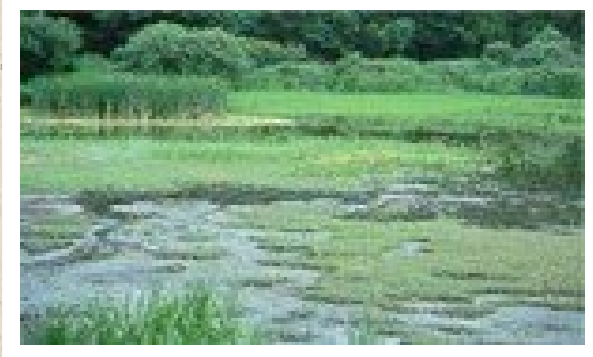




The Regional Training Workshop
Economic Valuation of the Goods and Services of Coastal Habitats
March 24 – 28, 2008
Samut Songkram Province, Thailand



MAGROVE STATUS AND MANAGEMENT IN VIETNAM



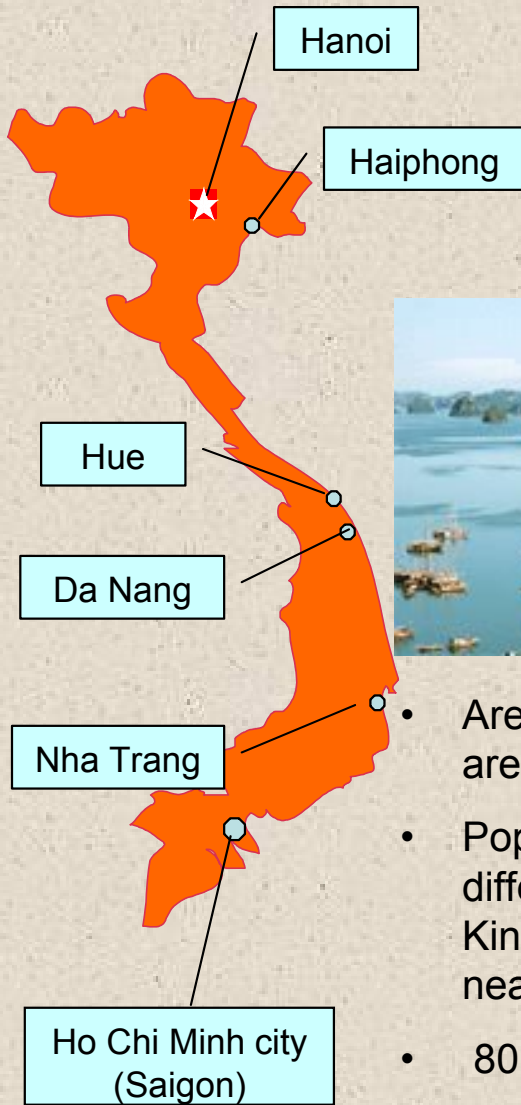
Content

1. Overview about Vietnam
2. Mangrove in Vietnam: status and values
3. Mangrove management in Vietnam
4. Demo site: Xuan Thuy National Park

PART 1

VIETNAM AT A GLANCE

VIETNAM - at glance



Flag-pole in Hanoi ancient castle

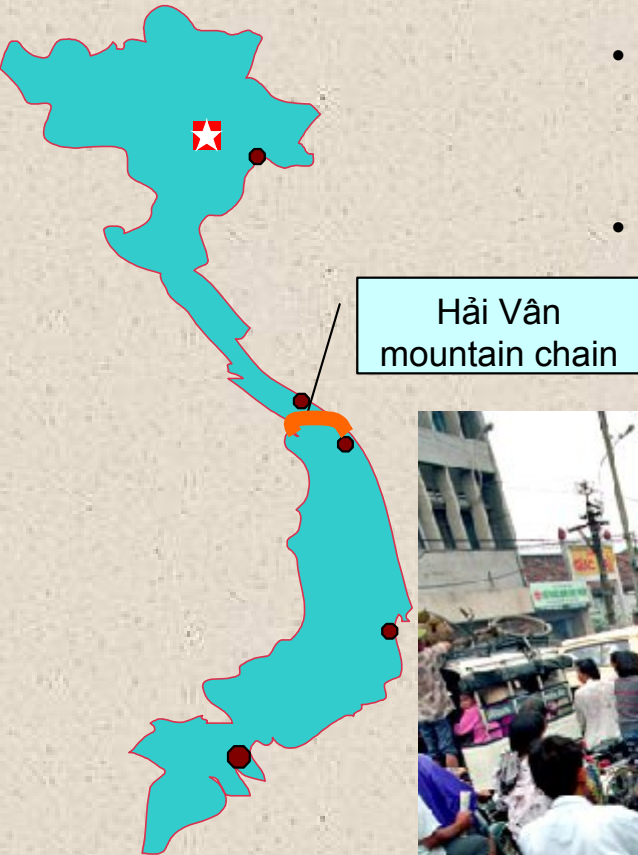
- Area: ~ 350.000 km², mountainous area occupies 3/4.
- Population: ~ 83 millions with 54 different ethnic minority groups. The Kinh people (or Viet) account for nearly 90%.
- 80% of people live in rural area
- Capital city: Hà Nội (North)
- Hồ Chí Minh city/Saigon (in the the South) is the biggest city



VIETNAM - Climate

The climate in Vietnam is divided into two distinguished area:

- In the Southern provinces: maybe as same as Bangkok
- In the Northern provinces: distinct seasons, hot and rainy in summer (30°C to 35°C), cold and dry in winter (10°C to 18°C). In the highest mountain area (Sapa) there may be snow fall in winter
- Reason for the difference is Hải Vân mountain chain, it protects the Southern area from the cold wind



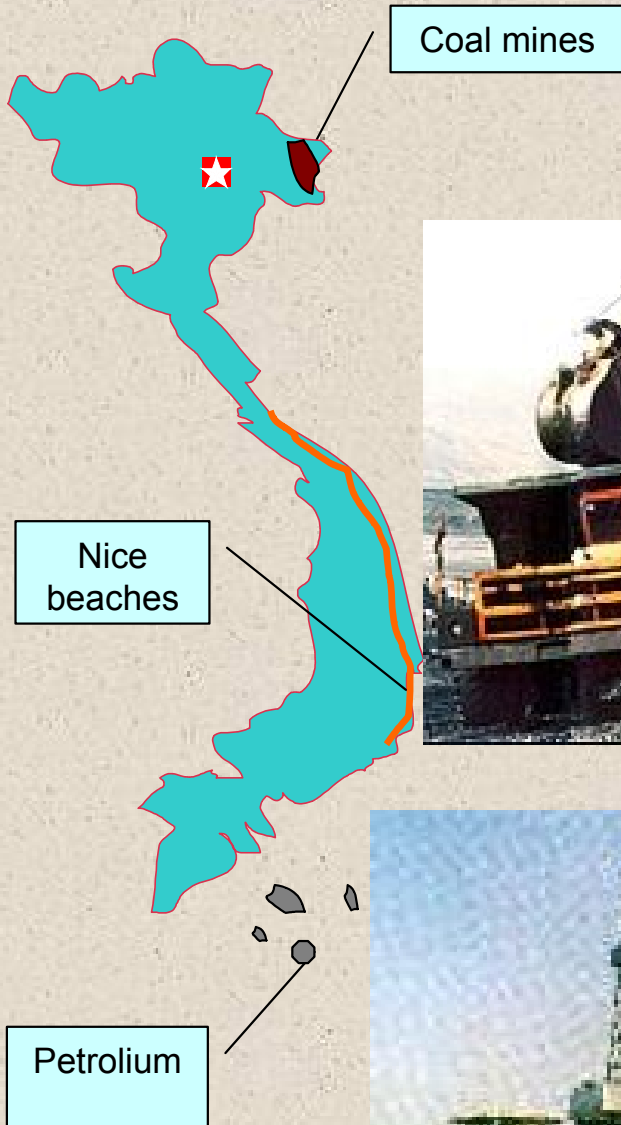
Hanoi: flooded road after heavy rain in summer



Sea dyke after the typhoon attack

VIETNAM - our nature resources

- Coal in the North
- Petroleum in the South
- Beautiful beaches along the central coast



VIETNAM - our products

- Rice, tea, café, chilli, sea foods, canned fishes
- Crude oil, coal, natural rubber
- Textile products, shoes



However, GDP/capital is still very low (~720 US\$/capital - 2006)

VIETNAM - our architectural style

Our architectural style is mixed between Chinese and French style



Antique Royal palace in Huế & semi-detached houses in old square



Opera House in Hanoi and city municipal administration buildings in Saigon



VIETNAM - our costume



Traditional costume of Vietnamese (Kinh)



Traditional costume of Dao (one ethnic group in the north) 9



Vietnamese woman long dress “Áo dài” - Unique in Vietnam

VIETNAM - culture & art



Singing in the boat in Huế city



Quan Ho folk-songs in the North



VIETNAM - "Tết" - Lunar new year festival

The most important holiday in Vietnam is Tết holiday (Lunar new year festival)



The old man is writing "Parallel sentences" - a slogan for New Year



Traditional foods in Tết



Flower on the street market

VIETNAM - our foods

Thank to the tropical climate in the South and cold winter in the North, many of vegetables and fruits can be found in Vietnam.



Vietnamese salami
Fried spring rolls



"Phở" restaurant

Daily main food of Vietnamese is steamed rice (Cơm)



VIETNAM - religion & believe

Most of Vietnamese people believe in the Buddha (Theravada Buddhist), difference with Thai (Mahayana Buddhist). Some are Christian, Catholic or Protestant



Place of worship for natio

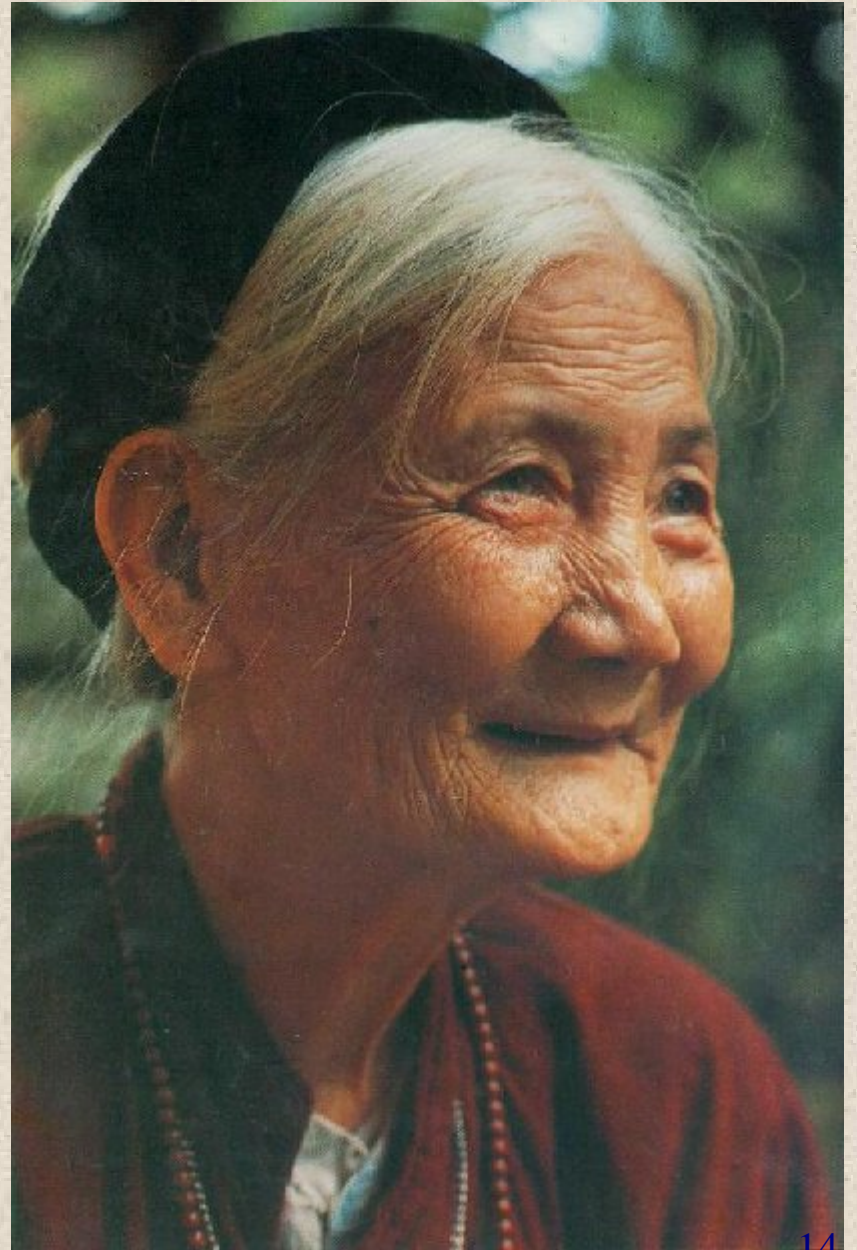
Young
Santa on
motorbike



Cao Đài is an unique religion (only in Vietnam)

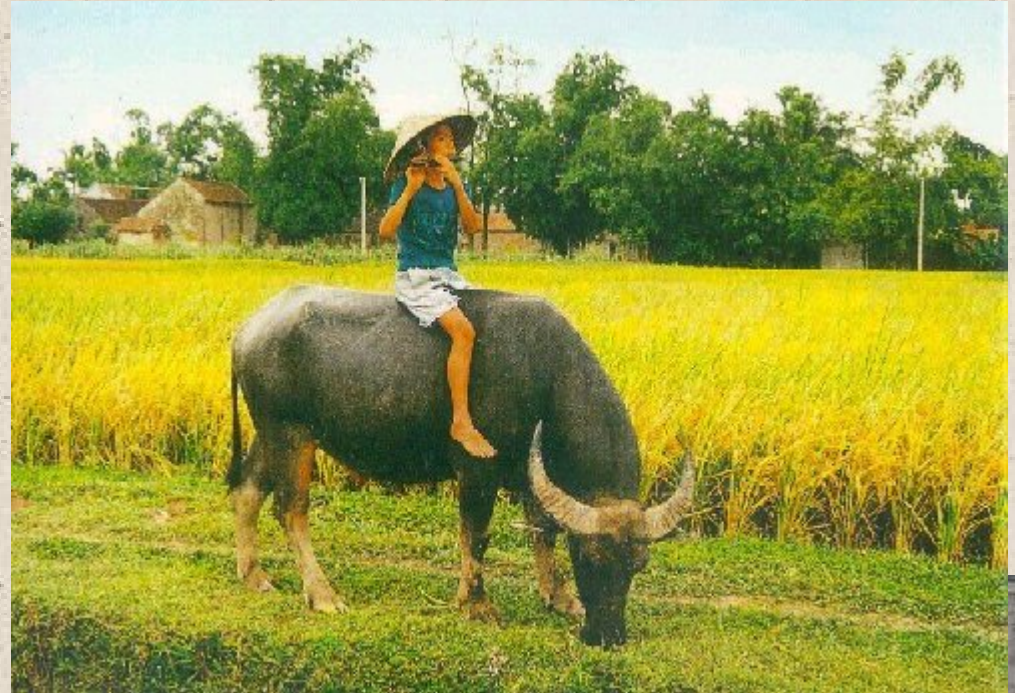
VIETNAM - family

In Vietnam, three generations living under the same roof is very popular. Almost of Vietnamese couple have two children. Grandparents are always respected by all family members.



Fisherman family living in the boat

VIETNAM - children



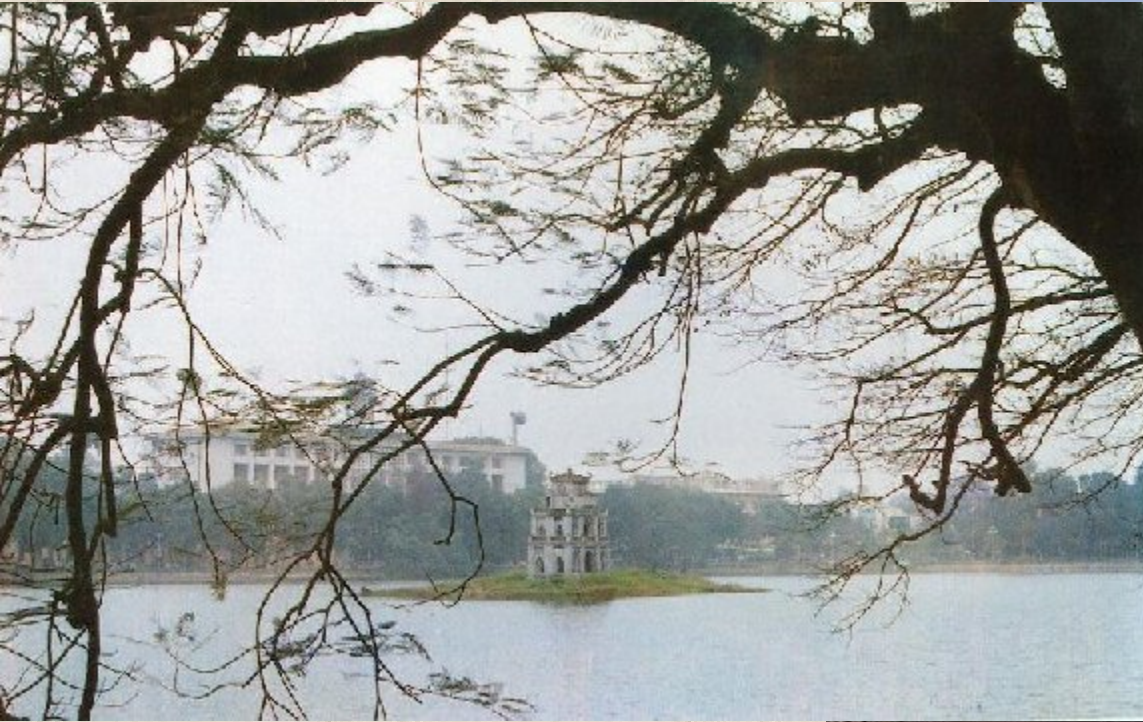
Children are always the first priority of society.



VIETNAM - city life style



HANOI-VIETNAM



The capital city - Hà Nội is 998 years old city. It is a quiet and small city with many beautiful lakes.



Cyclo in ancient street

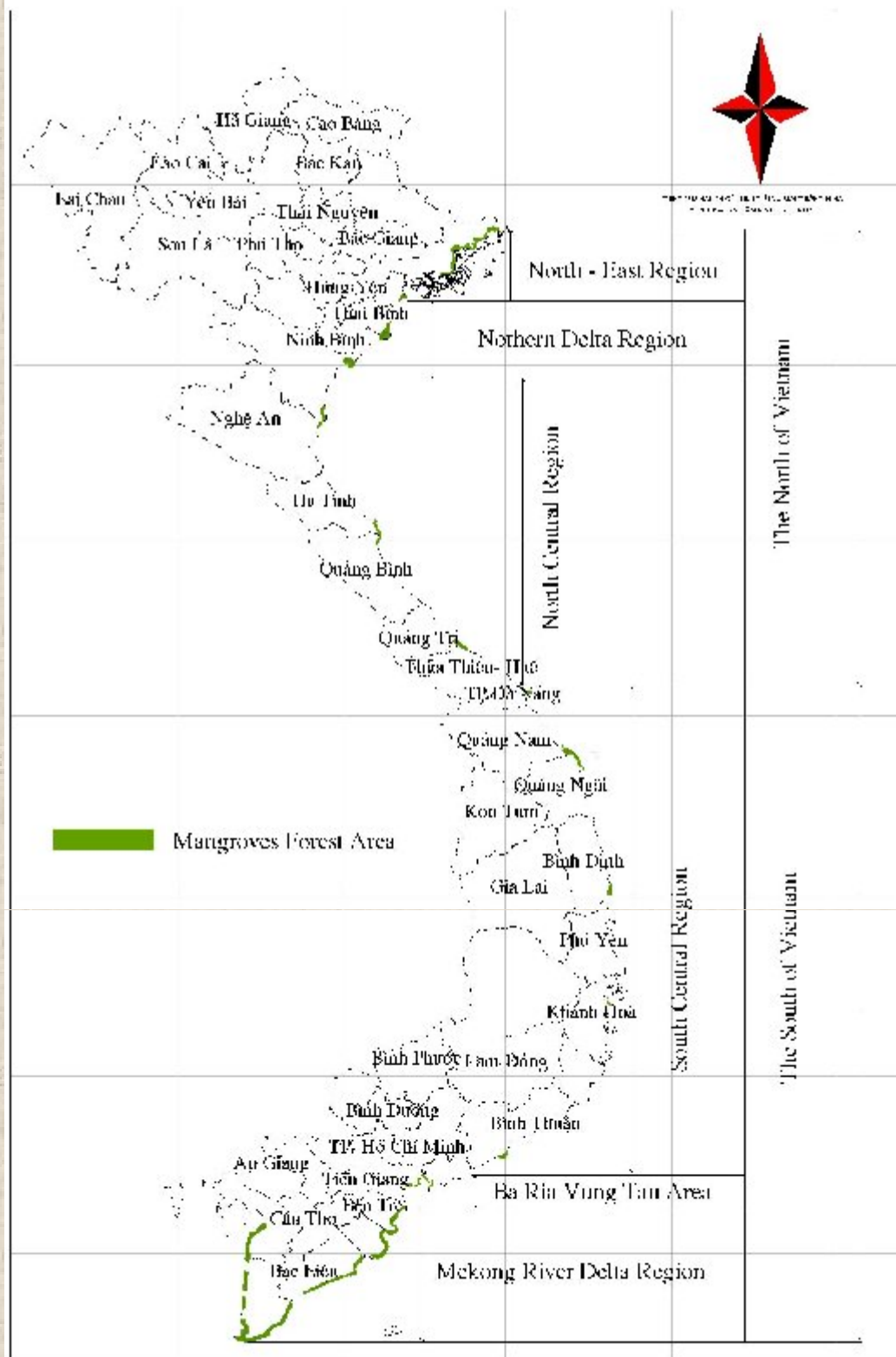
PART 2

MANGROVE IN VIETNAM: STATUS AND VALUES

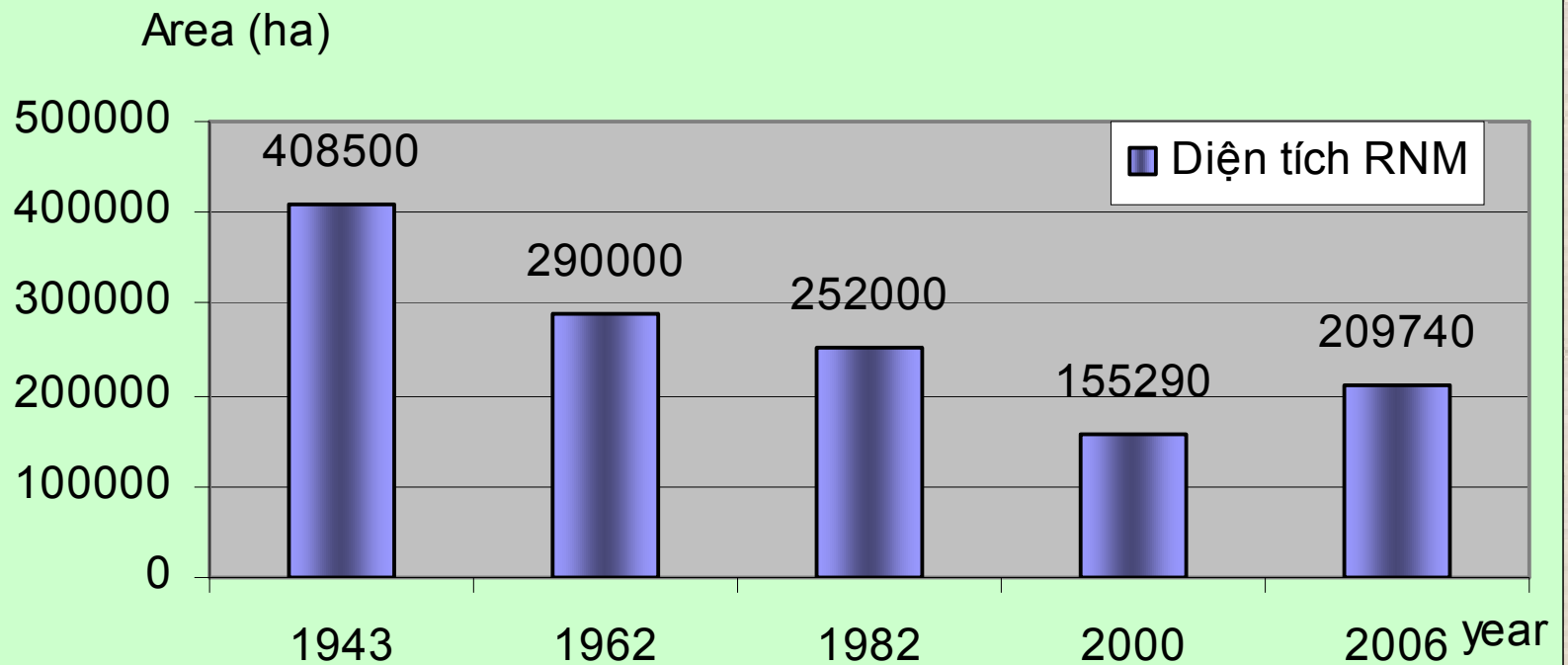


MANGROVE AREA AND LOCATION

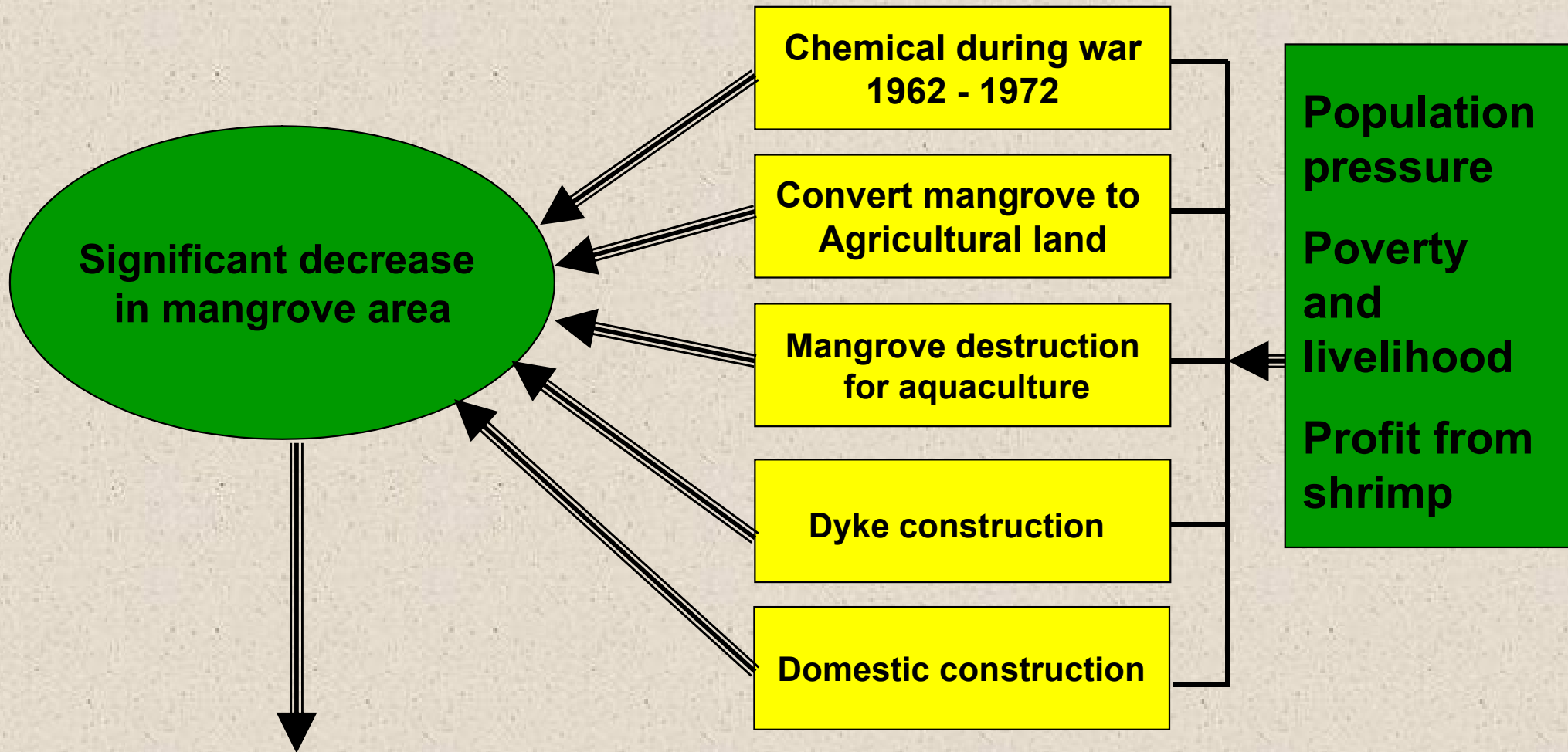
Region	Area (thousand ha)			
	Mangrove land	Have Mangrove	Without mangrove	Shrimp area
North East	65.000	22.969	27.194	14.837
Red River Delta	57.345	20.842	22.681	13.852
North Central	30.974	2.300	22.167	2.505
South Central	13.068	700	0	12.368
Southern East	67.100	26.092	37.540	3.468
Mekong River Delta	373.305	82.387	111.873	179.045
Total	606.782	155.290	225.394	226.075



Change in mangrove area during 1943 - 2006



Threatens to mangrove



- Loss of biodiversity values
- Loss of habitats
- Food chain destruction
- Soil and water degradation

Direct use values



คุณค่าทางโภชนาการของปูทะเล
สารอาหารต่อเนื้อปู 100 กรัม
พลังงาน 117 Kcal

Cooking molluscs from mangroves

ปูทะเล เป็นสัตว์น้ำที่มีคุณค่าทางโภชนาการสูง มีโปรตีนสูง และมีไขมันต่ำ มีวิตามินและแร่ธาตุที่สำคัญ เช่น วิตามินบี 12 และสังกะสี

วิธีปรุง: 1. ล้างปูทะเลให้สะอาด 2. ต้มในน้ำเดือดประมาณ 10-15 นาที 3. ตักขึ้นและล้างน้ำออก 4. ปรุงรสตามชอบ

คุณค่าทางโภชนาการของปูทะเล

ปูทะเล เป็นสัตว์น้ำที่มีคุณค่าทางโภชนาการสูง มีโปรตีนสูง และมีไขมันต่ำ มีวิตามินและแร่ธาตุที่สำคัญ เช่น วิตามินบี 12 และสังกะสี

Cooking Scylla from mangroves



Direct use values: Tourism



Indirect use values: Dyke protection

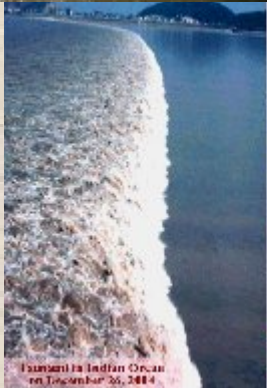


- Construction of sea dyke costs usually US\$0.7-1.0 million/km but more expensive sections costing up to 2.0-2.5 million US\$/km are already not rare
- 9/2005 constructing stronger sea dykes that would cost about US\$7-10 million/km.

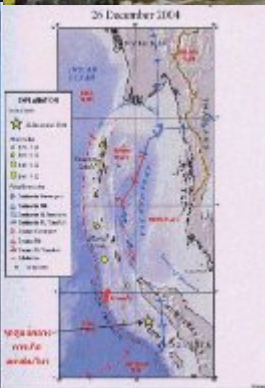
- The replace cost of mangrove forest for sea dike protection directly, and climate change mitigation indirectly, is about \$US 5-6 million/km.



Flood protection



Tsunami in Indian Ocean on December 26, 2004



NORTH WEST OF ACEH PROVINCE

10 JAN 2003



20 DEC 2004



CARBON SEQUESTRATION

15-year-old forest

Mangrove forest could more absorb than rain forest



Mangrove forest: 90.24 tons CO₂/ha/year

Rain forest: 29.5 tons CO₂/ ha/year

Carbon sequestration

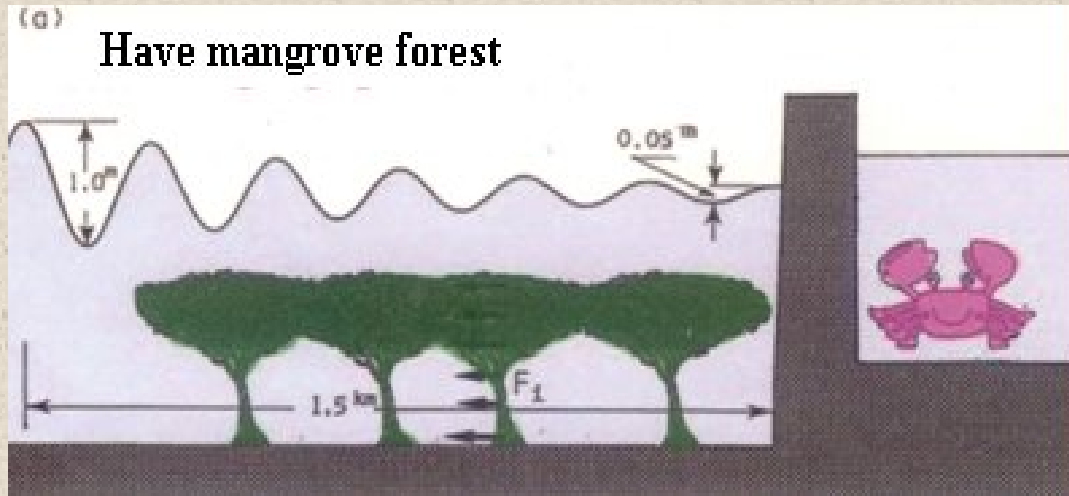


CO₂ Absorption and O₂ Release from Important Species of Mangrove Forest

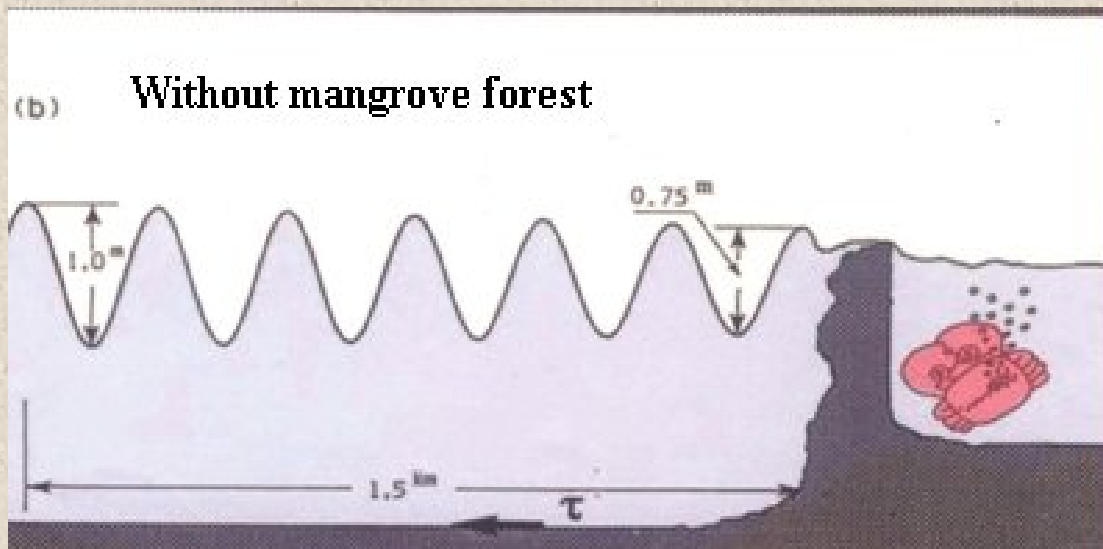
Species	CO ₂ Absorption (tonnes/ha/year)	O ₂ Release (tonnes/ha/year)
Rhizophora mucronata	58.4	42.4
Rh. apiculata	18.9	13.8
Avicennia alba	39.3	28.6
Ceriops tagal	18.1	13.1
Bruguiera gymnorrhiza	21.2	15.4

Erosion control

Reducing impact due to wave



- When mangrove forest is wide than 1.5km, height wave will reduce from 1m to 0.5m in lagoon coast



- Conversely, height wave is 0.75m and coast is eroded

Non-use values: Biodiversity

971 species of major terrestrial and aquatic fauna and flora groups have been recorded in Xuan Thuy National Park:

Beneficial groups of plants in the mangrove areas of Xuan Thuy

No	Use	Number	Percentage
1	Medicinal plants	111	60,3
2	Wood/fuel wood plants	19	10,3
3	Edible plants	13	7,1
4	Plants for livestock	33	18
5	Plants that protect dykes, prevent waves, wind, soil erosion	20	10,9
6	Ornamental plants	17	9,2
7	Other uses: fiber plants, plants for handicrafts, raising bees, etc	30	16,3

Value species:

Crab: 46 species

Shrimp: 15 species

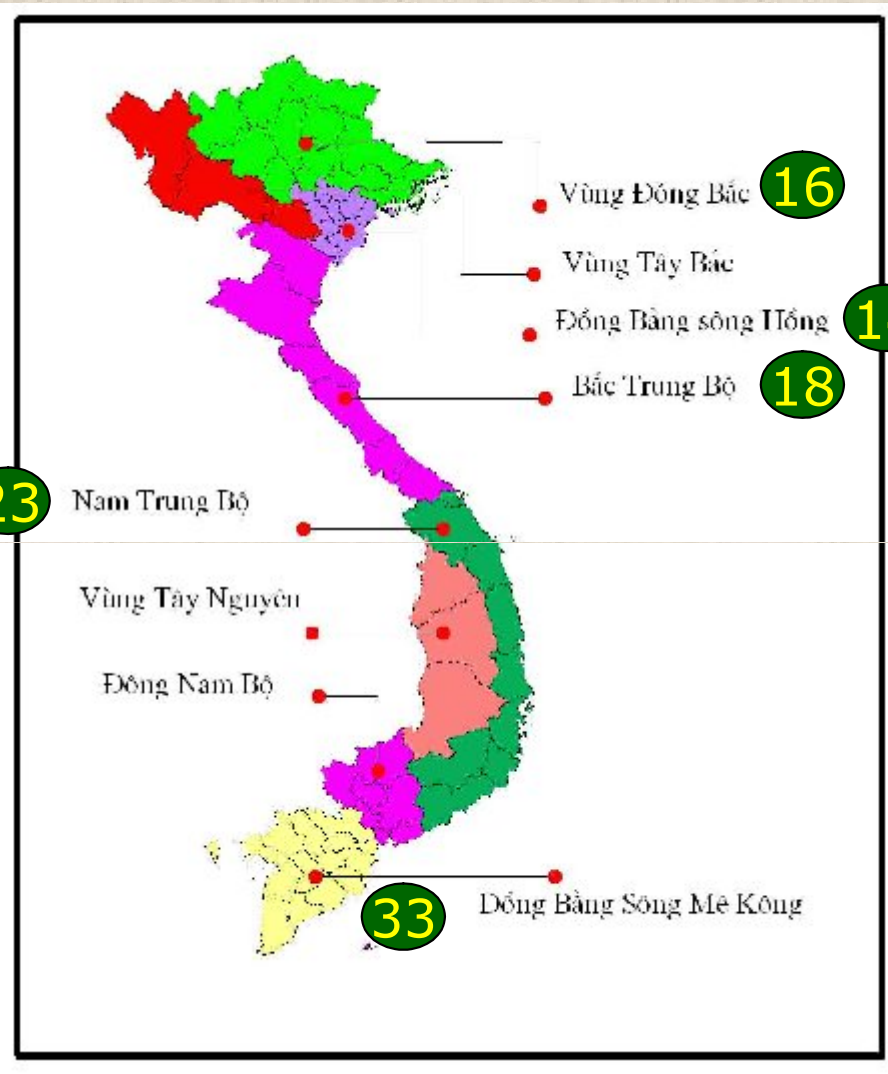
Shellfish: 4 species

Shipworm: 23 species

Fish: 52 species

Bird: 215 species

Mangrove trees (1)



Biodiversity values

Avicennia: 4 types

*Avicennia
alba*



*Avicennia
marina*



*Avicennia
officinalis*



*Avicennia
rumphiana*



Biodiversity values

Kadelia: 2 types

Kandelia candel



Kandelia obovata

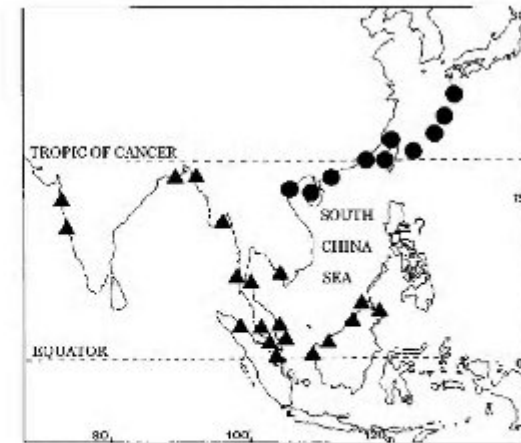
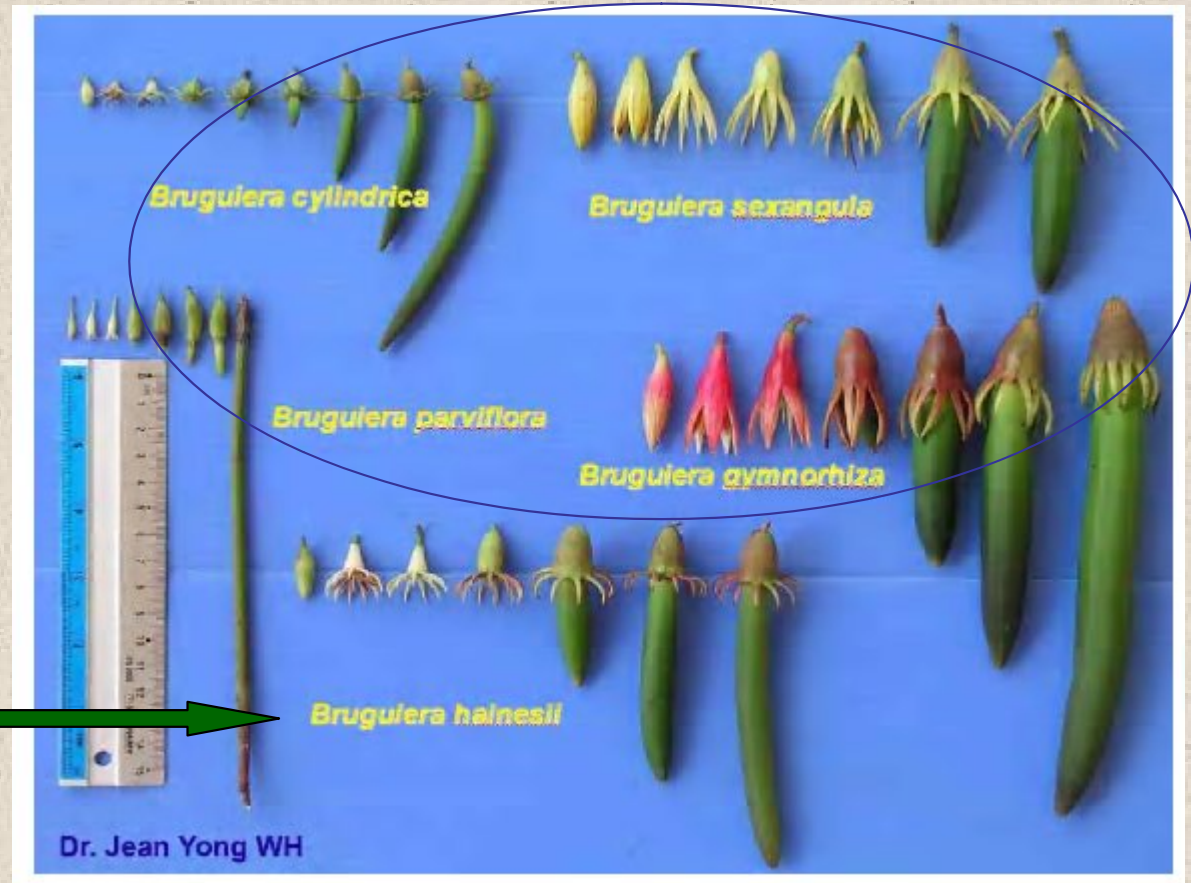


Fig. 4. Localities of *Kandelia candel* (triangles) and *K. obovata* (dots). Question mark refers to the doubtful localities in the Philippines. Sheue et al (2003)

Biodiversity values



Bruguiera– 6 types



Non use value: Historical site



PART 3

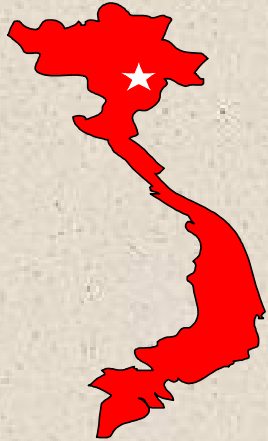
MANGROVE MANAGEMENT IN VIETNAM

REGULATORY FRAMEWORK FOR MANGROVE PROTECTION

- **Resolution 41/2004 by Political Bureau on 'Environmental protection during the period of industrialization and modernization' (2004)**
- **Environmental protection law (revised 2005)**
- **Forest protection law (1999)**
- **Law on water resource protection (2001)**
- **Fishery resource protection law (2000)**
- **National Strategy on environmental protection 2001-2010 (2000)**
- **National Action Plan for Biodiversity Protection to 2010 and vision toward 2020 (2007)**
- **Government Decree No 109/2003/ on conservation and sustainable use of Wetland areas in Vietnam (2003)**
- **National action plan for conservation and sustainable use of wetland area during 2004-2010**
- **National action plan for mangrove protection and development to 2015 (2005)**

ENVIRONMENTAL MANAGEMENT ARRANGEMENT

**COMMUNIST
PARTY**



THE NATIONAL ASSEMBLY

THE GOVERNMENT

**MINISTRY OF ENVIRONMENT &
NATURE RESOURCES/
MINISTRY OF AGRICULTURAL AND
RURAL DEVELOPMENT**

**PEOPLE'S COMMITTEE OF
CITY/PROVINCE**

PROVINCIAL LEVEL:

**DEPT OF ENVIRONMENT & NATURE RESOURCES MANAGEMENT/DEPT OF
AGRICULTURAL AND RURAL DEVELOPMENT**

DISTRICT LEVEL

ENVIRONMENTAL DIVISION/ AGRICULTURAL DIVISION

PROPERTY RIGHT REGIMES

- State management (special forest, protection forest)
- Private management (production forest)
- Community based management



National Action Plan for Mangrove Protection & Development to 2015 (NAP)

Overall objective

The overall objective is to promote the protection, rehabilitation and wise use of Vietnam's mangrove ecosystem towards sustainable development so that the protection function, values and its biodiversity could meet the need of socio-economic development and environmental protection in river estuaries and coastal areas.

Specific objectives

1. To primarily change the perception on mangrove ecosystem values for key managers at local (province and district) levels, mass organizations and communities in mangrove areas.
2. To reinforce the effectiveness of mangrove ecosystem protection, rehabilitation and development.
3. Improve perception and understandings on biodiversity of mangrove ecosystem, and conservation values of rare and precious gene sources.
4. Contribute to livelihood improvement for the people who live inside or vicinity of mangrove areas.

NAP

Objective 1

Action 1.1 Strengthen appropriate activities to transform perception:
Compile educational materials; Integrate these knowledge in school;
Capacity building for agencies

Action 1.2: Reinforce propaganda and universalization for social organizations and local communities in mangroves areas for immediate and long term benefits...using various methods: leaflets, training, discussion, radio and television broadcasts..



NAP

Objective 2:

Action 2.1: Reinforce and consolidate the system of wetland & mangrove ecosystems management at ministerial level (MONRE & MARD) and local levels (province and district) in an intersectoral linkage (Agriculture, Forestry, Fisheries, Construction, Tourism...)

Action 2.2: Revise and supplement national institutional structure, policy framework to perform the package of decisions and decrees on effective and sustainable management and utilization of mangrove ecosystem..

Action 2.3: Review and perform land-use plannings in provinces and districts which possess mangrove forests and make these plannings legally, scientifically and practically sound. .

Action 2.4: Appropriate use, protection and rehabilitation of mangrove ecosystem, e.g. Minimize mangrove exploitation; 5-year-period mangrove rehabilitation plans...

Action 2.5: Reinforcement and development of nature reserves and national parks.

NAP

Objective 3:

Action 3.1: Speeding up scientific research activities, collaborative research, and transfer of technology to production..

Action 3.2: Broaden and strengthen international cooperation in research, protection, restoration and sustainable use of mangrove ecosystem.

Objective 4:

Action 4.1: Socialize forestry and upgrade living standard for local people in areas with mangroves

PART 4

DEMO SITE: XUAN THUY NATIONAL PARK

**BẢN ĐỒ HIỆN TRẠNG KINH TẾ - XÃ HỘI
VƯỜN QUỐC GIA XUÂN THỦY
TỈNH NAM ĐỊNH**



TỶ LỆ 1: 100000

CHỮ GIẢI

<ul style="list-style-type: none"> --- Ranh giới huyện --- Ranh giới xã --- Ranh giới vườn quốc gia --- Đường quốc lộ --- Đường sông --- Ranh cấp I --- Công 	<p>LOẠI NHÀ</p> <ul style="list-style-type: none"> Cọc Thảm cỏ Sân, vỉa Sông Tôn Vườn đặc biệt 	<p>ĐIỂM DẠNG HỌC</p> <ul style="list-style-type: none"> Cửa Khu Tượng binh Mộ 	<p>CƠ CẤU ĐẠO ĐỘ CAO ĐỘ</p> <ul style="list-style-type: none"> Tầng địa phương Tầng địa phương trong nội Mở rộng nội địa trong
<p>CÔNG NGHỆ</p> <ul style="list-style-type: none"> Sân đá Thy ba Thy ba Tượng bực Thy ba Mô 	<p>THIẾT DẠNG ĐỘ</p> <ul style="list-style-type: none"> 1110 người/ha 1207 người/ha 1111 người/ha 1021 người/ha 1214 người/ha 	<p>CƠ CẤU ĐỘ ĐƯỜNG ĐẠO</p> <ul style="list-style-type: none"> Đer địa Đer 6 Đer chuy Đer công 	

- Located in Ba Lat estuary (Nam Dinh)
- First Ramsar site in Vietnam (1989)
- Recognized as National Park (2003) The site is about 7000 ha and comprises three islands and intervening inter-tidal mudflats.
- Core zone: strictly protected
- Buffer zone: shrimp farm





- Xuan Thuy Park supports 14 habitat types
- Mangrove species is *Kandelia candel*, *Sonneratia caseolaris*, *Aegiceras corniculatum* and *Acanthus ilicifolius*.
- The Park is an important staging and wintering area for migratory waterbirds. More than 20,000 waterbirds were observed.
- Eight species of globally threatened: Black-faced Spoonbill *Platalea minor*, Chinese Egret *Egretta eulophotes*, Spotted Greenshank *Tringa guttifer*, Saunders's Gull *Larus saundersi*, Spot-billed Pelican *Pelecanus philippensis*, Spoon-billed Sandpiper *Eurynorhynchus pygmeus*, Painted Stork *Mycteria leucocephala*, and Asian Dowitcher *Limnodromus semipalmatus*
- Xuan Thuy supports the largest wintering population of Black-faced Spoonbill in Vietnam-50 birds.



Initial economic valuation (2003)

USES	Use Values						Non-Use Value					
	Direct		Indirect		Option		Quasi-Option		Bequest		Existence	
	VND (ha)	USD (ha)	VND	USD	VND	USD	VND	USD	VND	USD	VND	USD
EXTRACTIVE USE												
Construction wood	125,800	7.91										
Fuel wood	91,500	5.75										
Aquaculture	16,500,000	1,037.74										
Honey	141,000	8.87										
Marine product picking*	3,120,000	196.23										
Pharmaceutical products	19,000	1.19										
NON-EXTRACTIVE USE												
Tourism/Recreation	18,000	1.13										
Research & Education	VS	VS										
Aesthetic	VS	VS										

Thanks very much!

