



Blue Ocean Economy of Shandong Province

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China- the biggest country in Asia



National Ocean-related Strategies in China

- China's 12th five-year Plan for National and Social Development (2011—15) included “Development of the Ocean Economy”
- Jan. 2011, the State Council of Chinese Government approved the establishment of the Shandong Peninsula Blue Economic Zone (as one three pilot zones and later extended to eight)
- Shandong Province is a lead Province of Development of Blue Ocean Economy in China

Shandong-with the second longest coastline in China

Map of Shandong

Bohai Sea



Yellow Sea

Blue Economy of Shandong Peninsula: Challenge and opportunity

- ❑ Sustainable and scientific development of the coastal zone.**
- ❑ Harmonic development of Economy, Culture, Society, and Ecosystem.**
- ❑ Emphasizing the importance of harbors, ocean industries, and environmental protection projects.**
- ❑ Making the peninsula of reasonable long term plan and powerful competitiveness.**

Blue Economy of Shandong Peninsula: Challenge and opportunity

Sea area :160,000km²

Land area: 64,000km²

Length of coast line: 3000km

Blue economy cities:

Qingdao,
Dongying,
Yantai,
Weifang,
Weihai,
Rizhao
Binzhou.



Blue Economy of Shandong Peninsula: Challenge and opportunity

Northern part: Yellow river delta ecologic area
Dongying, Binzhou, and Weifang

Eastern part: hi-tech ocean industry clusters
Weihai, Yantai

Southern part: Port-side industry clusters
Qingdao, Rizhao

What do we want?

Sea area

Sea area is essential to the ecologic zone in Northern part of Shandong peninsula, particularly in Yellow river estuary.

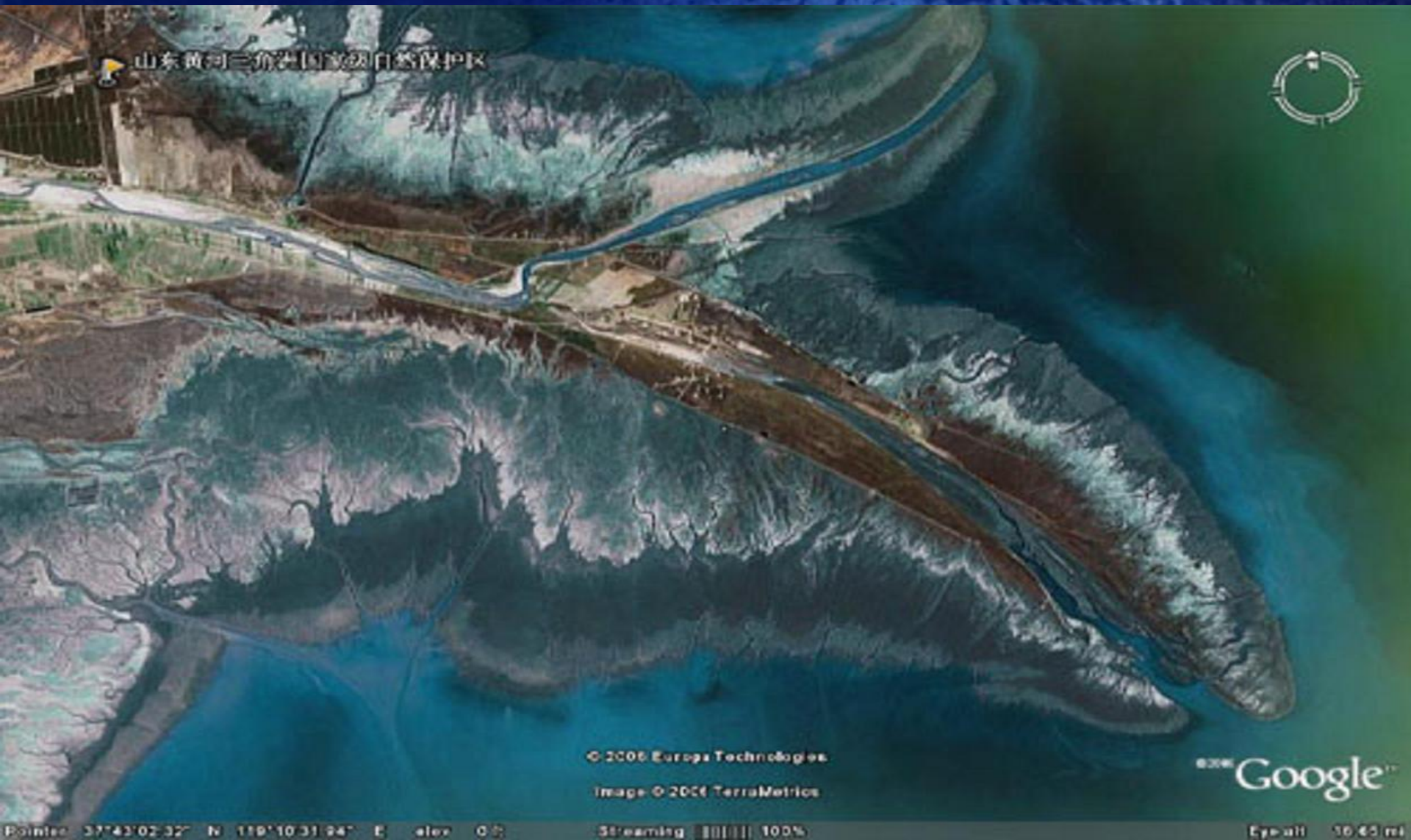
Coast line

Coast line is adequate in the Eastern part of Shandong, for example, Weihai, but it was not well planed and needs restoration.

Seaside land

Seaside land has strong attractive force for industries, especially for port and processing enterprises.

How can we get?



How can we get?

Yellow river estuary delta has abundant resource of fresh water, mudflat, and land area.

The development of this part aims at agriculture and fishery.

The environment protection is the key point here.

Shallow water, fine sediment, mild slop.

中韩自贸区地方经济合作开放试验区项目规划图



How can we get?

Weihai has the longest coast line in Shandong province. It has transactional relations with Korea and Japan.

Ocean engineering and shipbuilding were once the main industries in this city. But they occupied lots of coastline.

The reorientation and restoration are needed to adjust to the hi-tech industries.

China-Korea free trade zone is established.

How can we get?

青岛董家口港区鸟瞰图



How can we get?

Qingdao has the biggest port in Shandong. It has Jiaozhou Bay, which is appropriate for even larger development.

But the land is not enough. We need land reclamation to give area for investment of port-side industries.

Land reclamation gives impact to ocean environment, so, we move it to the open sea area, Dongjiakou.

Qingdao port is the 8th largest port in the world, 2014.

Role of Ocean Science and Engineering in developing “Blue” Ocean Economy

Two main objectives of Blue Ocean Economy

- Ocean environment protection for Sustainable Development
- More profit and contribution to National Economy

Some developers have tendency to ignore conservation of coastal environment and focus on short-term economic development, which is not “Blue”.

What ocean scientists and engineers need to do for the development of “Blue” Ocean Economy ?

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- 1). Proper guidance and suggestion to policy makers
 - 2). Technical support for Development & Conservation

- i) Planning & development stage

- Proper environmental impact analysis
- Proper design of coastal development and conservation

- ii). Operation Stage

- Support for efficient operation (Sea transportation, fishing, construction,...)
for more profit and Role of Ocean Science and prevention of coastal hazards
- Proper protection of coastal environment
 - . Beach protection
 - . Proper combat against Oil Spill, Red-tide, Green-tide, Sea outfall

- iii). Post development stage (if serious problems occur)

- Technical support for proper coastal restoration

Main Challenges: Long-term prediction of

- Coastal environment change (cf. morphology change)
- the impact of global climate change

Shandong Provincial Key Laboratory Ocean Engineering

Engineering support for the Blue Ocean Economic Development of Shandong Province is one of main objectives of the Key Lab.

- Environmental impact analysis
- Design of coastal & ocean structures
- Prevention of coastal hazards
- Beach protection
- Impact of global climate change
- Development of low CO₂ Ocean Energy
- etc.

Qingdao- a city of ocean science



Qingdao- a city of ocean science



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FIRST INSTITUTE OF OCEANOGRAPHY
STATE OCEANIC ADMINISTRATION

Qingdao- a city of ocean science



Qingdao- a city by the sea



Qingdao- a city with mountains



Qingdao- a city with modern fashion



Qingdao- a city with tradition



Thank You

College of Engineering

Know each other and collaborate