

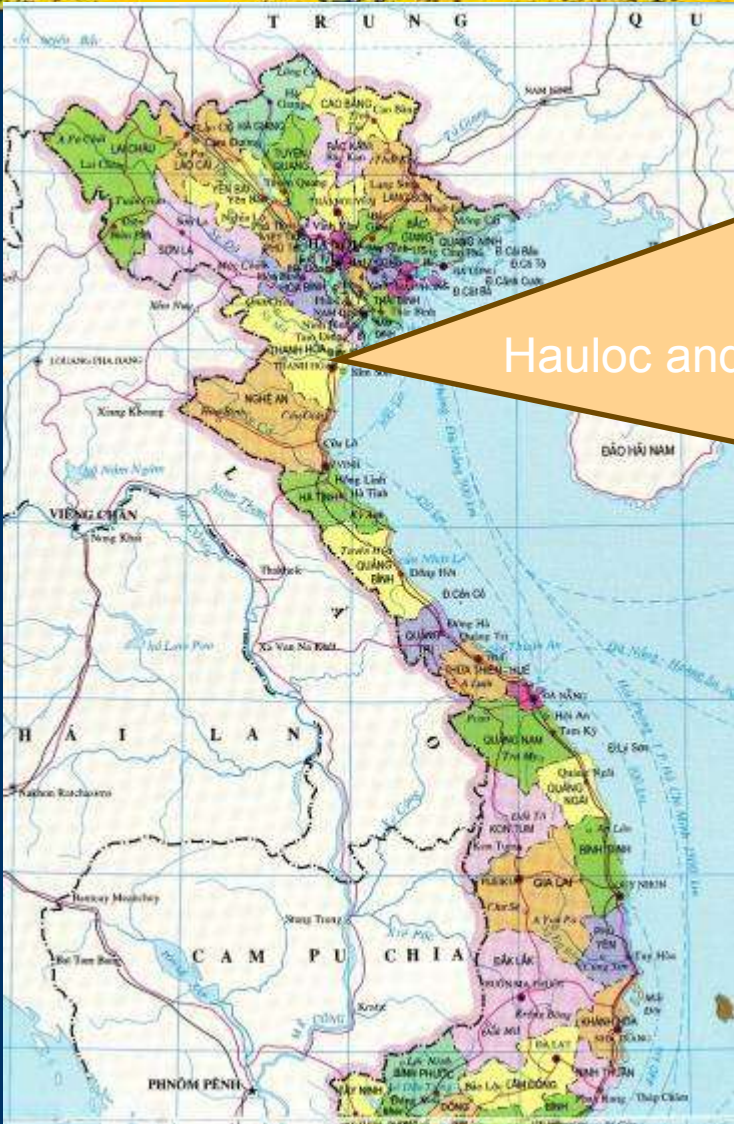
# Mangrove and Coastal Community Resilience

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# Map of Hau Loc and Nga Son District



Hauloc and Nga Son



# Back ground information

## Hazards and climate change

- Storms
- Typhoons and sanitation
- Changed rainfall pattern and drought

Main livelihood: Agriculture

**Project objectives: Increase the resilience of coastal communities in Thanh Hoa province through strengthening Community Based Disaster Risk Management s and climate change adaptation**

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## Integrated approach – Mangrove as core

- Integrated approach to disaster risk reduction, climate change Adaptation and the role of mangrove
- Awareness raising, education and communication on disasters and climate change integrated into activities of the Green Clubs and local community
- Village and commune DRR and adaptation planning
- Integrate DRR,CC into local development plan
- Research on CC and resilient livelihoods: bio fertilizer, chili, worm raising, bio garden models

# Implementation Strategies – participation, ownership and use of traditional knowledge

- Stakeholder involvement
- Participatory planning (inc land use) and design
- Using traditional knowledge on planting & protection, resource management: planting time, seeds/seedlings, how to protect young trees
- Maximize local food and seeds in sustainable livelihoods
- Large mobilization of local people in project activities, 80% women
- Community based management mechanism
- Community to work out the rules and regulations



# Results

- 85% of the vulnerable households have improved their awareness of CC & DRR and their behavior
- local government have strengthened skills in community-based mangrove forest management and community-based disaster risk management planning
- 412 ha of mangrove well planted and maintained
- The Code of conduct for community-based mangrove management system established, rules and regulations put into force
- 1,868 households benefited from resilient livelihood models
- Active participation of village people, women in particular, has lead to strong ownership and sustainability.

# Long term benefits of mangrove

- Protects coast line of 12 km (population approx.50,000)
- Mitigates impact of storms, typhoons and sea level rise
- Improves sustainable source of livelihoods for local communities:
  - mangrove dependent resources: crabs, oysters, shrimp/fish breeding grounds, fuelwood etc
  - protection of adjacent livelihood systems – clams, shrimps ponds, fishing etc
- 1,000 households benefit aqua products from mangrove.

# Contribution to development

- Reduce disaster risks at relatively low cost (approx. \$1 per mangrove: saves \$186 cost of storm damage)
- Model success influences similar government and NGO projects to adopt community-based or co-management approach
- Important contributions to disaster risk reduction and climate change adaptation and high storage of carbon



# Some pictures about project activities

## 412 ha of Mangroves planted



**Agreements with local authorities: Meeting with DARD, DPC on Mangroves Management and Protection and Land Use rights. Group Discussions on setting up CBMMS. Agreement to allocate to villages.**



# Commune /Village participatory Land Use Planning



- Workshops on PLUP: 120 participants including District authorities
- Inventory of mangroves and mangrove resources
- Agreed rules and regulations

# Commune Participatory Land Use Planning



- Two Workshops on PLUP: 120 participants including District authorities
- Inventory of mangroves and mangrove resources
- Agreed rules and regulations

# Selecting seeds and planting by seeds



# Mangroves Nursery garden

- Stocked seedlings of Candelia



# Transportation and planting seedlings out to the sea



# Community maintenance of Mangroves



Maintaining for young trees planted





# Training of Trainer on DRR and CC in 2011



# Making Disaster and CC Resilient plans at village level in 2012



# Environment, Mangroves, DRR, CC Education

## Contests

Art, song, drama contests for children and young people  
green team with over 15,000 audiences



# Contest on DRR, CC, and Environment and Mangroves protection

A Green Club's members attending contest "We are green Messengers"



# Communities exploit sea food and raise ducks in mangrove forests



# Bio Fertilizer models making by Green clubs members



**Training and making bio fertilizer at the field**

# Green Team and Youth Union Members Maintaining Mangroves cleaning the beach

10 Green Clubs with 164 Members established in 10 Villages

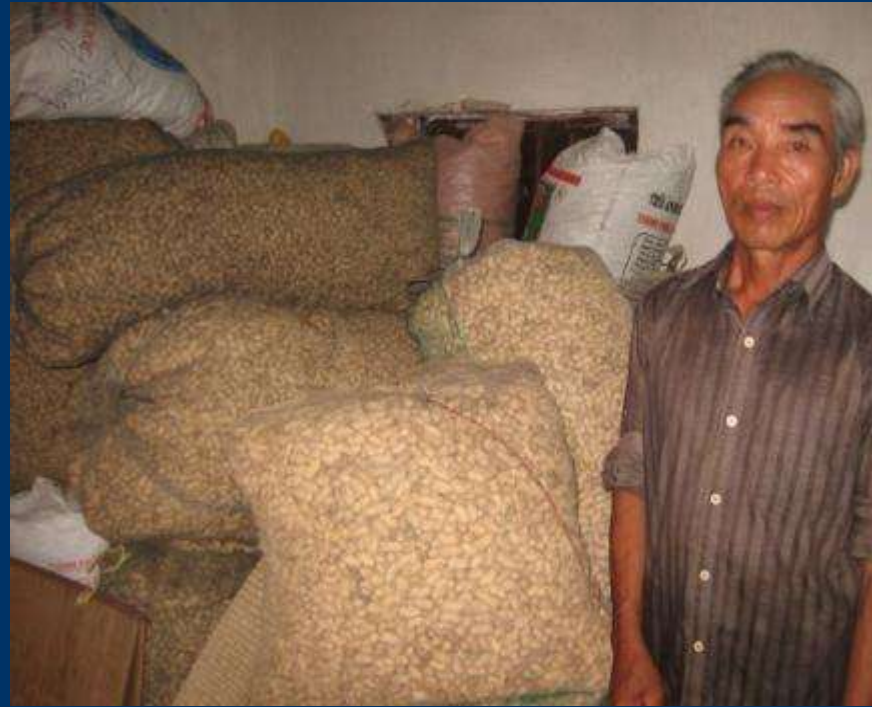


# Worms raising for husbandry





# Bio-fertilizer: sustainable and adaptive to climate change development



# Thank you

