

INCEPTION WORKSHOP ON
ENHANCING CLIMATE CHANGE ADAPTATION IN SOUTHEAST ASIA
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**STUDIES OF NATURAL DISASTERS, SLOW ONSET
EVENTS AND LOSS & DAMAGE IN QUANG NGAI,
VIETNAM**

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Why Quang Ngai Province is Chosen?

Quang Ngai province:

- Situated in the middle of Vietnam.
- The coastline is more than 130km with many river mouths such as Sa Ky, Cua Dai, My A, Sa Huynh
- Effected by many kinds of Natural disasters
- Action Plans to cope with climate change for the Province has been approved.

Types of Natural Disasters in Quang Ngai

- Tropical Cyclones
- Floods and Flash Floods
- Landslides, thunderstorms, tornado lightning
- Drought, wildfires
- Sea level rise, Salinization.

Dangerous Level of natural hazards occur in Quang Ngai province

TT	Types of Natural Disasters	Level of danger			
		Very High	High	Medium	Slight
1	Typhoons	X			
2	Floods	X			
3	Riverbank and shoreline erosions		X		
4	Mountain Landslide		X		
5	Northeast monsoon		X		
6	Thunderstorms, tornados, lightning		X		
7	Flash floods		X		
8	Sea level rise			X	
9	Droughts			X	
10	Saline intrusion			X	
11	Hot dry winds				X
12	cold weather damage				X
13	Hail				X
14	Fog, frost				X

Sea Level Rise in Quang Ngai

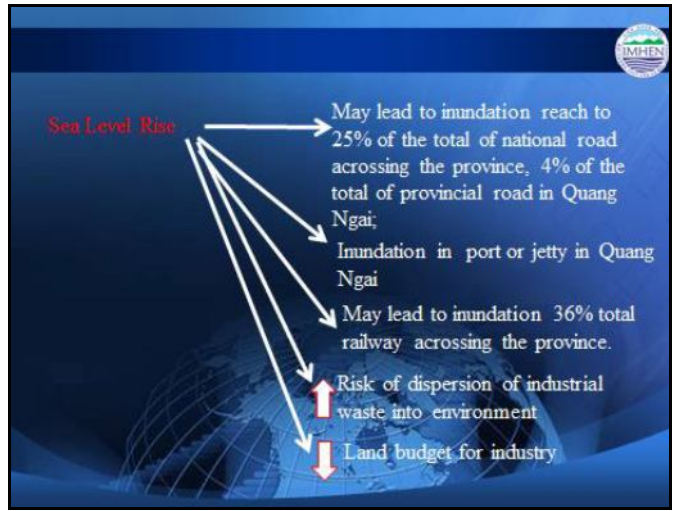
CC scenarios	Decades								
	2020	2030	2040	2050	2060	2070	2080	2090	2100
Low	7-8	12-13	17-18	22-25	29-33	35-41	41-49	47-57	52-65
Medium	8-9	12-13	18-19	24-26	31-35	38-44	45-53	53-63	61-74
High	8-9	13-14	19-21	27-29	36-40	47-53	58-67	70-82	83-97

Sea Level Rise Scenario for Region 4 including Quang Ngai Province (cm)

High Emission Scenario →

Salinization in Quang Ngai

- **Main reason:** the salinity of seawater intrusion in estuaries across the tide.
- **Many factors contribute the degree of salinity :**
 - The salinity of coastal water (sea Quang Ngai has the largest average salinity of about 32 ‰);
 - The tide regime in estuary (both diurnal and semi-diurnal tides, tidal estuaries range during the dry season average from 1.2 to 1.3 m, large most do not exceed 1.5 m);
 - The topography of the coastal plains and river slope;
 - The flow of upstream.
- **Areas affected** are coastal plains of the river mouth as the region: East of Binh Son District (Sa Can river mouth), East of Son Tinh, Tu Nghia and Mo Duc districts (Dai and Lo river mouths), Southeast of Duc Pho (My A and Sa Huynh river Mouths).



Projected Inundation area under climate change scenarios

(Total area of Quang Ngai is 515.295 ha)

Scenarios	Period	Area of entire inundation(ha)	Differences with a historical flood in 1999 (ha)	Scale of changes in comparison with the flood in 1999 (%)
1999	1999	59366		
B1	2020-2039	60645	1279	2,15
	2040-2059	60820	1454	2,45
	2060-2079	60838	1472	2,48
	2080-2099	60838	1472	2,48
B2	2020-2039	60825	1459	2,46
	2040-2059	60825	1459	2,46
	2060-2079	60932	1566	2,64
	2080-2099	60639	1273	2,14
A2	2020-2039	60638	1272	2,14
	2040-2059	60825	1459	2,46
	2060-2079	60949	1583	2,67
	2080-2099	60984	1618	2,73

