood
- None worked well
- School is in its 3rd location
- Mangroves could not survive higher waves



Raising the floor
shrunk
doorways at Wat
Baan Khun
Samut Chin

November 2013

Raising the floor shrunk doorways at Wat Baan Khun Samut Chin

November 2013





Raising the floor shrunk doorways at Wat Baan Khun Samut Chin

November 2013



**Windows
shrunk as well**



The temple is still the heart of the community



Current Adaptation Strategies



- Putting homes and paths on stilts
- Promoting ecotourism to generate money to pay for stilts and other improvements

Mangroves can reduce waves, and waves can also reduce mangroves



What does the future hold?



- Sea level is still rising
- Storms are getting worse
- Polluted water endangers villagers' fishing livelihood

Increasing construction materials for never ending adaptation.





*Accelerating
transformations
and
adaptations*



December 13, 2013



Initiation of Bangkok Critical Mass

Bangkok Friday Bikes



December 13, 2013

European Sustainable mobility key person in Bangkok





Government adaptation ideas:

1. Build a large water retention wall across Chao Phraya river,
2. Build high wall along the beach,
3. Build more big dams upstream to hold water and prevent flooding.

Action taken in structural changes

Two departments were established recently to deal with:

- Emergency response
- Coordinating government departments in rescuing, supporting and restoring affected communities
- Short term disaster warning and forecasting
- Loss and damage reporting

- There have been no assessments on potential impacts or changes in the next ten or twenty years.

Planning for sustainable future has not been initiated.

Adaptation efforts are in hands of unaware and uneducated public, businesses and households in disastrous affected areas.



Thank you