Enhancing adaptive capacity in the Kien Giang Biosphere Reserve

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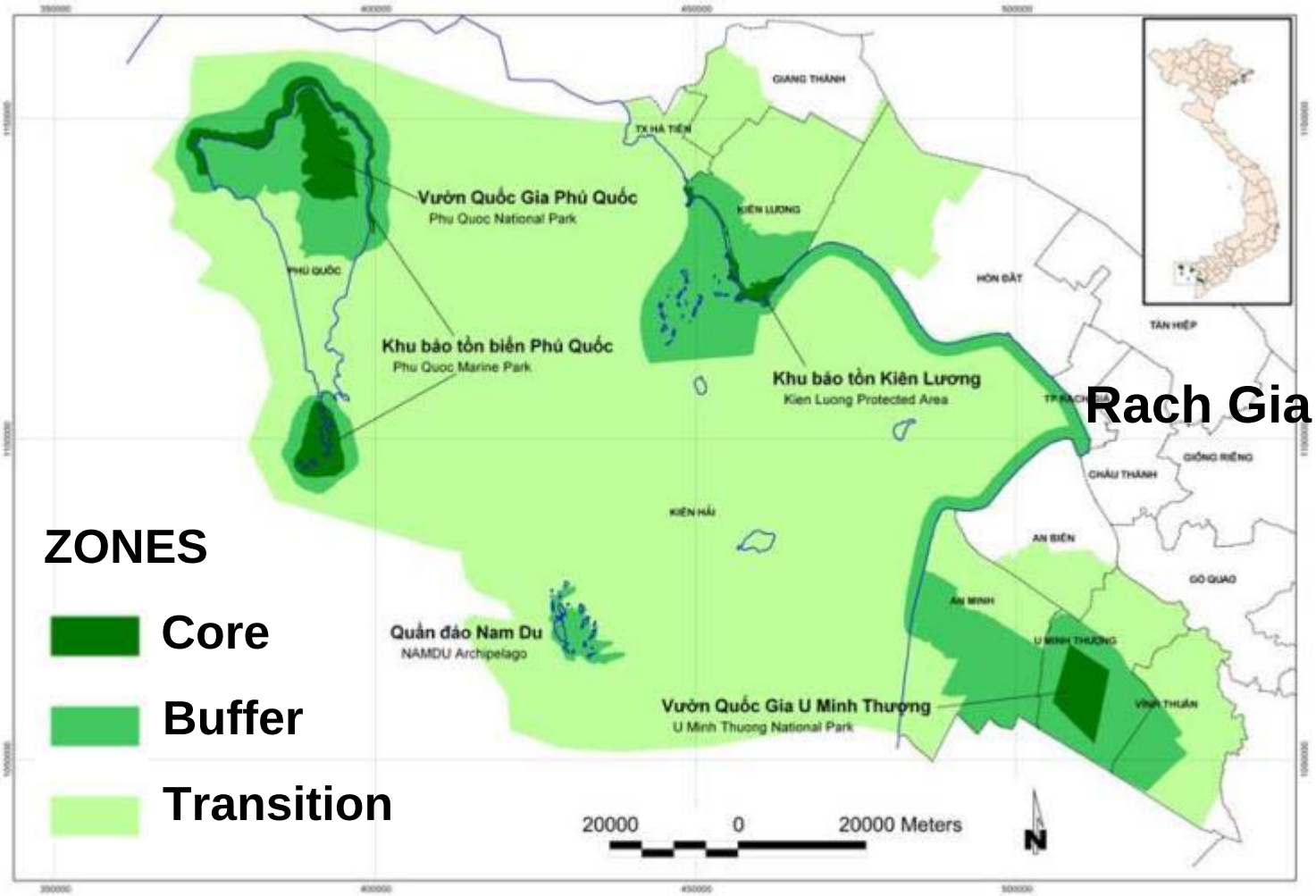
Kien Giang Biosphere Reserve



Key Areas

The U Minh Thuong National Park

- one of last significant areas peat swamp forest.

Phu Quoc National Park

- one of last remaining Dipterocarp forests
- melaleuca and mangrove forests

Hon Dat & Kien Ha Special Use & Protection Forest

- limestone forest and karst areas

Coast Line And Adjacent Marine Areas

- mangrove forests
- important sea grass beds and coral reefs.

Project Objectives

Sustainable development of the natural resources of Kien Giang Province and the improved management of the protected areas and coastal forests.

Potential Climate Change Effects

- Decrease in dry season rains
- Increased wet season rains
- Sea Level Rise
- Saline intrusion
- Increased temperatures
- Increase in timing and severity of storm and flood events

Project Response to CC

- Integrates Government, Province and Project support.

- Participatory approach through interaction with KG Departments, District leaders, Provincial Peoples Committee, Civil Society Groups eg Womens Union, Youth Union, Farmers Union.

- Identifies and addresses the problems resulting from climate change.

- Explores new methods to enhance adaptive capacity in KGBR.

MANGROVES ARE A 'GREEN BARRIER' AGAINST CLIMATE CHANGE

74% coast (134km) has Mangroves

60% are still intact

18% are expanding

Mangroves lost from 23% coast

50% of exposed dykes severely degraded or breached

Understanding The Threats To Mangrove Ecosystems

27 spp found in KG

Baseline plot surveys and field observations

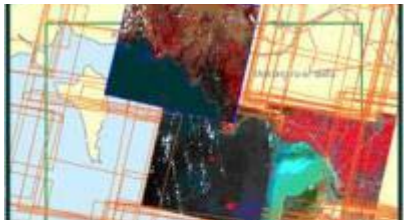
- Biodiversity
- Biomass and Carbon Estimation

Video Assessment of Shoreline Condition

Satellite and Aerial Photography Analysis

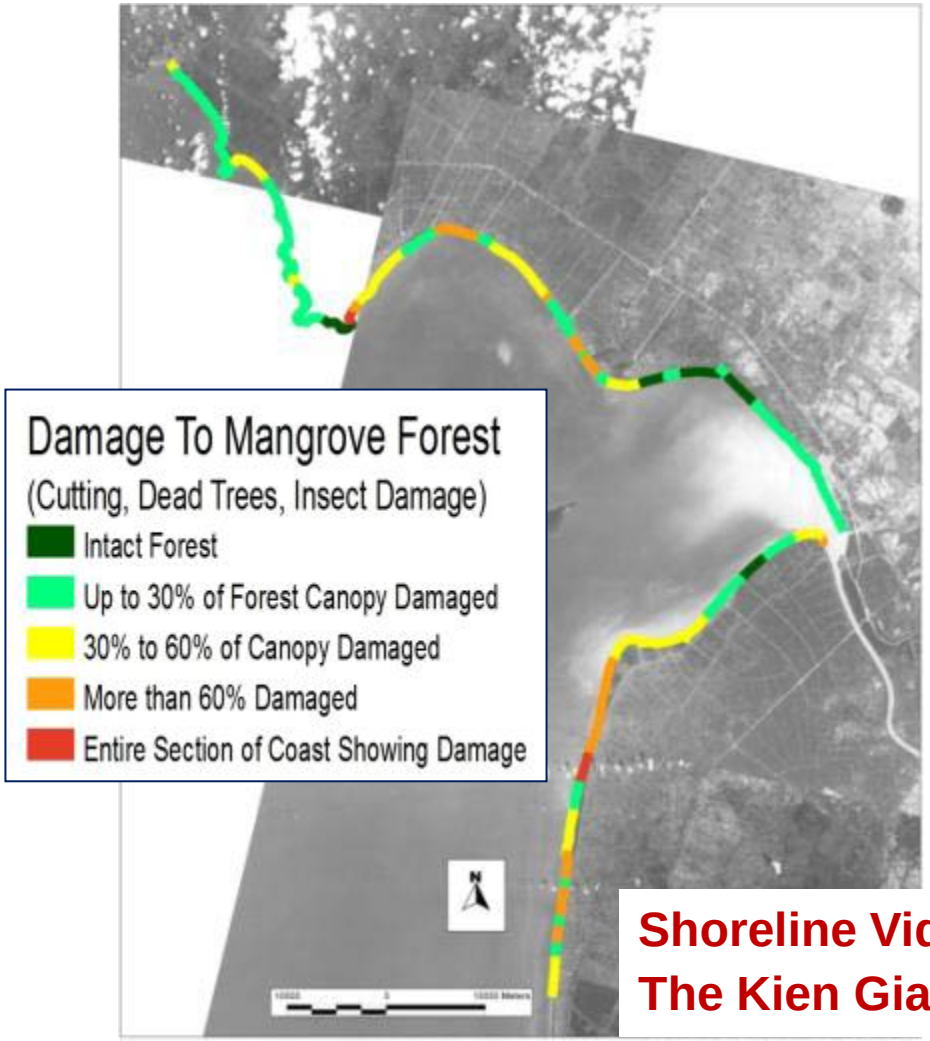
- Mapping Present Vegetation Communities
- Documenting Shoreline Change over Time
- Spatial Carbon mapping

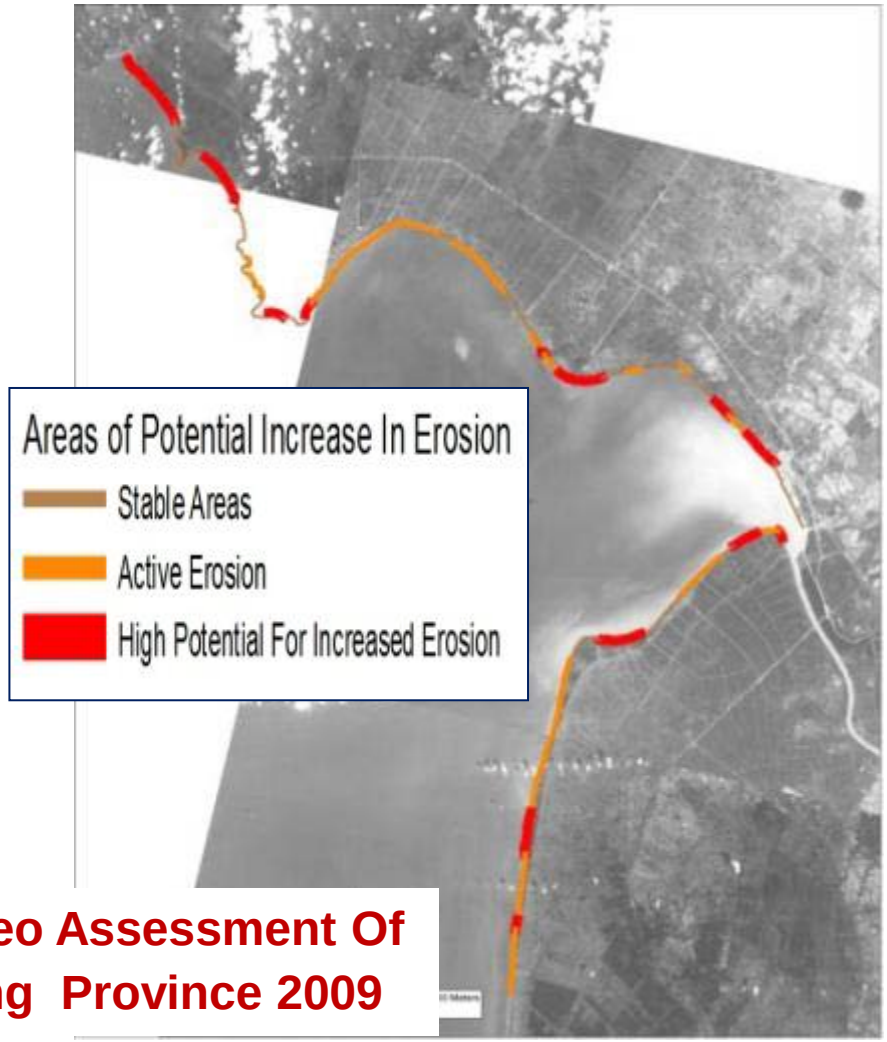
78% mangrove forest high biomass



26 m of mangroves & coastline lost annually

Targeting Mitigation And Rehabilitation Strategies





Shoreline Video Assessment Of The Kien Giang Province 2009

Buying time through mangrove rehabilitation

Monitoring and Evaluation

	Treatment 5. Control DARD Fence	Treatment 1 Wave break fence	Treatment 2 Wave break + silt trap fence	Treatment 3 Mangrove + 1 side fences	Treatment 4 Mangrove + 2 side fences
Annual silt gain (cm)	**0**	**0**	**4**	**10**	**9**
Survival planted mangroves (%)	**None**	**30%**	**90%**	**100%**	**100%**
Recruitment	**None**	**After 2 years low number. Now (3yr) 1 - 5 seedlings m^2**	**After 1 yr medium number. Now 20 – 500 m^2.**	**Immediate- medium numbers. Now outgrowing planted seedlings**	**Immediate – large numbers. Now outcompeting planted seedlings**
Benthos – SR (Can Tho Uni)	**4**	**3**	**7**	**5**	**5**
Benthos – abundance (Molluscs & Crustacea) (Can Tho Uni)	**6**	**51**	**57**	**86**	**45**

Follow up activities: The project plans to set up a larger Demonstration with the An Minh – An Bien forest protection management board

New proposed Install

- ✓ 500m + 200m single fence TYPE 2 at Thu Nam
- ✓ 2500m Wave break fence at Xeo Ban – Thu Tam (An Minh)
- ✓ 2500m TYPE 1,Thu Tam (An Minh)
- ✓ 200m TYPE 2 at Xeo Ban – Thu Tam (An Minh)
- ✓ mud measures at inside the fences

✓simple nursery to produce a range of mangrove species for new and enrichment plantings

Livelihoods, Forest Protection And Adaptation To Climate Change

- The project is introducing new livelihood methods and techniques through demonstrations, training and provision of seed funding.

- Successful models are then further demonstrated to a wider range of people.

- local people will be better able to adapt to climate change and incorporate the sustainable use of natural resources into their land management.

Livelihood Projects Framework

- Target groups include people who use the natural resources of the coastal forests, wetlands and key areas of the biosphere reserve, as well as land users in the province.
- Intermediaries are local authorities, women's union and youth union, and the staff and management board of the biosphere reserve and its key areas.
- Training and support are the key factors.

Integrated Vegetable And Rice Production Model For Poor And Ethnic Women In Vinh Thuan

- Women received seeds, materials & technical training on integrated farm & pest management.
- Funding provided through the women's union.
- Increase of 80% of average annual income.
- Establishment of supervisory trade board reduced delivery costs and need for middle men.
- use land normally abandoned (because of fresh water shortage) for alternative crops (vegetable, melon...)

Sac Ran Fish Farming In The Buffer Zone Of U Minh Thuong National Park

- 25 households given technical training and materials.
- Local extension officers & staff from U Minh Thuong NP staff also trained & can train others.
- Alternative income (150% increase) resulting in maintenance of melaleuca forest.
- Reduced pressure on Park natural resources.
- Conservation and sustainable development of threaten species

Blood Shell Culture In Mangrove Protection Forests In An Minh District

- 34 households provided with material and technical training on blood shell production and mangrove forest management.
- Partnership with the Kiên Giang Union of Friendship Organizations (KUFO) and the Agriculture and Fisheries Extension Committee.
- Annual income increased by an average of 60%.
- Improved forest protection.

Adaptive capacity is strengthened through training

- Workshops, training programs and study tours (domestic and international).
- Establishment of a training centre demonstration farm and demonstration sites.
- Teacher workshops linked to key issues of Climate Change and its impact, Waste Disposal and Conservation of Biodiversity in the Biosphere.

Building Relationships

- Building relationships with community leaders, provincial stakeholders including government officials and local stakeholders (e.g. Women's Union, Youth Union) has helped create awareness of the challenges posed by climate change.

- These **relationships play a pivotal role in disseminating and reinforcing the messages** of the project to a much wider audience.

Raising awareness of climate change

- More than 16 fact sheets, 7 case studies, reports, posters and a book describing results and insights produced .

- Special events to help raise environmental awareness in the community

- Resource book for Primary Schools on environmental issues including climate change approved for implementation into the curriculum by the Department of Education and Training (DoET).

- Annual drawing competitions with selected drawings made into a calendar

Increased community awareness

- Awareness of Climate Change and the potential impacts within the Province has increased from a low base of 3% to 77%.
- Issues of climate change, biodiversity management, coastal protection and waste management have reached a wide audience.
- Men were more likely to be aware of the issues.
- TV and radio programmes and signs are important tools to increase awareness
- There is increased local capacity to adapt to climate change.

Future Plans

- Expand Phase 1 achievements to other Mekong Provinces.
- Climate Change adaptation methods incorporated in Provincial Annual Plans.
- Protection Forests especially coastal mangrove forests restored.
- National Policy framework for Coastal Ecosystem Management.

Thank You for your attention