

Strategies in responding to disappearing coastlines

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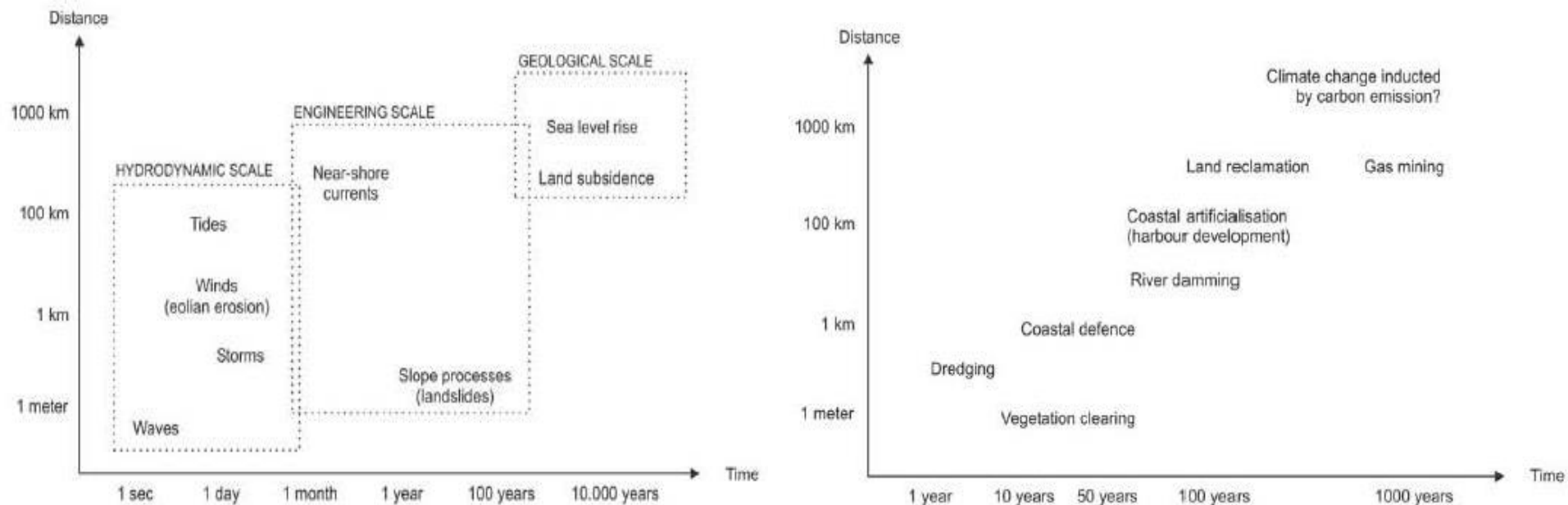
website : coast4all

Outline

- Coastal erosion as global problem.
- COBSEA (Co-ordinating Body on the Seas of East Asia) regional strategy.
- Project strategies to address coastal erosion & lessons learnt.
- Paths forward.

Coastal erosion

- **Global issue** with already severe coastal erosion.
- Physical & human **factors** involved.
- Exacerbated by **sea level rise**.

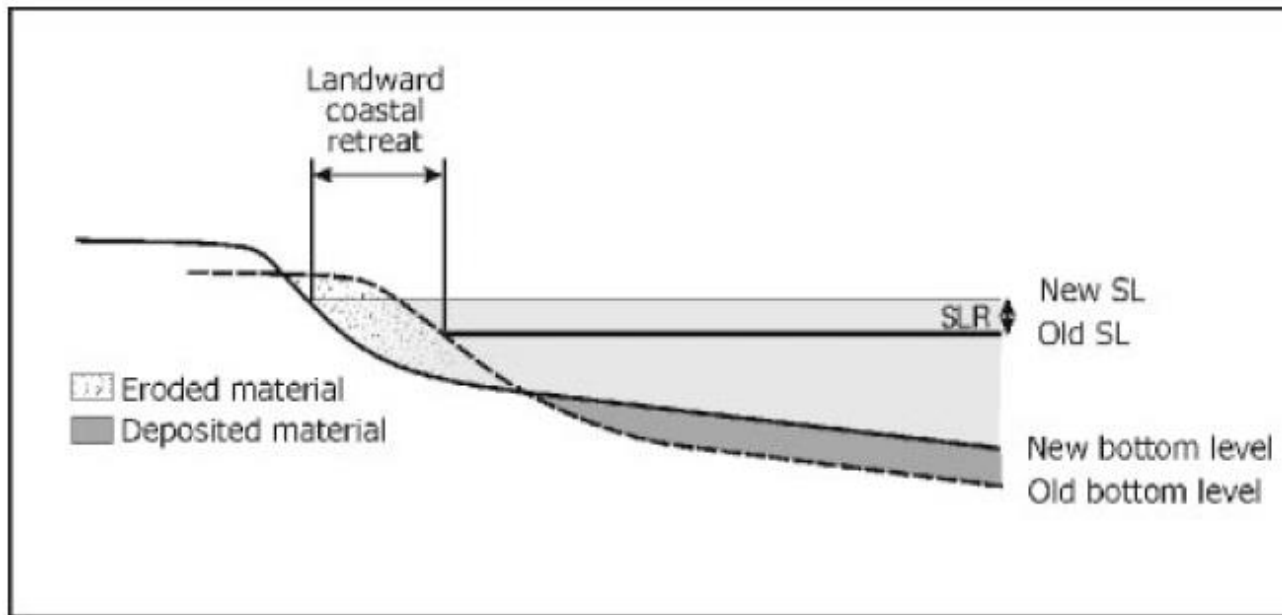


(EU 2004)

Sea level rise

Emission scenario	Representative Concentration Pathway (RCP)	2100 CO ₂ concentration (ppm)	Mean sea level rise (m)	
			2046–2065	2100
Low	2.6	421	0.24 [0.17–0.32]	0.44 [0.28–0.61]
Medium low	4.5	538	0.26 [0.19–0.33]	0.53 [0.36–0.71]
Medium high	6.0	670	0.25 [0.18–0.32]	0.55 [0.38–0.73]
High	8.5	936	0.29 [0.22–0.38]	0.74 [0.52–0.98]

(IPCC 2014)

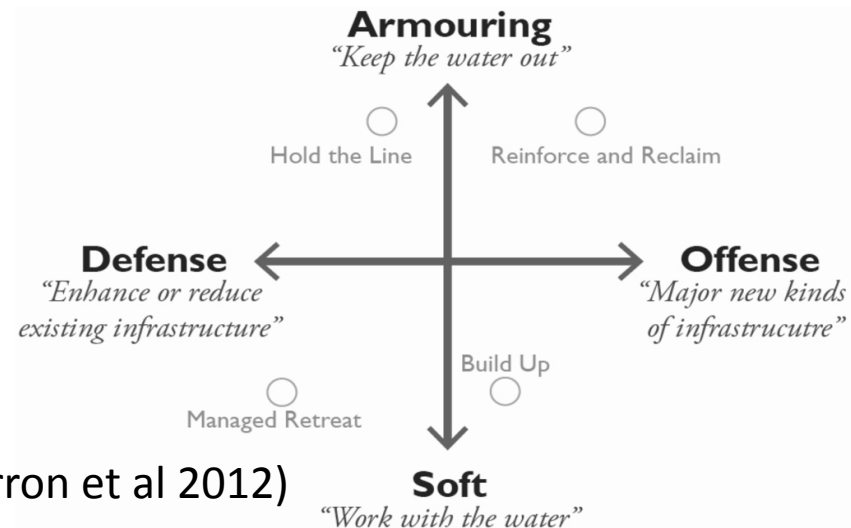
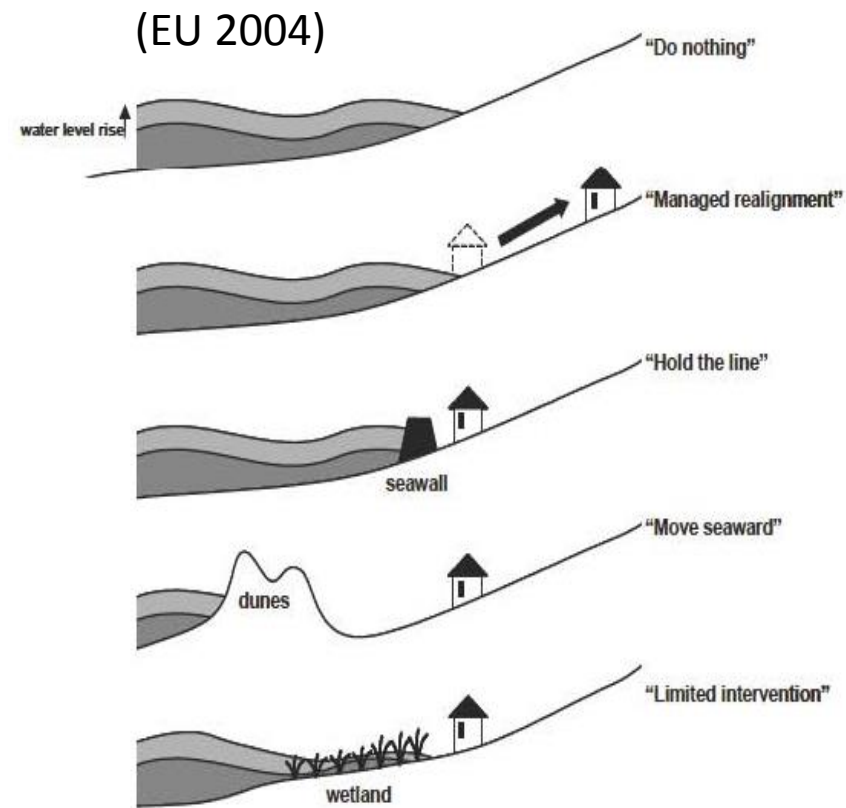


(Davidson-Arnott 2005)

IPCC trilogy & subsequent strategies

Strategies		Features	Methods
Protection (Defense)	Hard	Dikes Levees Sea Walls Groins	Build physical barriers to block water
	Soft	Mangroves Wetlands Sand dunes Tidal Flats	Create buffer with vegetation or landforms
Accommodation		Raising level Desalination Drainage Alarm system	Upgrade functions while maintaining location
Retreat		Relocation Abandonment	Relocate facilities to low-risk uplands
Attack		Land Reclamation Piers Ports Harbors	Extend facilities towards water

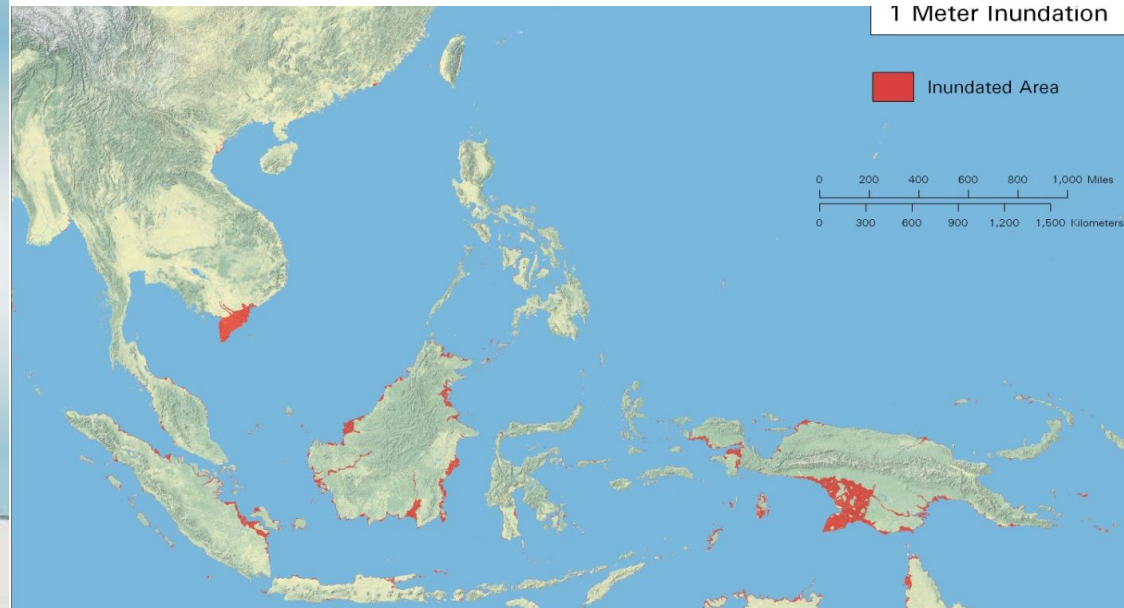
(Lee 2014)



(Barron et al 2012)

1-m SLR

(CRESIS)



EAS region

- In COBSEA New Strategic Direction (2008-2012) coastal erosion identified as **emerging environmental threat**.

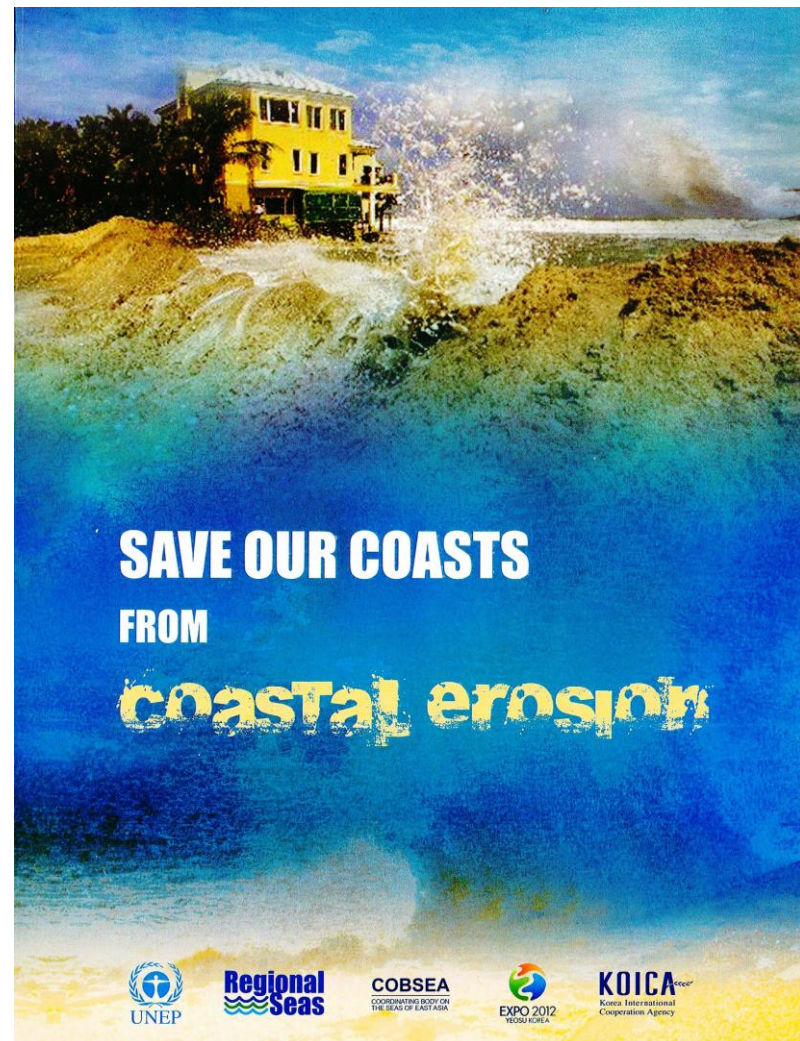


UNEP/COBSEA/MFF

- UNEP/COBSEA developed '**COBSEA Regional Programme** for the Sustainable and Ecosystem-Based Management of Coastal Erosion in the East Asian Seas Region'. Involved **Cambodia, Indonesia, Malaysia, Philippines, Thailand, Vietnam**, 2012-2013.
- Follow-up **project COBSEA/MFF** : 'Strengthening the Resilience of Coastal Communities, Ecosystems, and Economies to Sea-Level Rise and Coastal Erosion'. Involved **Thailand & Pakistan** in implementation of **pilot interventions**, 2013-2014.

Inception Workshop

- Bringing relevant national authorities & international experts from participating countries to **discuss** coastal erosion & coastal management issues in general & project & its activities & requirements in particular.
- Regional Resource Notebook 'Save Our Coasts from Coastal Erosion': general **information** on coastal erosion & country-specific information with objective of creating & enhancing public awareness on coastal erosion across EAS region.

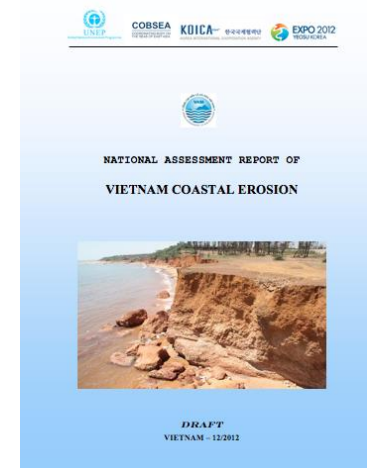
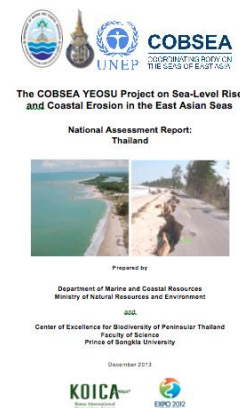
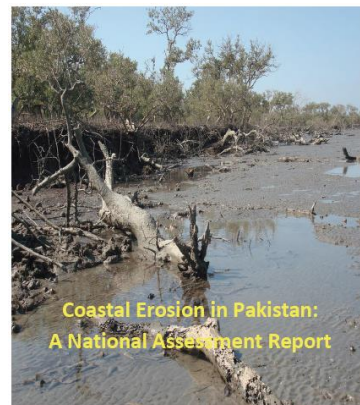
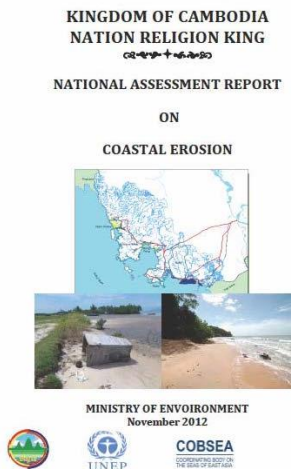


National Assessment Report (1)

- **First major strategy** : To prepare a **National Assessment Report** (NAR) for each country based on a standardized format.
- NAR provides **situation analysis** of coastal erosion in country; past, current & planned **policies & legal & institutional mechanisms**; past, current & planned **interventions** addressing coastal erosion; assessment of **gaps & needs** including actions required; & an initial menu of **recommended pilot interventions**, defining prioritized actions at national & subnational levels.

National Assessment Report (2)

- Serves as a major & **fundamental document** in coastal erosion & coastal development & management; also in development of new or updating of existing national plans, policies & programmes on integrated coastal management at national & sub-national levels.
- Standardizes format for countries to **analyse coastal vulnerability**.



NAR : Pakistan's lessons

- NAR has been **first** comprehensive attempt to document coastal erosion in Pakistan
- NAR has helped in **identifying vulnerabilities** of coastal communities to coastal erosion.
- Project has drawn **attention & interest** of stakeholders to this neglected issue.
- Experience sharing & field visits have facilitated **better understanding** of erosion control measures.

National consultation meetings (1)

- **Second major strategy** is the process of **national consultation** in each country in which NAR was assessed & discussed by various ministries, government authorities at various levels & relevant stakeholders.
- Such meetings provide an **opportunity for discussion** not only on findings & assessments but **agreement** on recommendations including pilot interventions.

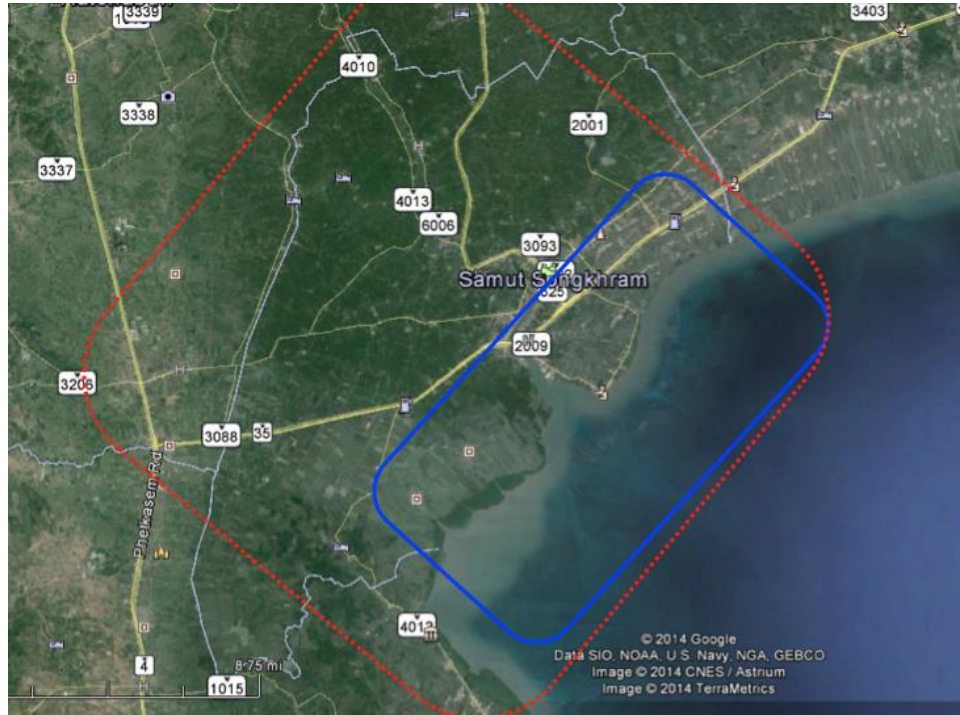


National consultation meetings (2)

- Though this consultation processes, national & local authorities **improved their understanding** of coastal & communities' vulnerability related to coastal erosion & SLR.
- Concerned authorities are **better prepared** to face impacts of coastal erosion & SLR by **developing policies & strategies** to address these impacts using & implementing the findings & recommendations.
- National dialogue & consultation process also enhanced **national coordination & cooperation** between & among concerned national authorities & stakeholders.
- One or more meetings.

Pilot interventions

- **Third major strategy** is implementation of **pilot interventions**.
- Carried out by Thailand & Pakistan. Should note that it is now up to **governments** of participating countries to implement recommended interventions by **providing funding** sourced from their national budget or seeking funding from potential donor & development partners & other regional organizations.
- Thailand : **Samut Songkhram**.



Thailand : Samut Songkhram

Pilot projects/activities

1. Prepare a Master Plan for coastal erosion prevention and mitigation for the coast of Samut Songkhram province

2. Workshop on Coastal zone management

- Coastal erosion management for local administrative organization.
- ICM planning, zoning planning (Training of the trainers, provincial and local administrative organization) including the development of course syllabus for ICM in Thailand.
- Communication/facilitation skills of local officials to conduct participatory action planning to develop measures suitable and accepted communities.

3. Workshop on Coastal erosion assessment, prevention and mitigation

- Provide knowledge of appropriate habitat restoration planning and actual implementation, monitoring and evaluation of success indicators.

4. Publication

- Communication/Produce Publication/Monitoring of project implementation



Ecosystem-based adaptation

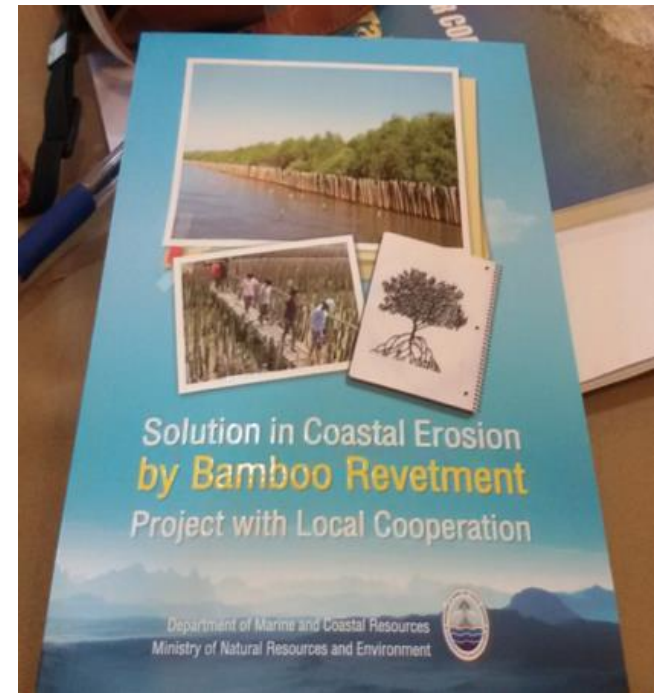
- Emphasis on **mangrove replanting**



Maeklong Declaration

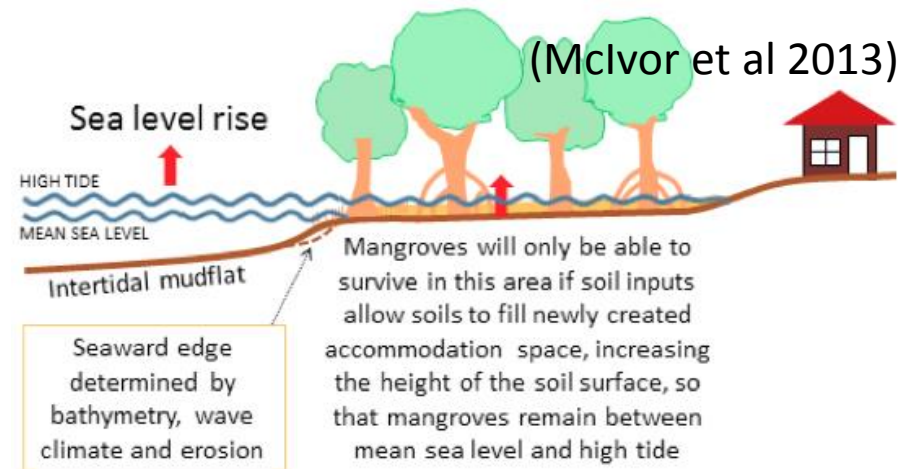
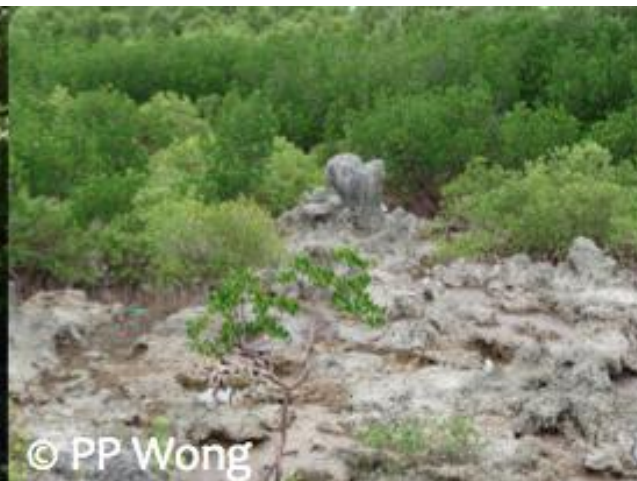
The leaders of Samutr Songkhram's coastal communities including head of villages, head of sub-districts, mayor and Local administrative Organization of Bang Kaew, Bang Jakreng, Laem Yai and Khlong Khone declared that;

- 1. Mangrove forest is a crucial ecosystem and served as coastal erosion protection for the coastal communities of Samutr Songkhram province.**
- 2. Will support the mangrove reforestation and bamboo stick for the reduction of wave energy to prevent the coastal erosion**
- 3. Do not agree with an implementation of hard structures i.e., concrete poles, sea walls or break water, since these methods will affect local life style, beauty of nature and Don Hoi Lod, which is a symbol of Maeklong estuary and be valued at the international recognition of the Ramsar site.**



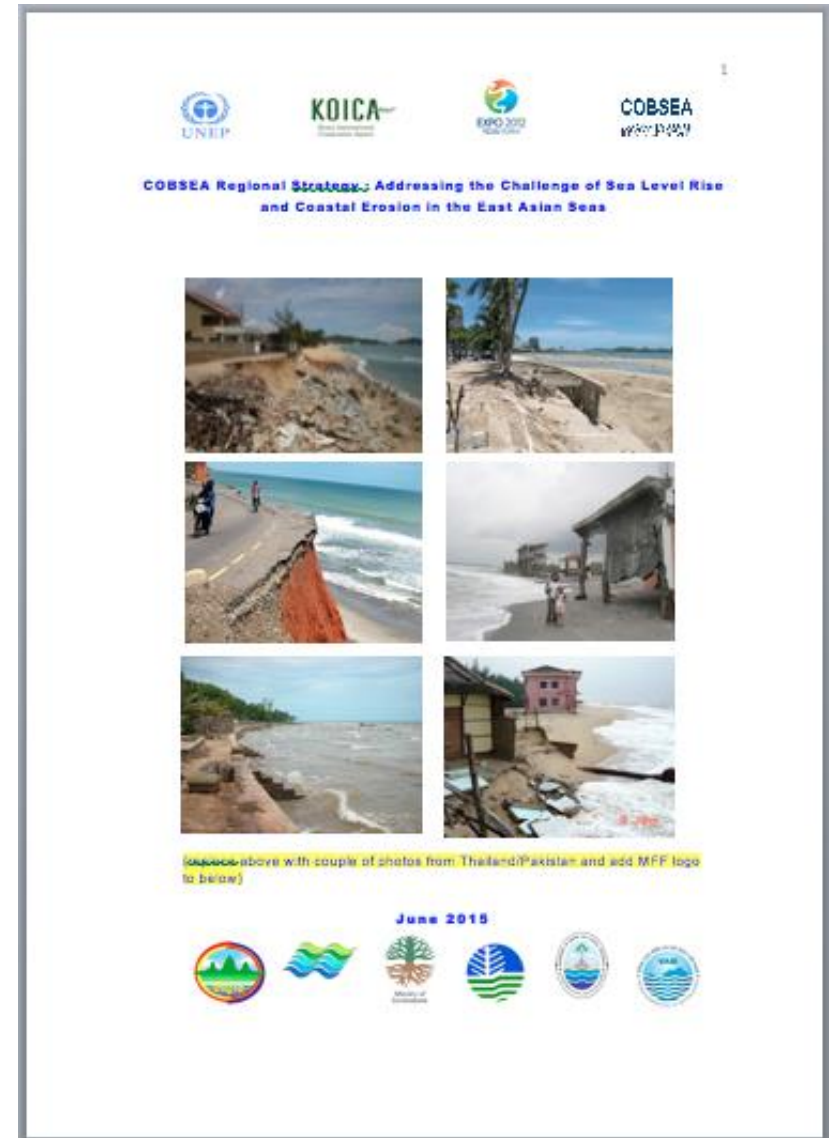
EBA = Development

- Timeline from mangrove seedlings to their maturity along coasts generates **increasing levels of development/opportunities** for villages & **at same time improves adaptation to sea-level rise.**



Regional assessment report

- **Fourth major strategy** is the production & distribution of a **regional assessment report**. Compiled & consolidated main findings of 6 national assessments for distribution to countries.
- For ecosystem-based & sustainable ICZM framework.

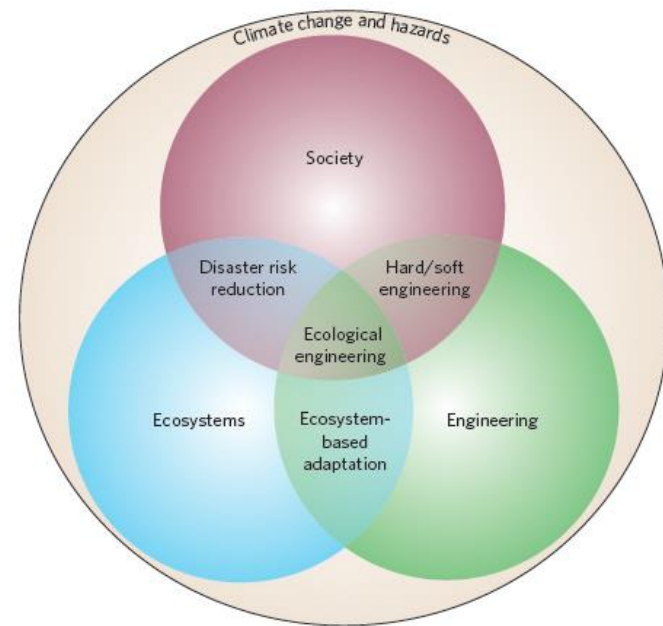


Future paths

- **Key demonstration sites.** Based on pilot interventions & other identifiable sites that address present & future coastal erosion : illustrate coastal erosion issues, measures taken, measures planned, successful measures, lessons learnt; integration of approaches & capacity building; evaluation of different strategies to sea-level rise; formation of regional forum for experience sharing & knowledge learning.
- **Regional workshops** : For training trainers to build stronger capacity for EAS region. Assuming that 150 can be trained in each of 6 workshops, 900 can be trained or ratio of 1 trainer to 175 km of coastline (based on 158,000 km of coastlines in EAS).
- Identified specific capacity building activities & pilot interventions in assessment reports could be integrated into a **regional report** which could be used in development of future programmes in coastal erosion management **for regional implementation.**

Conclusion

- Strategies discussed derived from COBSEA/MFF projects & address **regional/national concerns**.
- At local levels, more specific measures to be taken **considering local factors**.
- Consideration given to **EBA**.
- More often than not, **interests of local stakeholders** to be included in any measure to be finalized & implemented.



(Cheong et al. 2013)

Thank you

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