PRESENTATION

CLIMATE CHANGE ADAPTATION PLAN OF BEN TRE PROVINCE

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Ben Tre DONRE

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NATURAL CONDITIONS

TOPOGRAPHY

- **There are three typical topography types in Ben Tre:**
  - Low-lying area (with elevation below 1m): **6.7%** of total area.
  - Medium elevation area (elevation of 1-2m): **87.5%** of total area.
  - Elevated area (2.0-3.5 m, some particular area of more than 5m): **5.8%** of total area.

NATURAL CONDITIONS

GEOGRAPHIC LOCATION

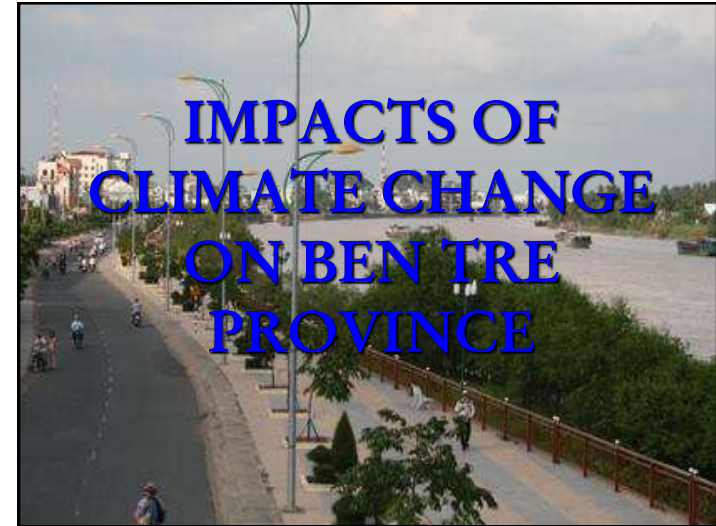---

NATURAL CONDITIONS

WEATHER

- **Temp:** 26 – 27°C, increased 0.05-0.15°C in the 20th century
- **Rainfall**: 1,200-1,500 mm
- **Water level:** in 2003-2007, water level was 15-20 cm higher than annual average.

NATURAL CONDITIONS

CLIMATIC

- **Wave**: the most dangerous direction is the North-East, East, and South-East.
- **Saline intrusion:** especially in the dry season, saline intrusion is serious and far reaching inland.
  - Salinity boundary 4%: up to 50km into land
  - Salinity boundary 1‰ up to 70km
- **Storm**: subject to the impact of tropical low pressure or storms such as Durian Storm in 2006.

IMPACTS OF CLIMATE CHANGE ON BEN TRE PROVINCE

Storm# 9 (Durian) in 2006 in Ben Tre

COASTAL AREA

- Coastal erosion-mangrove
- Far reaching inland saline intrusion
- Increase of salinity impacted area

WATER RESOURCES

- Water shortage, drought, salinity intrusion
- Reduced ground water recharge and retention capacity.

LAND RESOURCES

- Changes to land use
- Reduction of agricultural land
- Changes of human settlement, especially along the coast.

INDUSTRIAL SECTOR

- Reduction of raw materials
- Affected production area

COPING AND ADAPTATION ACTIONS OF BEN TRE

AGRICULTURE, FORESTRY, FISHERY

- Area for aquaculture might be inundated and intruded by salinity
- Reduced area for fresh water fishery
- Extirpation of flora and fauna species that fail to adapt.

10 MOST AFFECTED PROVINCES UNDER THE SCENARIO OF 1m OF SEA LEVEL RISE

10 tỉnh bị ảnh hưởng nhiều nhất: tỷ lệ ngập nước theo kịch bản nước biển dâng lm

Tỉnh	Tổng diện tích (km2)	Diện tích bị ngập (km2)	% bị ngập
Ben Tre	2,257	1,131	50.1
Long An	4,389	2,169	49.4
Tra Vinh	2,234	1,021	45.7
Soc Trang	3,259	1,425	43.7
Ho Chi Minh City	2,003	862	43.0
Vinh Long	1,528	606	39.7
Bac Lieu	2,475	962	38.9
Tien Giang	2,397	783	32.7
Kien Giang	6,224	1,757	28.2
Can Tho	3,062	758	24.7
Tổng cộng	29,827	11,474	38.5

10 most affected provinces under the scenario of 1 m sea level rise, according to Jeremy Carew-Reid, Director of ICEM

Key Tasks

For water resources

- Complete the freshenizing infrastructure system: Ba Lai dam and watergate and Cau Sap
- plan, manage surface water sources
- use water appropriately
- Improve capacity for climatic and hydrological and water resource forecasting

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- DIPI
- Dept of Finance
- DOST
- Weather Forecast Station

For marine and coastal area

- Identify areas that construction should be forbidden along the coast
- Buid the coastal road to cope with 30cm of in 2050
- Build the weather and env't warning system
- Upgrade the coastal dyke system and river mouth dyke
- Protect coastal mangrove and wetland ecosystems

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For Agricultural Sector

- Shifting structure of animal husbandry and cropping appropriate to Climate Change
- Improve drainage of rain water.
- Research and application of science and technology in farming, irrigation, and drainage

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For forestry sector

- Socilize forest planting, management; increase forest planting and scatter planting
- Protect natural protection forest, planted forest, and mangrove ecosystems
- Forest fire control
- Establish forestry seed/seedling supply area

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For Landuse Planning

- Optimize land use planning according to selected CC scenarios
- Shift structure of land use appropriate to CC
- Prioritize land for water resource management infrastructures
- Research on measures for preventing soil degradation
- Adjust urban planning and planning of residential areas.

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For fishery sector

- Develop aquaculture species/varieties that can cope with environmental change
- Establish nature reserves
- Research, forecast movement of fishes, change of fishing grounds
- Establish fishery fingerling supply areas
- Develop integrated aquaculture systems to prevent storms and inundation

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For energy sector

- Improve effectiveness of energy use and conservation
- Promote the use of renewable energy sources
- Conserve energy

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For Transportation Sector

- Upgrade and improve transportation infrastructure system
- Promote the use of public and less pollution

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For culture and information sector

- Enhance environmental education
- Provide training on CC to managerial officials and communities

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- Dept of Finance
- DOST
- Dept of Health
- Mass organization

For Public Health Sector

- Improve health care system
- Improve public awareness
- Monitor epidemics and develop medical interventions

- DONRE
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- DIPI
- Dept of Finance
- DOST
- Dept. of Health