

Conservation and Sustainable Use of Melaleuca Forests on Peatlands and Marshes area in Ca Mau, Vietnam



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Contents of the presentation

- **Outline of Ca Mau Province and Forest Situation**
- **Melaleuca Forest Conservation**
- **Sustainable use of Melaleuca Forest**
- **Conclusion**

Outline of Ca Mau Province and forest situation

Location and Socio-economic Conditions of Ca Mau



Provincial area: 5,294 km²
Population: over 1.2 millions
Structure of GDP 2011(%)

- *Agriculture, forestry, fishery* 38.8

- *Industry and construction* 36.7

- *Service* 24.5

*GDP per capita: 1,118 USD

Natural Conditions of Ca Mau

■ Climate: Tropical Monsoon

- ✓ Annual Rain Fall: 2,000-2,700mm
- ✓ Rainy Season: May – Nov.
- ✓ Dry Season: Dec. - April
- ✓ Average Temperature: 26.5 C



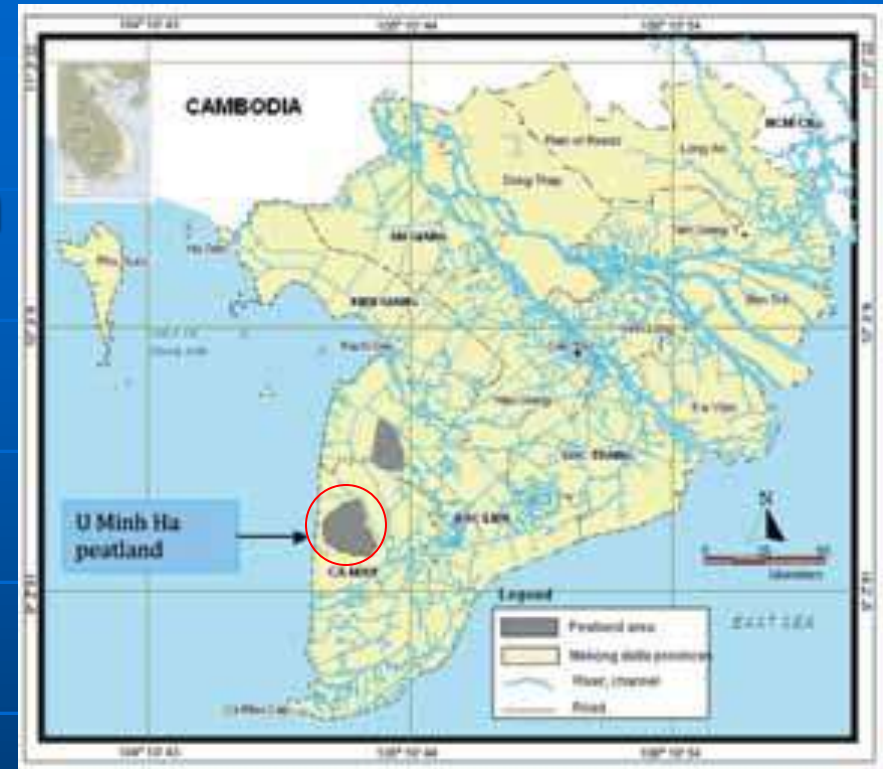
■ Topography:

- ✓ Low/Flat average 0.5m altitude
- ✓ Affected by Two Tidal Regime
- ✓ Water Submerge Often Occur
- ✓ Divided by Rivers and Canals



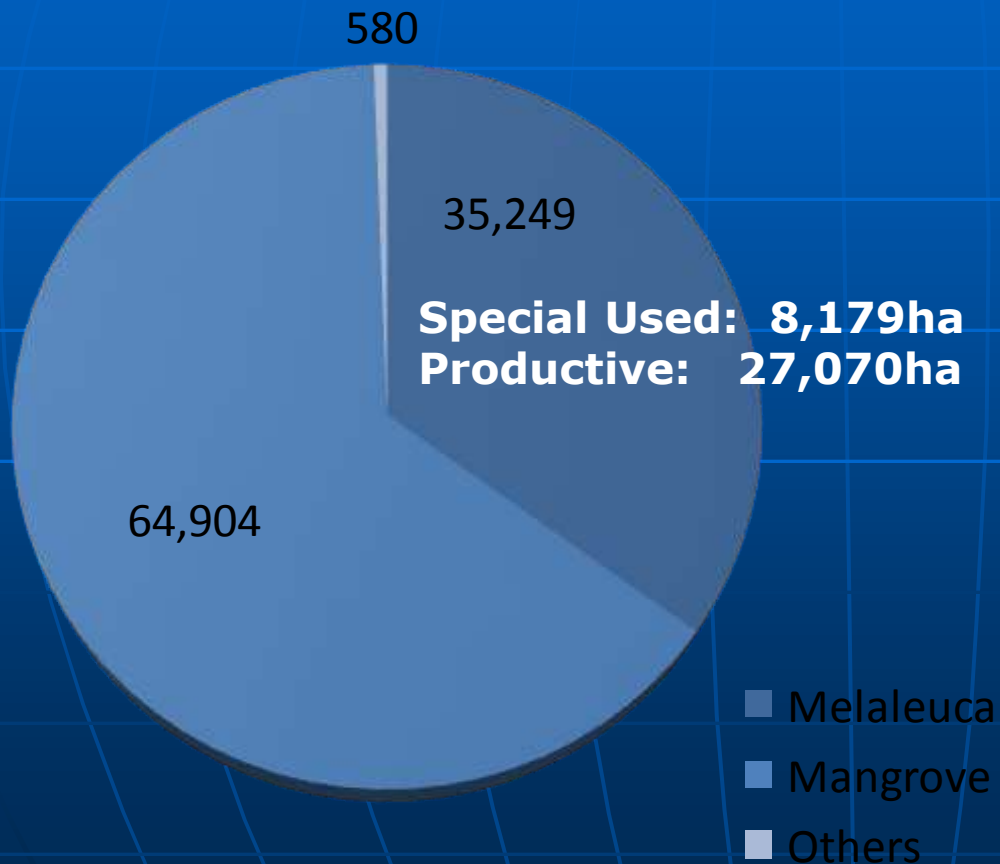
Peatlands in Ca Mau

- Year 1978: **30,000ha**
- Now: **9,850ha** (in which 4,647ha with thickness of over 50cm)
- Covered by mainly **Melaleuca** (*Melaleuca cajuputi*) Forests



Present State of Forests in Ca Mau

Forest Area: 100,733ha



Melaleuca Forest and Biodiversity

- **Flora:** 79 species including 11 timber species (*Melaleuca cajuputi* is dominant species)
- **Fauna:** 32 mammal species (10 in Red Book), 74 bird (4 in Red Book), 36 reptile, 11 amphibian.
- *Species found in U Minh Ha National Park



Hairy-nosed otter: *Lutra sumatrana*

Melaleuca Forest and Economy



Planting



Harvest



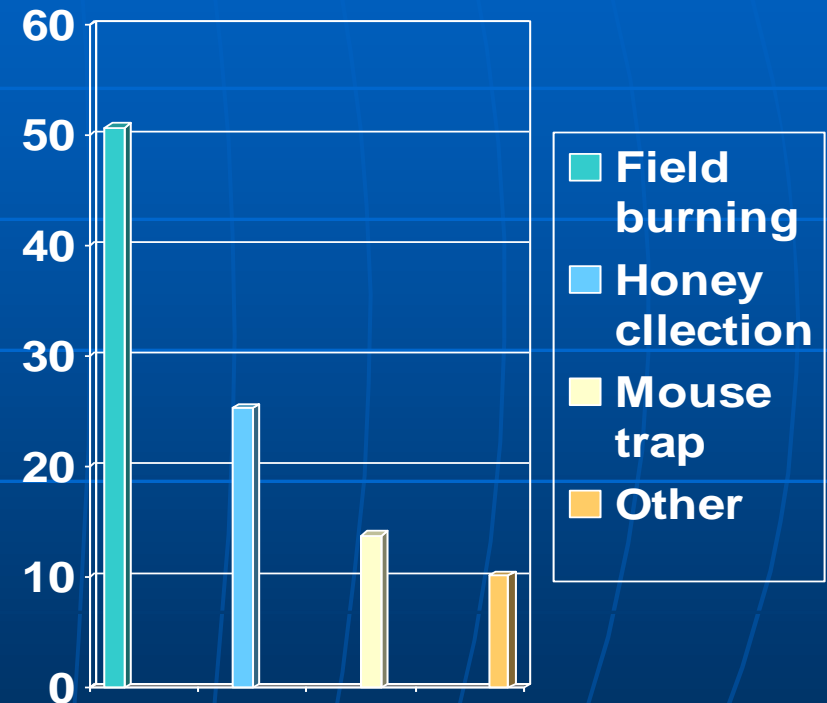
Honey collection

Forest Fire in Melaleuca Forest

■ Forest fire area

- 1983: 28,000 ha
- 1987: 13,000 ha
- 1990: 4,700 ha
- 2002: 4,420 ha
- 2010: 230 ha

■ Main cause of forest fire (%)



Burned area adjacent to local people

Melaleuca Forest Conservation

National Park and Production Forest

■ U Minh Ha National Park

- ✓ **Area: 8,085ha**
(ex.forest:8,009ha)
- ✓ Year registered: Jan. 2006
- ✓ UNESCO Biosphere Reserve
(May 2009)
- ✓ **Peatlands: 6,430ha**
 - Thickness over 100cm: 792ha
 - 50–100cm : 2,190ha
 - 30–50cm : 3,448ha

- Scientific research Forest in U Minh Ha: **170ha**

- Production Forest in U Minh Ha: **27,070ha**

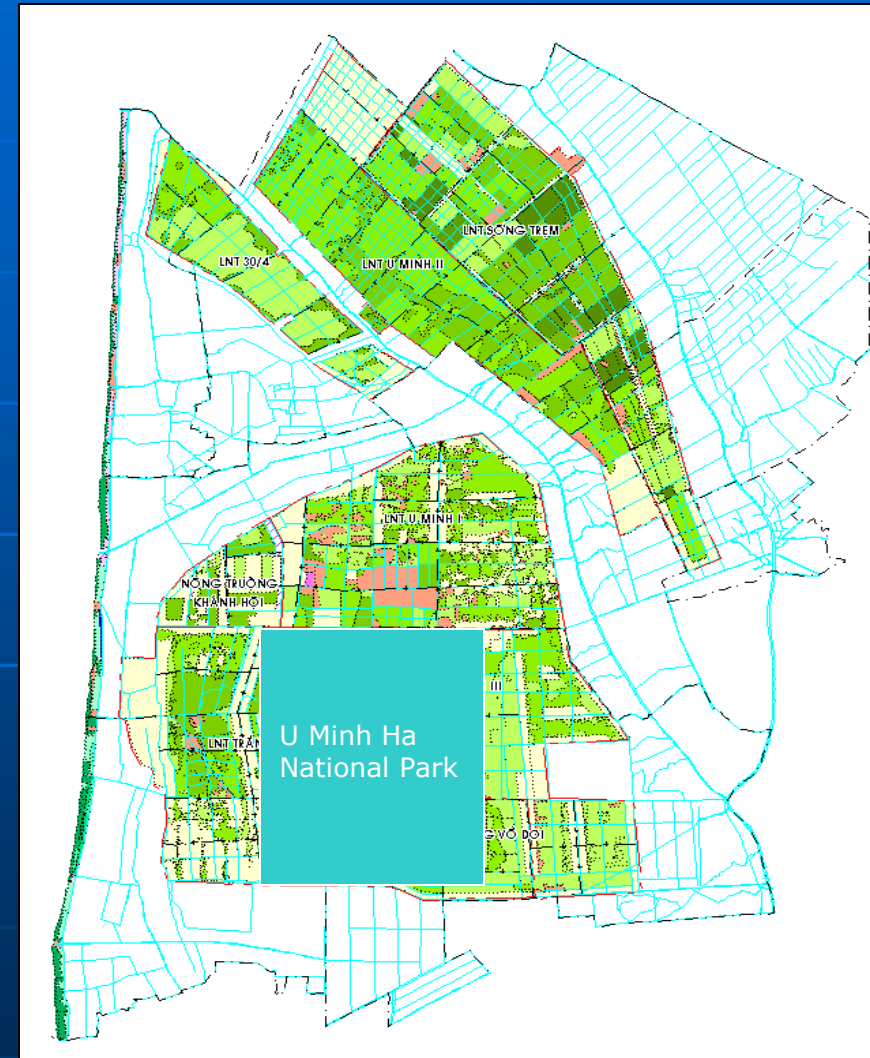


Diagram of U Minh Ha Forest Area

Conservation of Peatland Ecosystem

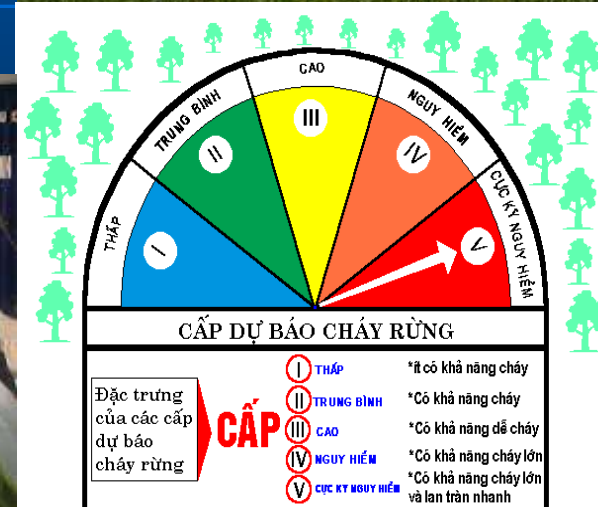
- **U Minh Ha National Park**
Classified into 3 sub-areas
 - ✓ Conservation of peatland ecosystem: 2,570ha
 - ✓ Restoration and sustainable use of wetland forest ecosystem: 4,961ha
 - ✓ Service and administration: 554ha





Forest Fire Prevention Activities

- Fire Watch Station
- Fire-level Alarm Board
- Leaflet
- Training and Workshop etc



Forest Fire Prevention Activities

- **Canal and Sluice system:** Keep/control water in canals to maintain proper humid of peat layers
- **Green Bank:** Planting trees on dykes
- **Equipment:** pump, boat, walkie-talkie...



Sustainable Use of Melaleuca Forest

Sustainable Use of Melaleuca Forest

- **Forest Management Area by owner:**
 - ✓ U Minh Ha forestry company: 19,466ha
 - ✓ National park office: 8,009ha
 - ✓ Farmers etc: 7,774 ha
- **Annual harvest forest area: 1,385 ha**
- **Annual harvest volume: 79,650 m³**

Main Use of Melaleuca Wood

- Construction Pole
- Furniture
- Charcoal



Plantation technique of Melaleuca

■ Annual Plantation in Melaleuca Forest Area

| Year | Plantation | Embankment |
|-------|------------|------------|
| | | |
| 2007 | 1,292 | |
| 2008 | 1,657 | 133 |
| 2009 | 1,150 | 234 |
| 20010 | 1,625 | 28 |
| 2011 | 1,198 | 131 |
| Ave. | 1,384 ha | 105 ha |



Importance of improving livelihood for forest management

■ 70/30 regulation

- ✓ Farmers must maintain 70% of allocated land as forest
- ✓ High poverty rate, inadequate infrastructure and public services
- ✓ Need improving livelihood for sustainable forest management



Technical training for farmers

■ Training for income generation to reduce poverty:

- ✓ Rice cultivation
- ✓ Fruit tree farming
- ✓ Domestic animal raising
- ✓ Aquaculture etc...



Forestry income

■ Embankment enable to plant more profitable tree species

- ✓ Nowadays Acacia is recommended species in U Minh Ha
- ✓ Annual plantation: 214 ha
- ✓ Density: 2,400 trees/ha
- ✓ Average growth: 25-30m³/ha/year



Acacia mangium x auriculiformis
planted after 01 year

Infrastructure development



Conclusion

- Peatlands are covered by mostly Melaleuca forests in Ca Mau.
- Melaleuca forests are conserved in national park and sustainably used in production forest.
- Forest fire prevention is the most important matter for conservation and sustainable use of Melaleuca forests.
- Also improving livelihood is the key issue for sustainable management of forests.



Thank you for your attention!