



# **Building Resilience to Climate Change Impacts – Coastal Southeast Asia**

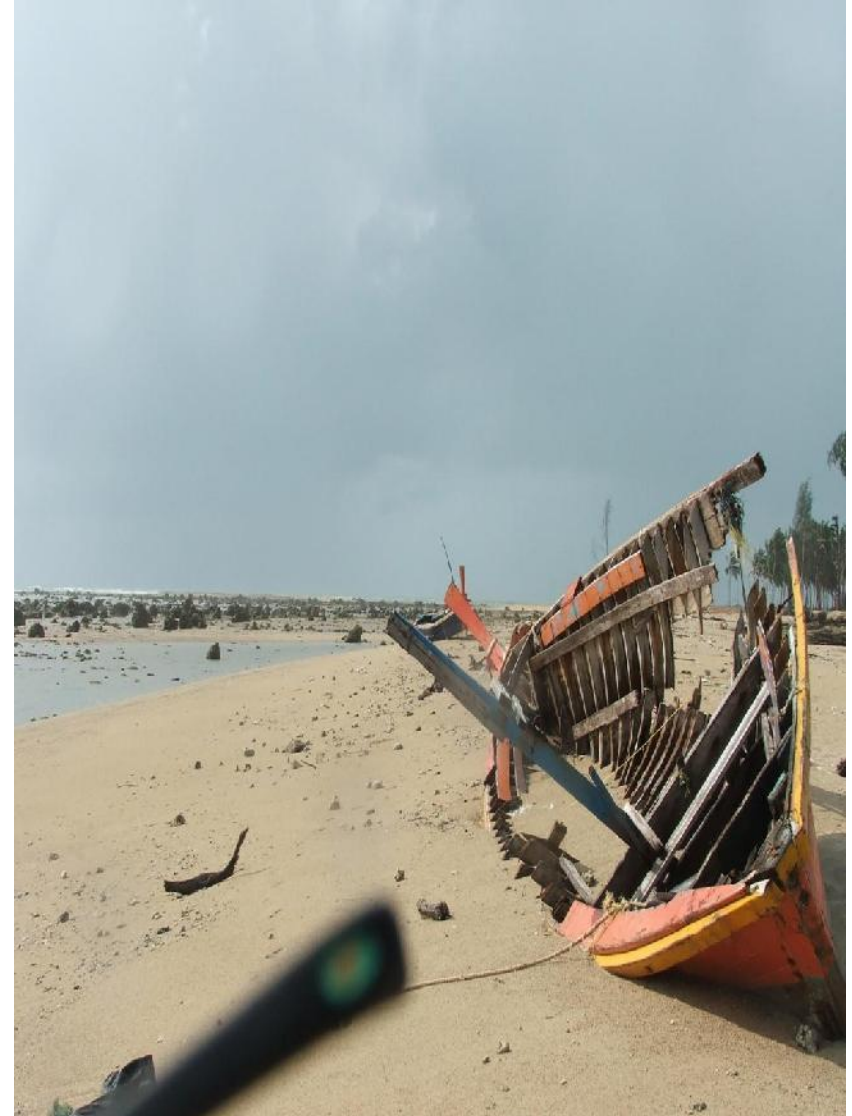
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# What impact will climate change have on the coastal zone?

- Sea level rise
- Higher sea temperatures
- Changes in precipitation patterns and run off (water flow)
- Changed oceanic conditions; pH, warming upper layers, changes in ocean currents
- Changes in storm tracks, frequencies & intensities of storms



## What will this lead to?

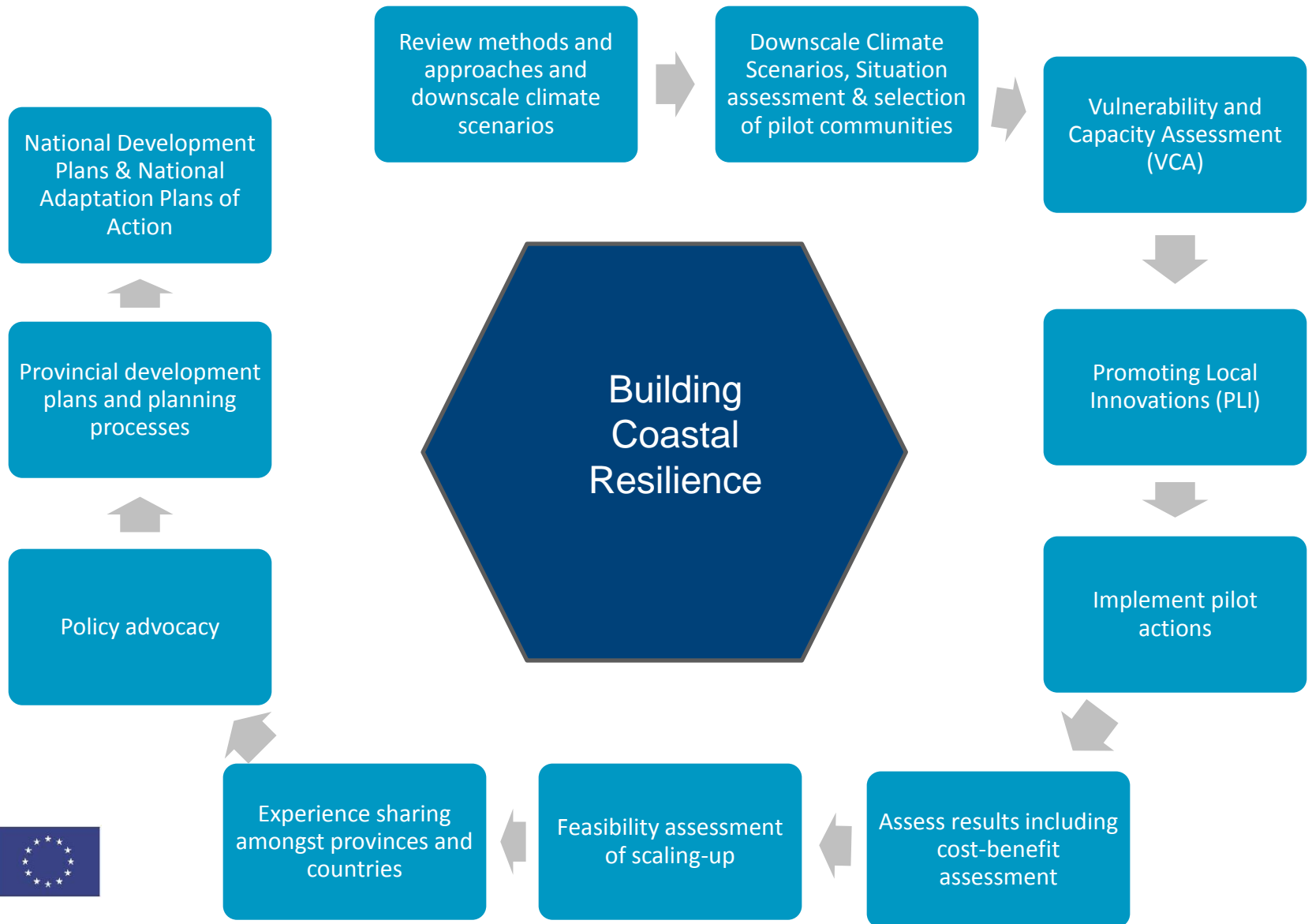
- Displacement of coastal lowlands & wetlands
- Increased coastal erosion
- Increased flooding & drought conditions
- Saliniation of surface & ground waters
- Impacts on habitats & species
- Livelihood activities more unpredictable



# Building Resilience to Climate Change: Coastal Southeast Asia

This project aims to Increase adaptive capacity of people and ecosystems on which they depend to cope with the anticipated impacts of climate change and plan for DRR, through sound governance and planning





# Adaptive Capacity – what is it?

- Human adaptive capacity is the ability to respond to challenges by managing risk and impacts, developing new knowledge and devising effective solutions.
- Adaptation requires flexibility to experiment and adopt novel solutions
- Depends on effective governance
- In ecosystems, adaptive capacity is related to genetic diversity, species diversity, and heterogeneity within landscapes
- Species distribution range, life-history parameters and abundance all important for adaptive capacity



# Understanding community context, including capacity to respond to climate and non-climate pressures

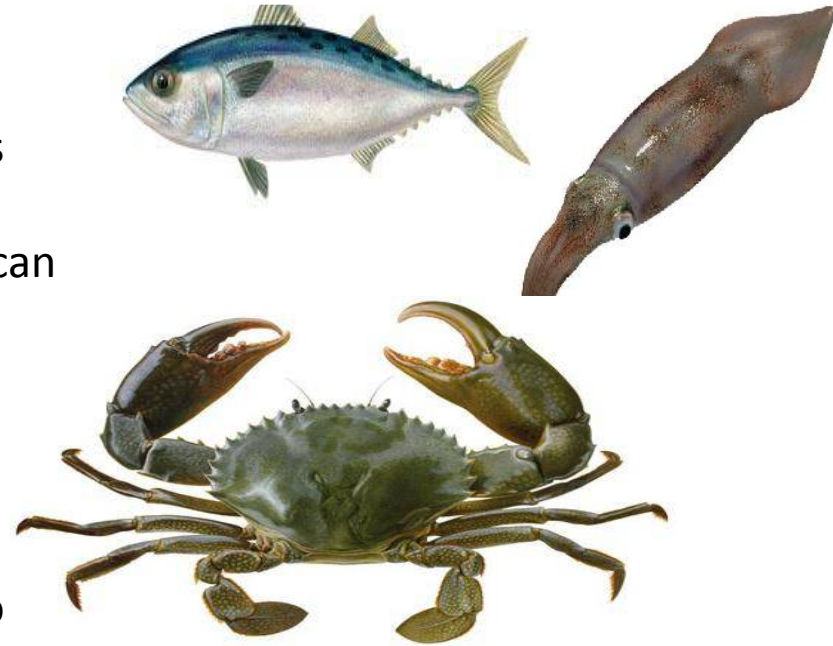
## E.G. Bang Chan Sub-District, Chanthaburi , Thailand

- 6,400 hectare area, 6 villages containing 1,300 households
- access by boat only
- mangroves 60-70% degraded
- no land title deeds,
- shrimp main source of income
- water for drinking, household use bought from outside in dry season
- Stronger winds, higher waves, increasing storm frequency



# Understanding species and habitat context including responses to Climate and non-climate pressures

- Mackerel sensitive to temperature, rely on currents for dispersal – may shift range to cooler seas
- Mud crab sensitive to temp, pH, ocean circulation -can shift range by 1,000km
- Squid very adaptable, may grow faster and replace other species
- Seabass more tolerant of higher temp than grouper snapper – up to 32°C
- Prawns may grow faster but be more susceptible to disease





# Promoting Local Innovation (PLI)

## e.g. Water supply solutions

- Piped water
- Ground water
- Desalination
- Improved rainwater harvesting



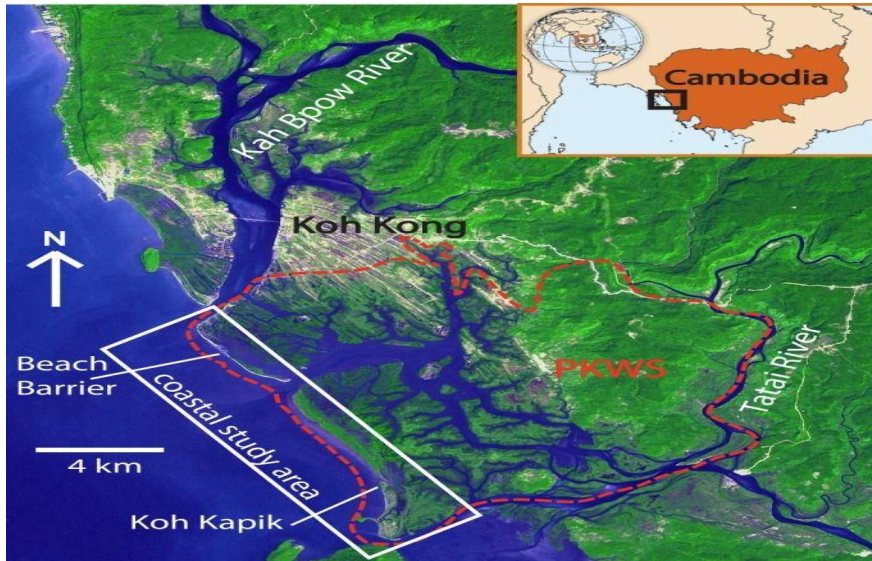


# Case Study: Peam Krasop Wildlife Sanctuary (PKWS)

1. Koh Kong Province south-western Cambodia
2. Established in 1993, covers 26,000 Ha, protects one of most important mangrove areas in Cambodia.
3. About 9,000 people living in 13 communities
4. Major vulnerabilities relate to limited freshwater supply, siltation of creeks used for transport, beach migration, loss of mangrove, increased exposure to storms



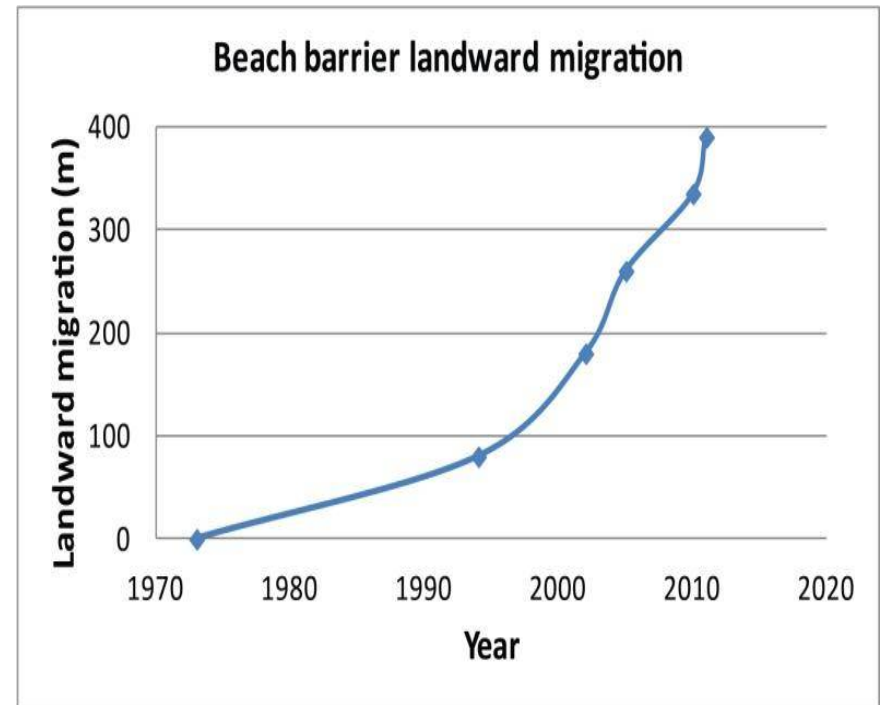
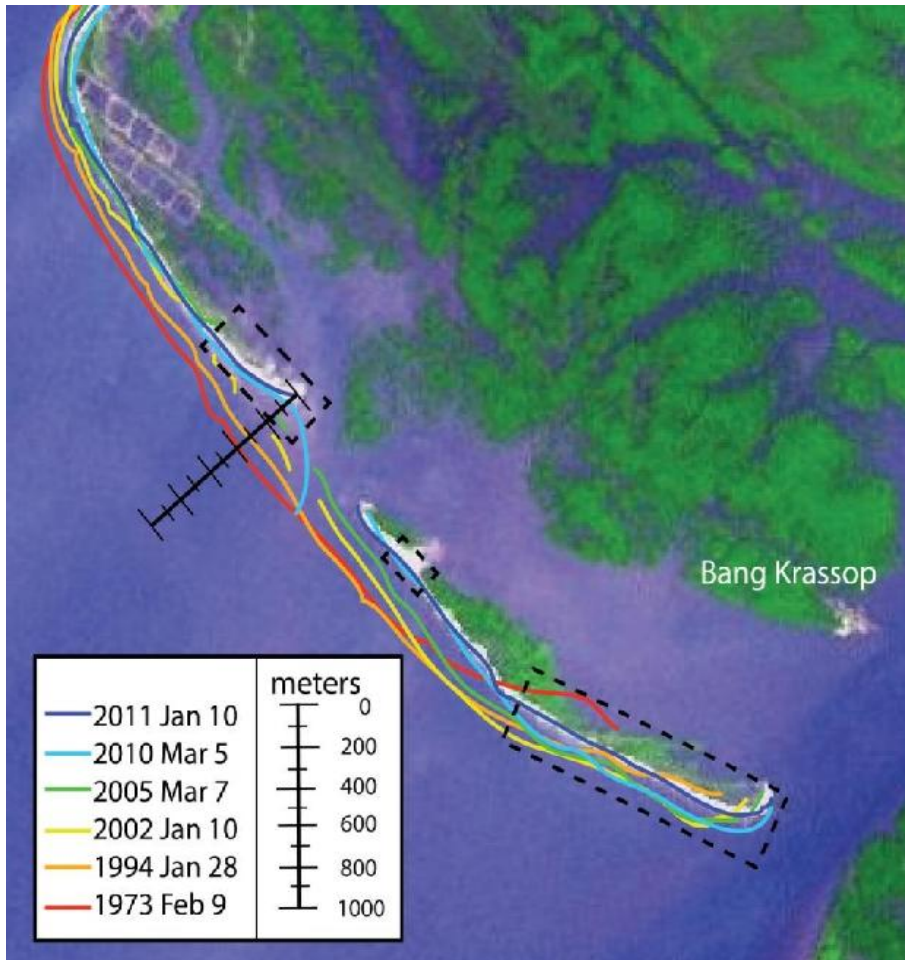
# Beach Migration and Mangrove Loss in PKWS



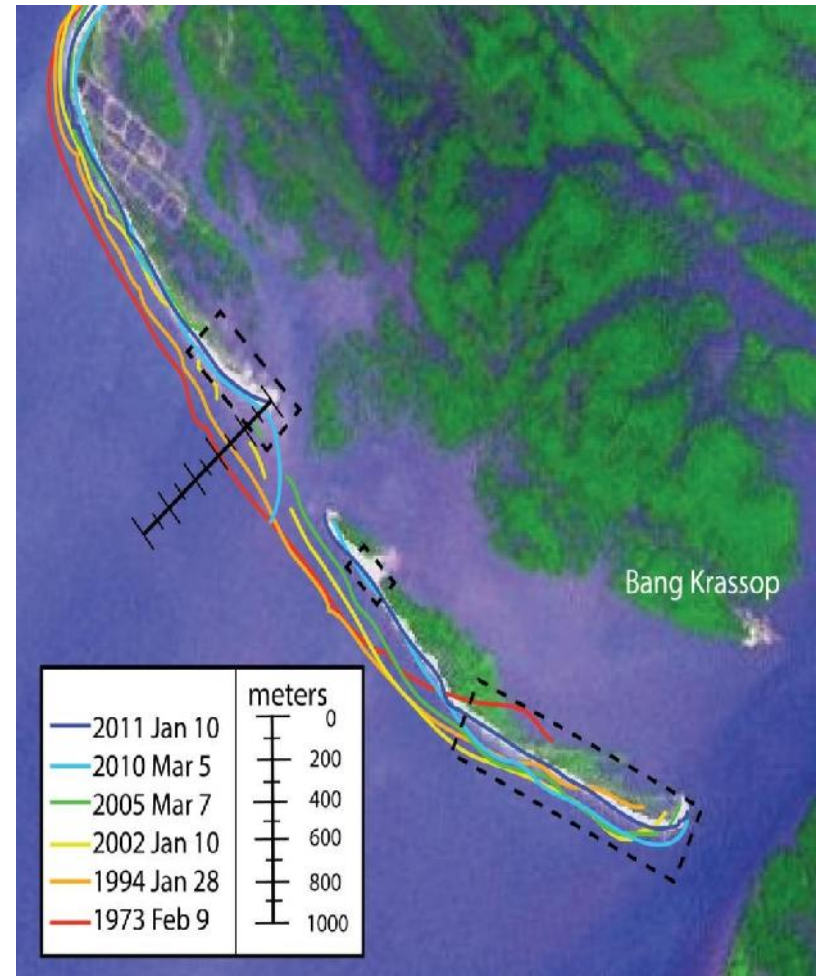
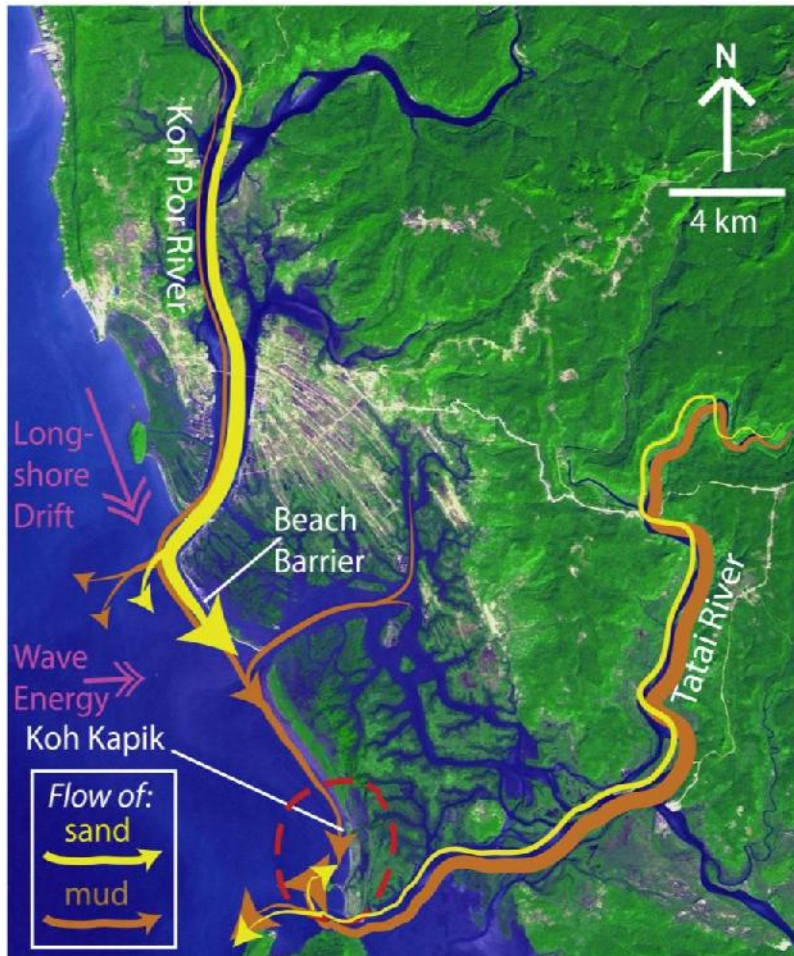
Landward migration of barrier beach and mangrove devastation, increasing vulnerability of human settlements



# Rate of Beach migration in PKWS – speeding up



# Sediment Flow and Priority Areas for Intervention



# Beach Stabilisation through re-vegetation



## Implementing range of a pilot actions

- Water supply, land tenure, mangrove restoration, fisheries management–Chanthaburi
- Crab bank, dolphin conservation, and fisheries management–Trat
- Sea-grass management and coastal land-use planning/zoning – Kampot
- Mangrove restoration and co-management, erosion management – Kien Giang, Soc Trang & Ben Tre
- Payment for Ecosystem Services - Can Gio



# Principles for Effective Adaptation

1. Long-term local solutions for people and nature – “no-regrets”
2. Reduce non-climate stresses- address the “adaptation deficit”
3. Involve communities, address governance and justice issues
4. Multi-partner, multi-sector, multi-scale
5. Build on existing good practices, support local innovation
6. Integrate natural solutions with wider adaptation strategies
7. Communicate, educate, share and exchange

[www.iucn.org/building-coastal-resilience](http://www.iucn.org/building-coastal-resilience)

