

# Climate Change Adaptation and Wetlands: *Lessons from the field (Green Coast)*

by  
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WETLANDS  
Sustainable Development

Nature protection provides beauty and prosperity

# What is climate change adaptation?

- UNFCCC: Practical steps to protect countries and communities from the likely disruption and damage that will results from effects of climate change
- Adaptation is a process
- Synergies with sustainable development activities
- Requires action at multiple levels

# Healthy Wetlands & climate change adaptation

**Improving management of wetlands can mitigate climate change impacts and provide environmental security**

Proper wetlands management will provide:

- Protection against floods and droughts in catchments that will face increased seasonal variability in run-off
- Maintenance water supplies – link to health
- Protection against sea level rise and saltwater intrusion
- Erosion control
- Ensuring availability of natural resources (e.g. fish stocks)
- Maintaining ecological networks and shelters for plants and animals

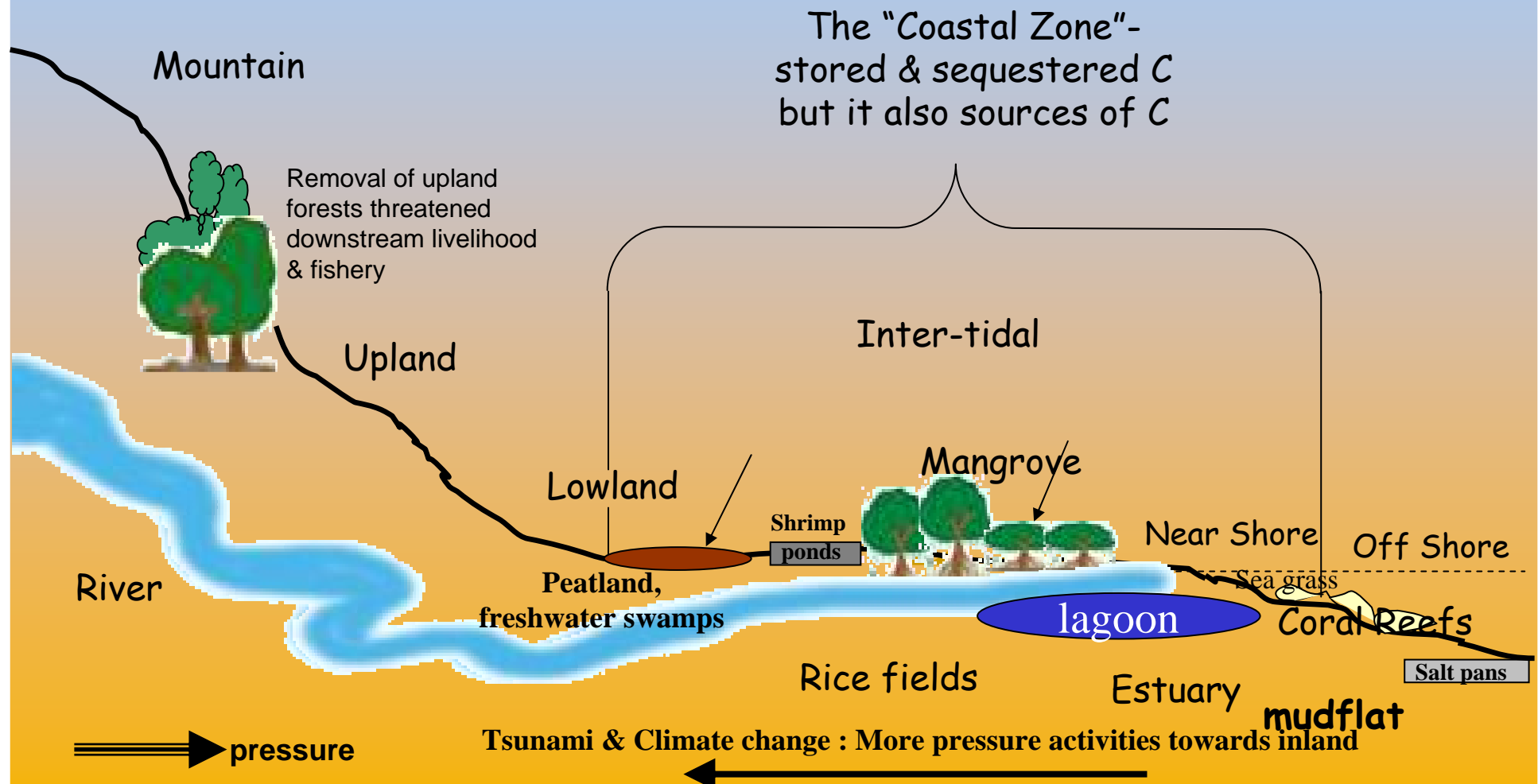


Where adaptation should be prioritized in Indonesia ?

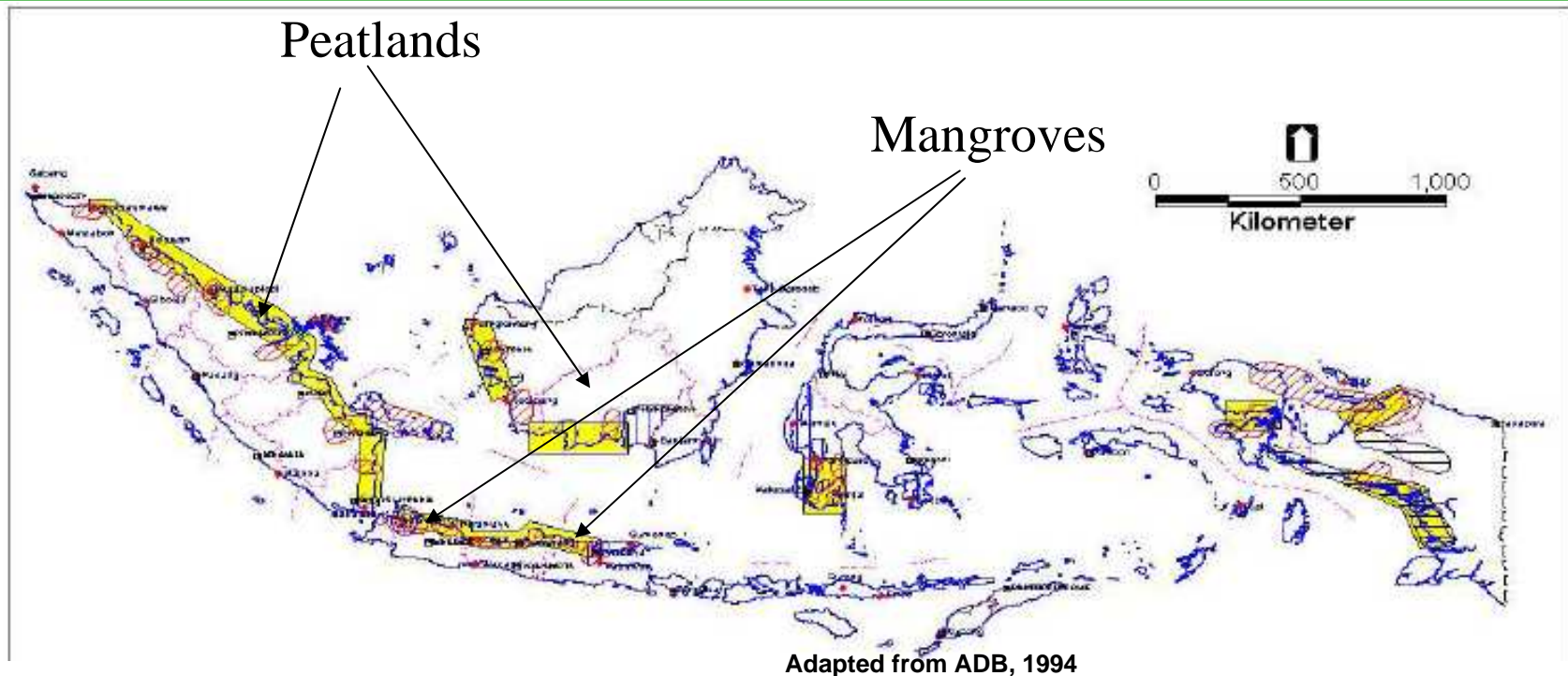
## COASTAL WETLANDS

very vulnerable to Climate change

Components: Estuaries, Coral reefs, Seagrass beds, Ponds, fresh/brackishwater/peat swamps, beach forests, Mangroves, Lagoons, Bays



# Vulnerable areas in need of adaptation related to sea level rise



## Sectors Impacted by SLR:

- Coastal ecosystem types and areas
- C sequestration capability and C stocks
- Public Infrastructures & Settlements
- Livelihoods (aquaculture ponds, paddy fields, fish capture etc)
- Tourism
- Green belt & other coastal protected areas
- More pressure towards upland area

# Man-made & natural destruction on coastal wetlands enhance vulnerability to climate change



**Coastal abrasion, central java**



**Tsunami impact in Banda Aceh**

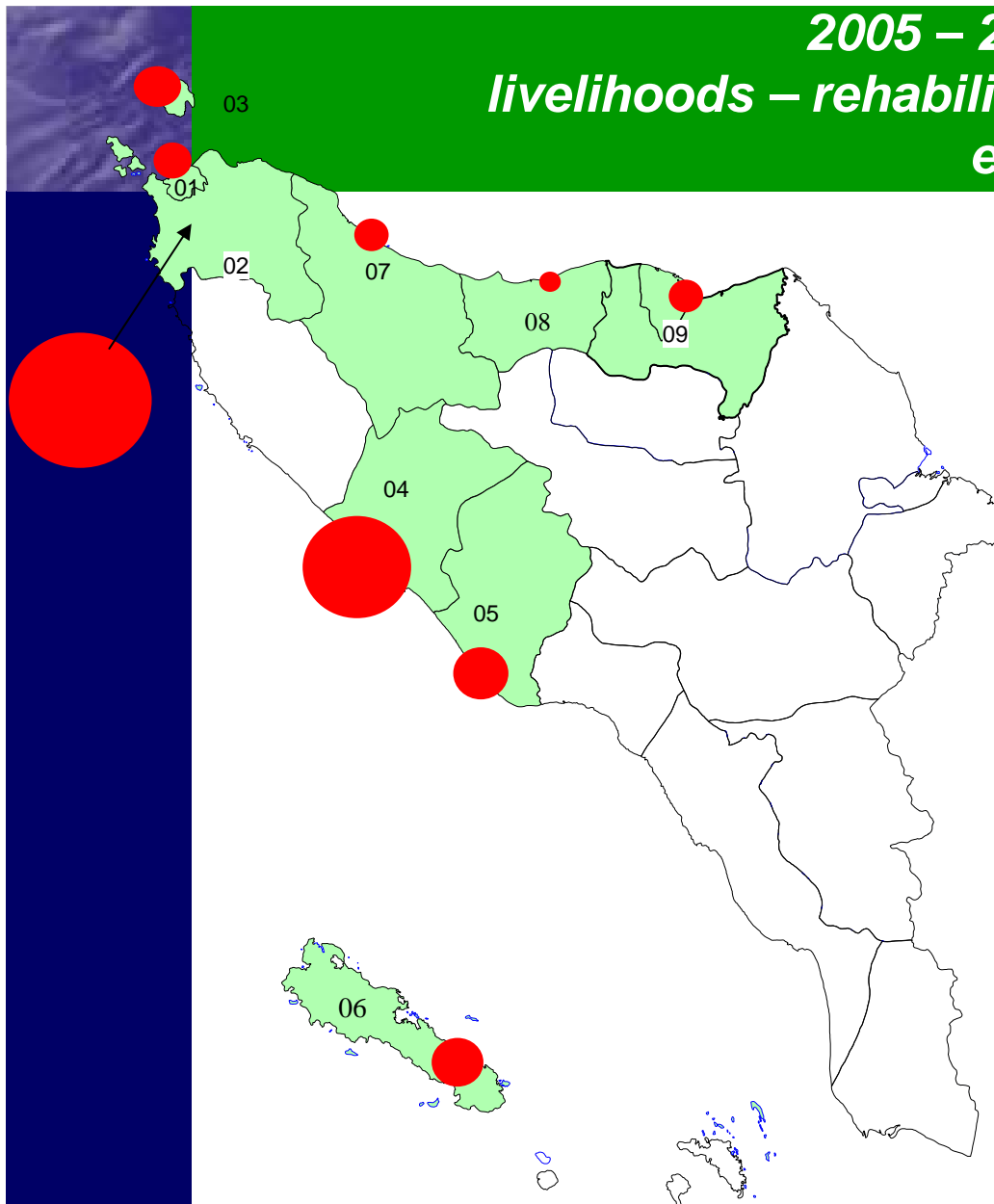


**Coastal abrasion in Candi Dasa**



**Mangrove clearing for fish ponds**

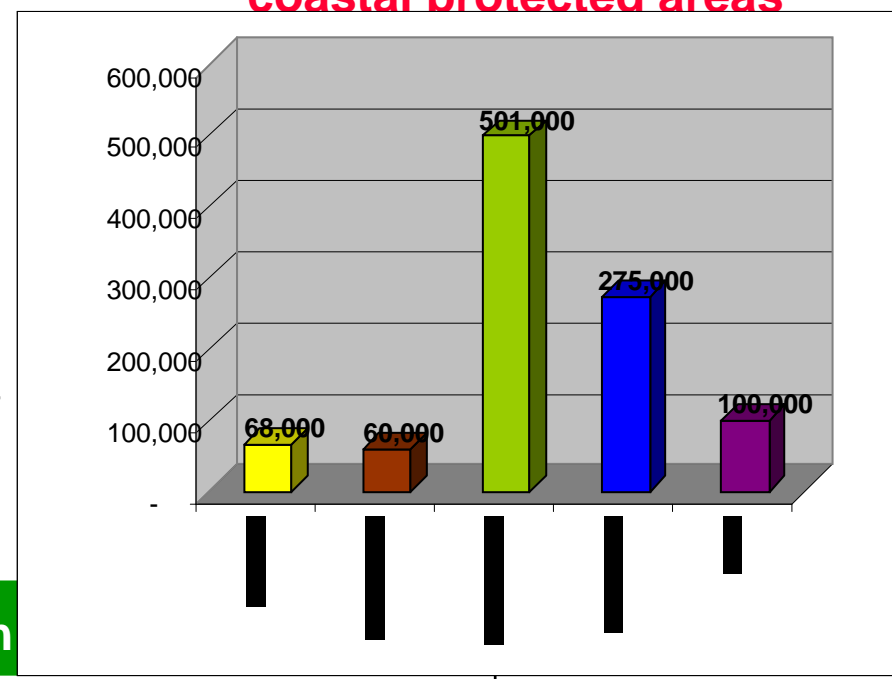
## 2005 – 2008: Green Coast livelihoods – rehabilitation - management of coastal ecosystems



1. Environmental assessment
2. Small grants (Bio Right):  
Livelihood–Rehabilitation (2 mill seedlings)
3. Policy

### Approaches:

**green belt – silvofishery – new  
coastal protected areas**



**Small Grants Distribution in Aceh**

# EMPOWER THE GREEN BELT



- DirGen Fishery 1975: 400 m from
- 1984 Joint decree (MoF & MoA): mangrove logging in Java and a conserved.
- 1990 Presidential Decree No 32/

# Krueng Tunong estuarine area at Aceh Jaya before and after the tsunami



What should be the width of the greenbelt ??

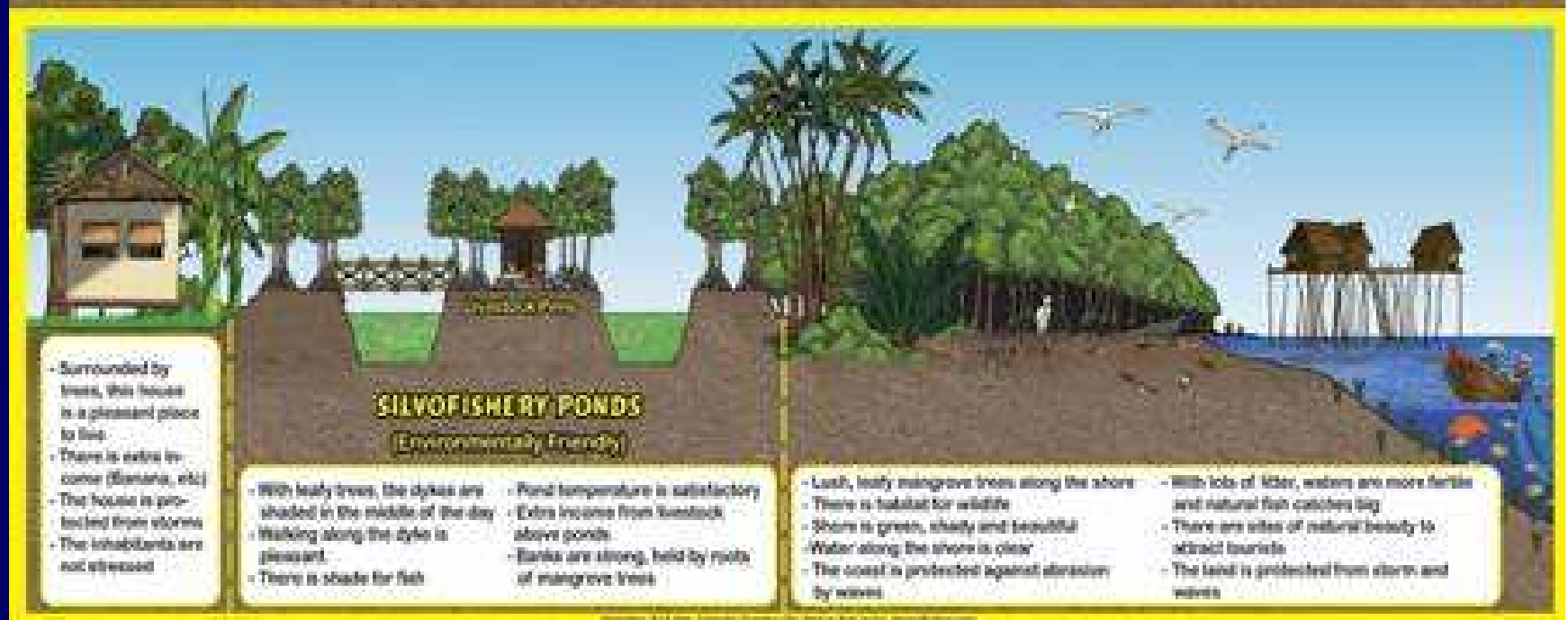


# Rehabilitation Demo site in Kajhu-Aceh

## 26 species planted



# CREATE ENVIRONMENTALLY FRIENDLY PONDS



## Results in Lham Ujong-Aceh Livelihood + Rehabilitation (BIO-RIGHTS)



November 2005



17 months after, April 2007



Income diversification

# Silvo-fishery pond- cikeong, West Java



## 1998: Silvo-fishery pond- Pemalang, Java



# Establish more protected coastal wetlands



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1. Crab cage farm



2. Jetty



3. Fish pond



4. Sand quarry

# Pulot Lagoon restoration: Improving protection and increasing income diversity



# Capacity building and awareness raising

## Panduan Praktis Rehabilitasi Pantai

"Seluruh Pengalaman  
Merehabilitasi Kawasan Pesisir"

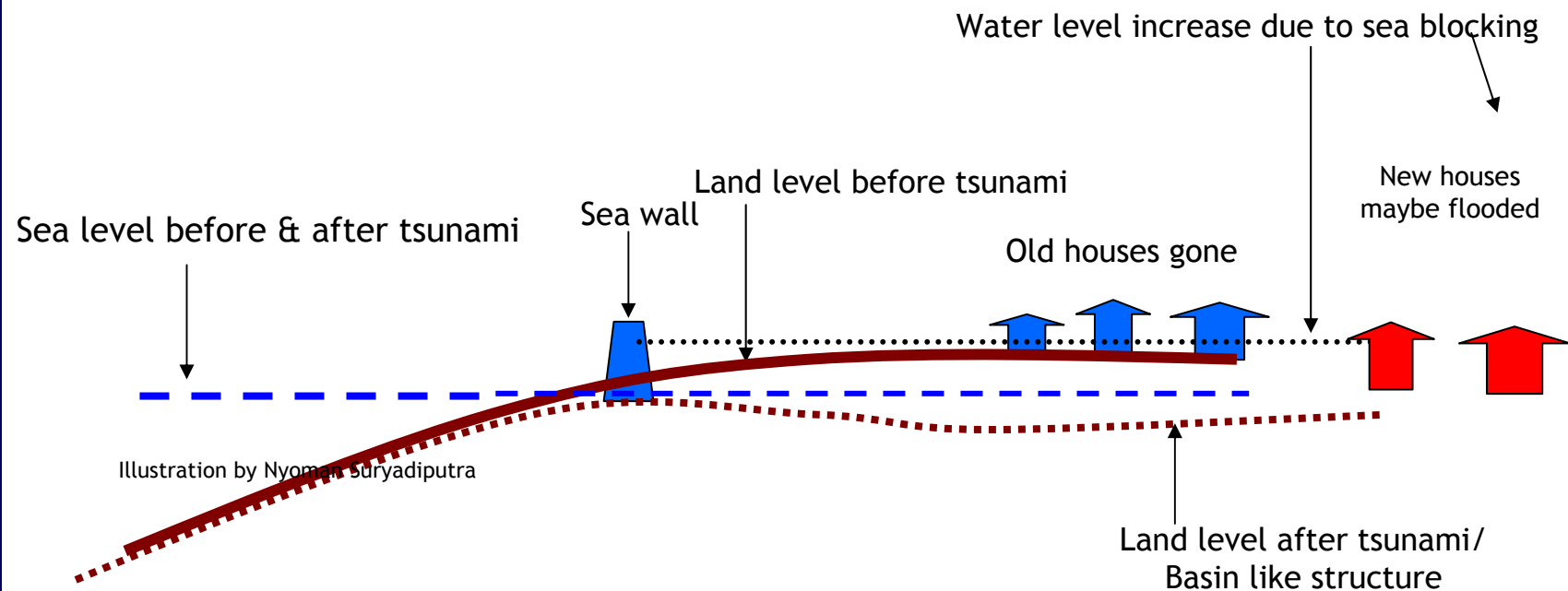


WETLANDS  
INTERNATIONAL

INTERNATIONAL  
Coastal Program



# Prevent negative impacts of hard engineering



# WI Plans for the future

- Integrating wetlands in climate change adaptation



- Demo mangrove restoration projects under CDM in Aceh
- Demo private sector VER initiatives – Pulau Dua
- Prevent negative impacts of engineering adaptation measures
- Promote community-based solutions
- Build capacity & awareness on critical functions of wetlands
- Perform detailed research on wetland-climate interactions



ACEH TIMUR (after tsunami)

**THANK YOU**  
**TERIMA KASIH**

**SUWUNG BALI**

• mangrove protects:  
pond constructions  
Land abrasion & storm  
Mitigate tsunami energy  
mitigate climate change



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