

Marine Pollution Control in China

Hao CHEN, Qingjia MENG

Chinese Research Academy of Environmental Sciences, Beijing 100012, China

**North-East Asian Subregional Programme for Environmental Cooperation
(NEASPEC) Expert Consultation Meeting**

June 27, 2012

Seoul, Republic of Korea

Outline

1

Overview of China's national programme action

2

Actions against oil spill in oceans

3

Actions against marine litter

4

National plans to control chemical pollution

5

Potential future collaboration on transboundary MP

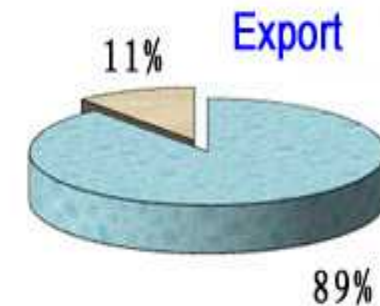
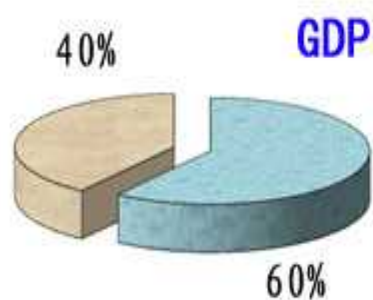
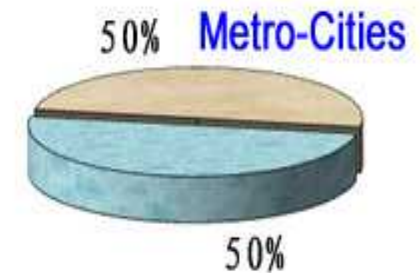
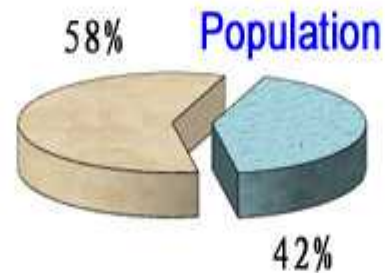
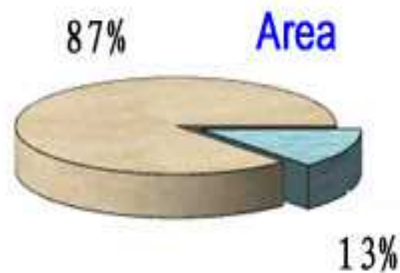


Rapid Growth of China's Coastal Economy

**Inland
Provinces**

VS

**Eleven Coastal Provinces
& Cities**





CNPA Zones

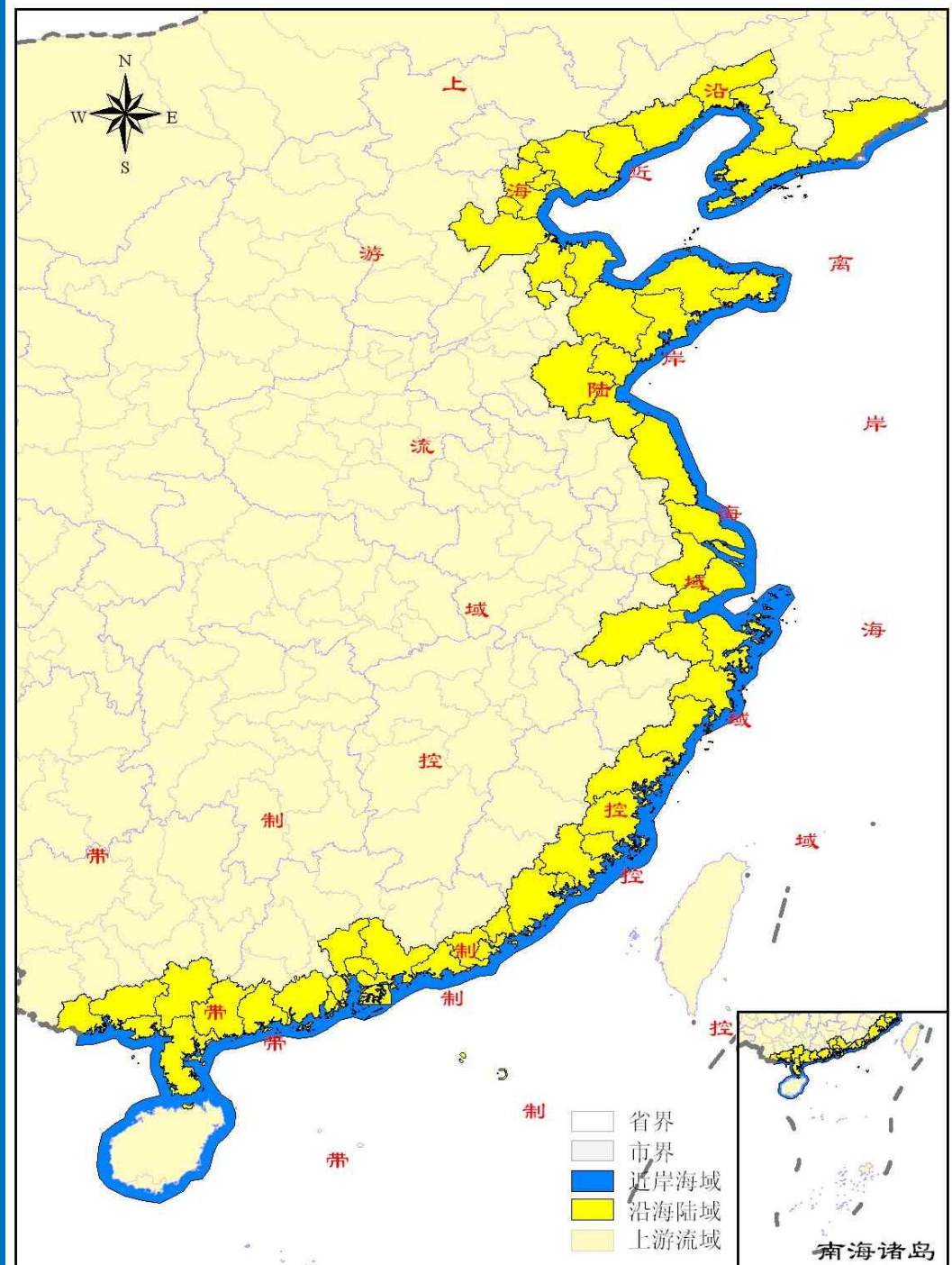
* Four Sea Areas (North to South)

- * Bohai Sea
- * Yellow Sea
- * East China Sea
- * South China Sea

* Four Regions (West to East)

- Upstream
- nearshore
- Coastline
- offshore

11 Provinces/Cities Involved



Marine Pollution	Land-based Pollution	++	++	++	++	++	++	++	++	++	++	++
	Marine Litter				+		+		++		+	+
	Shipping-related Pollution	+	+	+	+	+	+	+	+	+	+	+
	Mariculture Pollution	+	+			++		++		+	++	+
	Oil Spill	+	++	+	++	+	+		+	+	+	+
	Marine Oil Drilling	++	++								+	

Liaoning Province

Hebei Province

Tianjin Province

Shandong Province

Jiangsu Province

Shanghai City

Zhejiang Province

Fujian Province

Guangdong Province

Guangxi Province

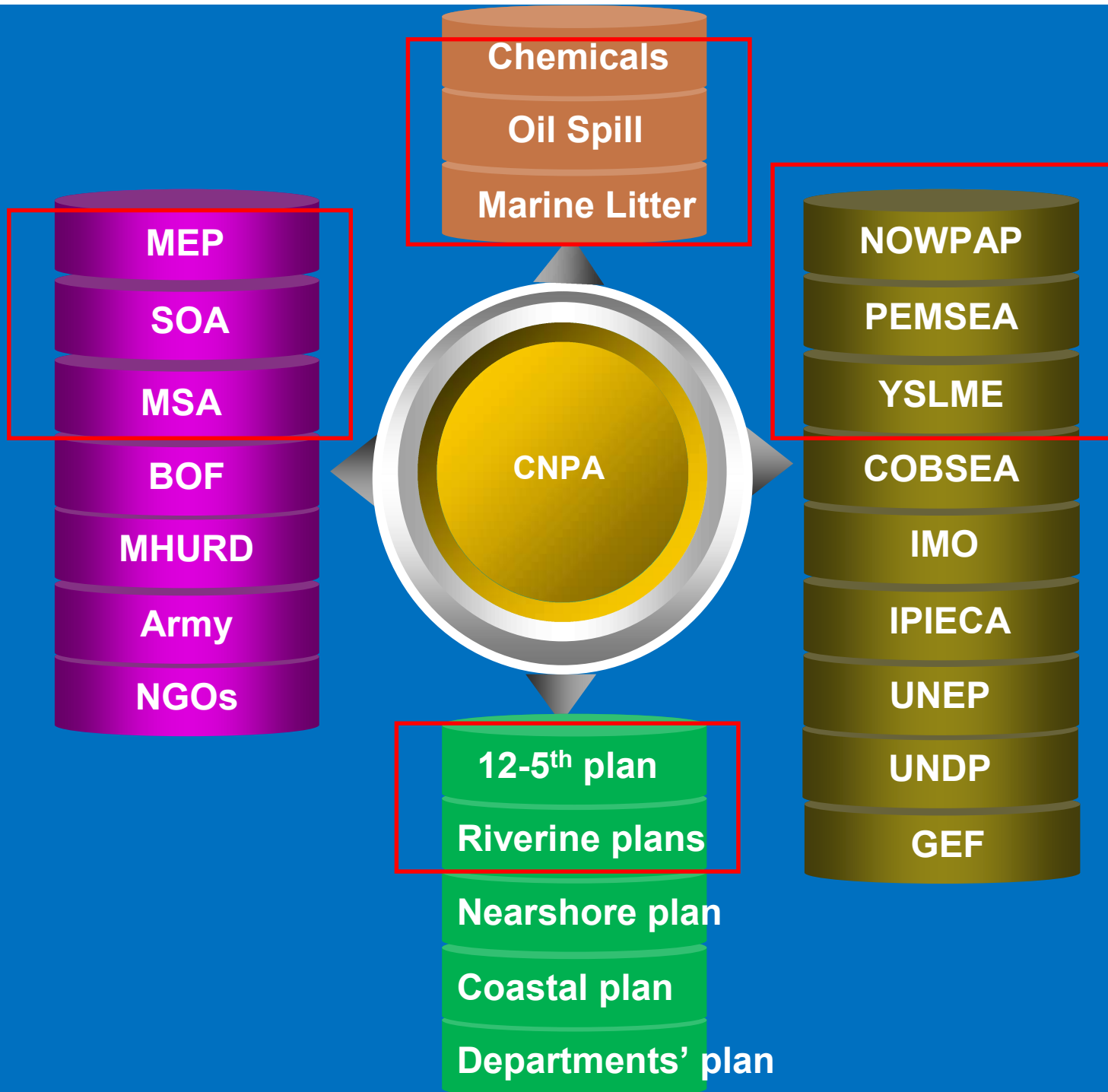
Hainan Province



North

South

source: China's NPA report (internal)

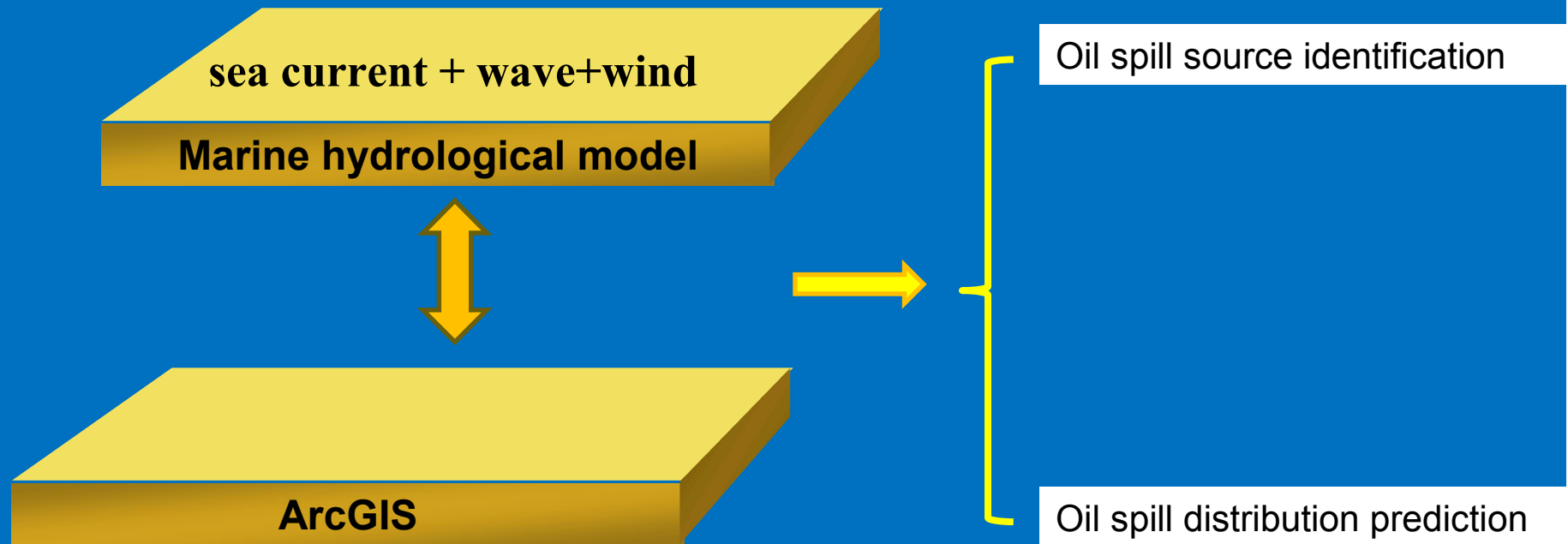


Measures against oil spill

- **Emergency Warning and Prediction of Oil Spill**
- **China's Navigation Satellite System to monitor oil spill**
- **Laws, guidelines and regulations**
- **International Collaboration**

Emergency Warning and Prediction of Oil Spill

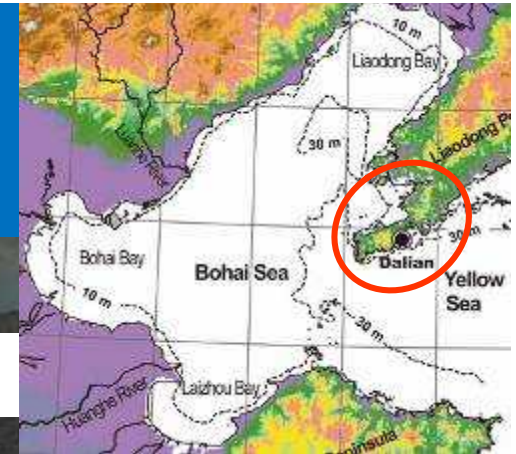
National Marine Data and Information Center



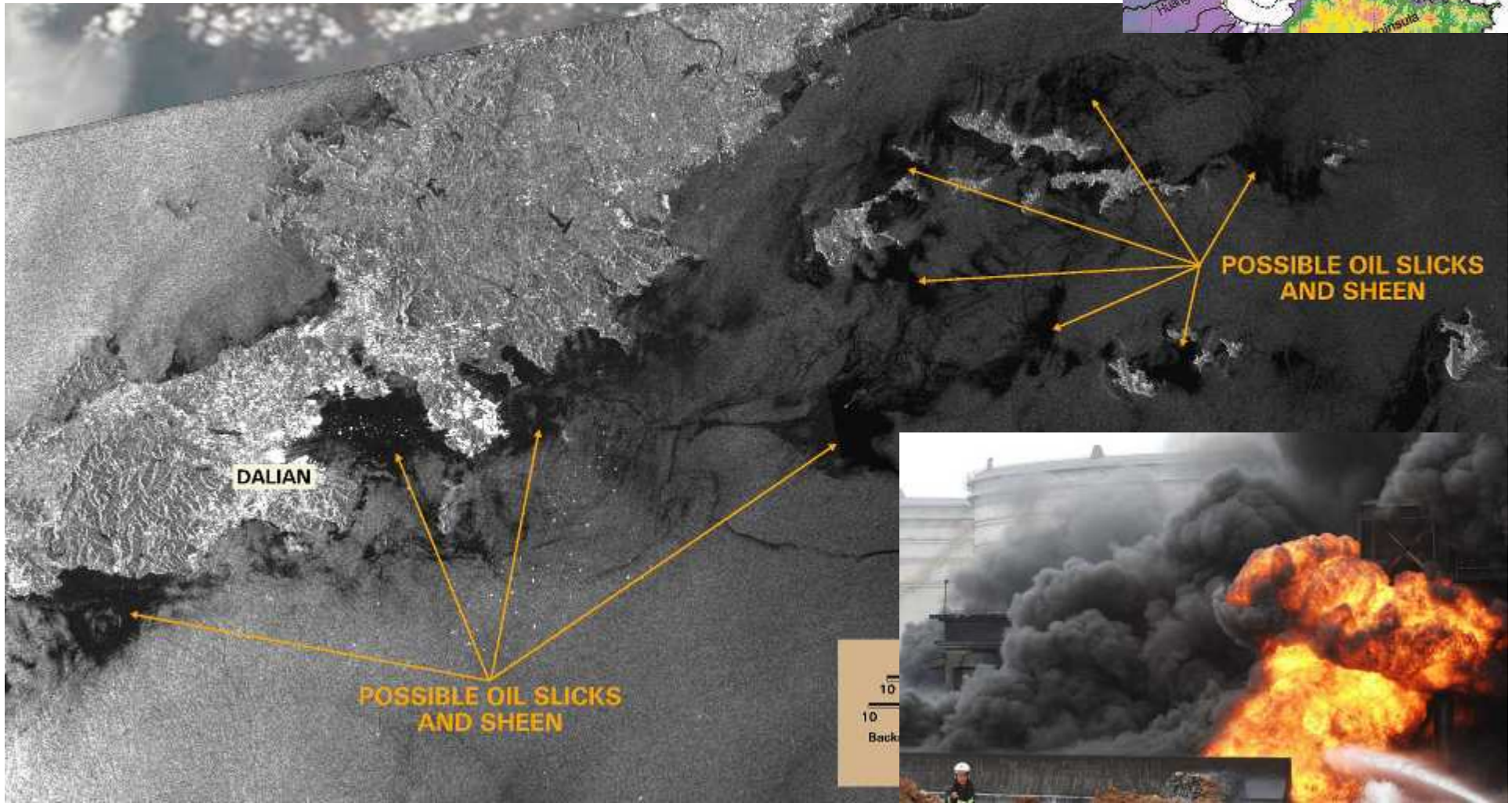
Application: Case 1

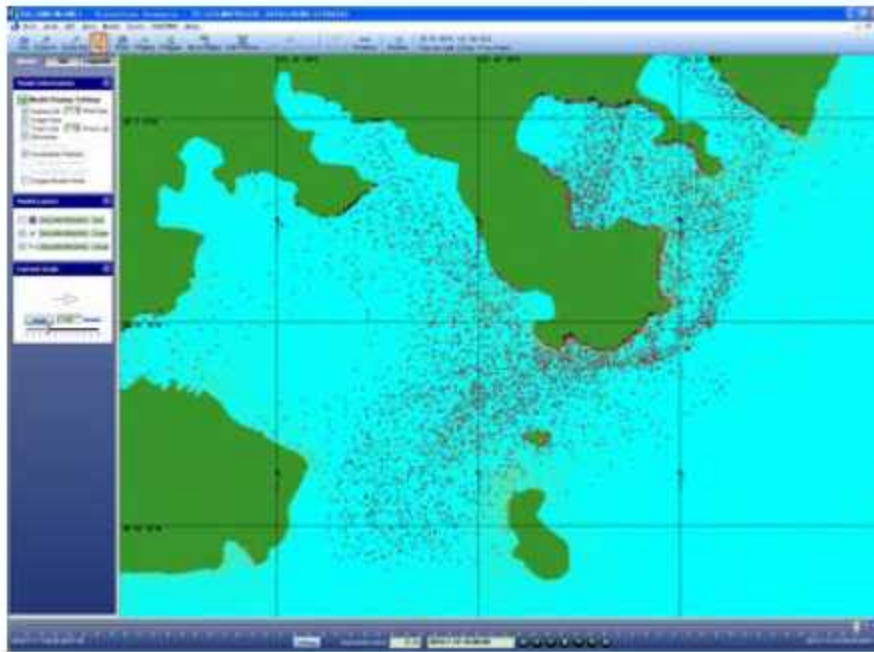


DALIAN OIL SPILL, LIAONING, CHINA

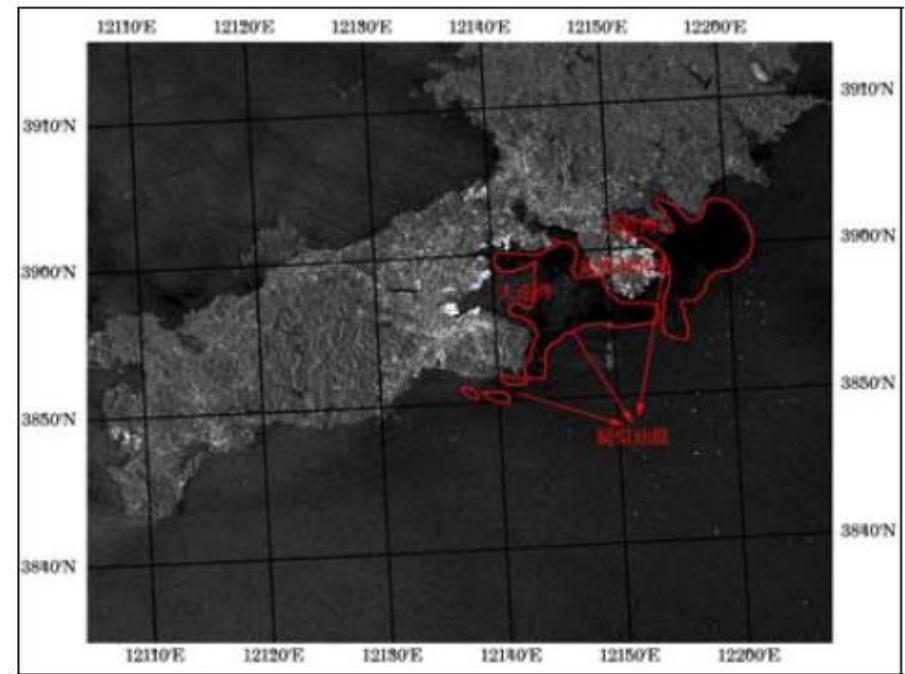


Oil Spill from an Oil Tank Explosion in Dalian, 2010





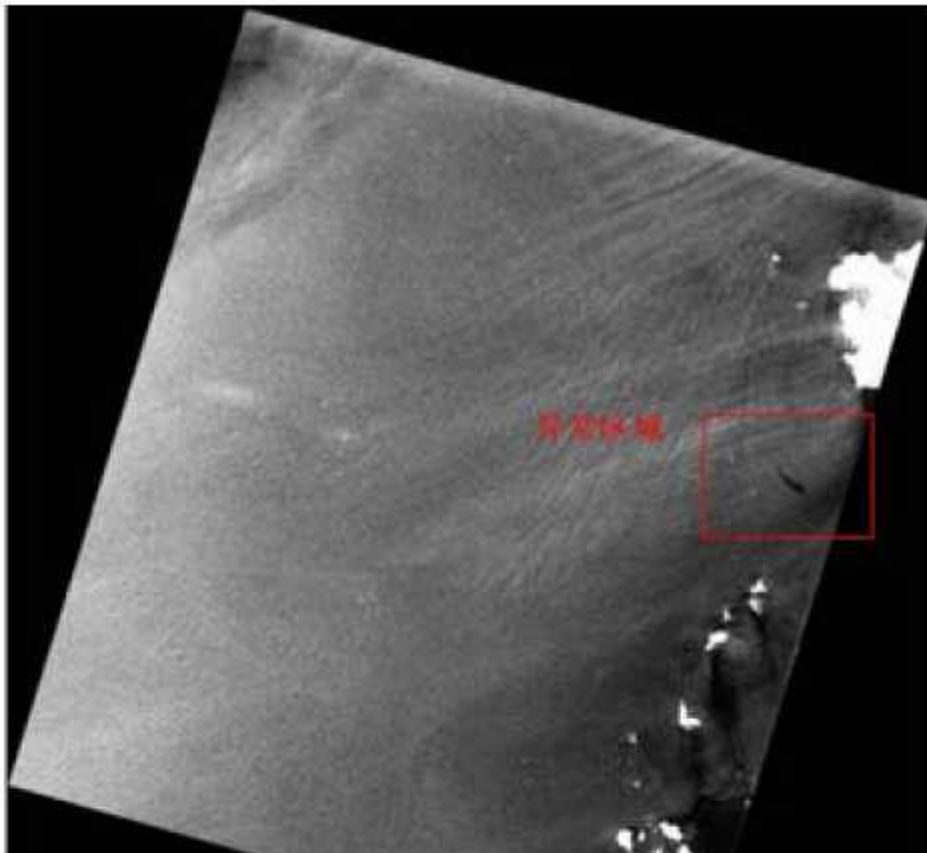
Predicted spilled oil distribution after 72 hours since the accident



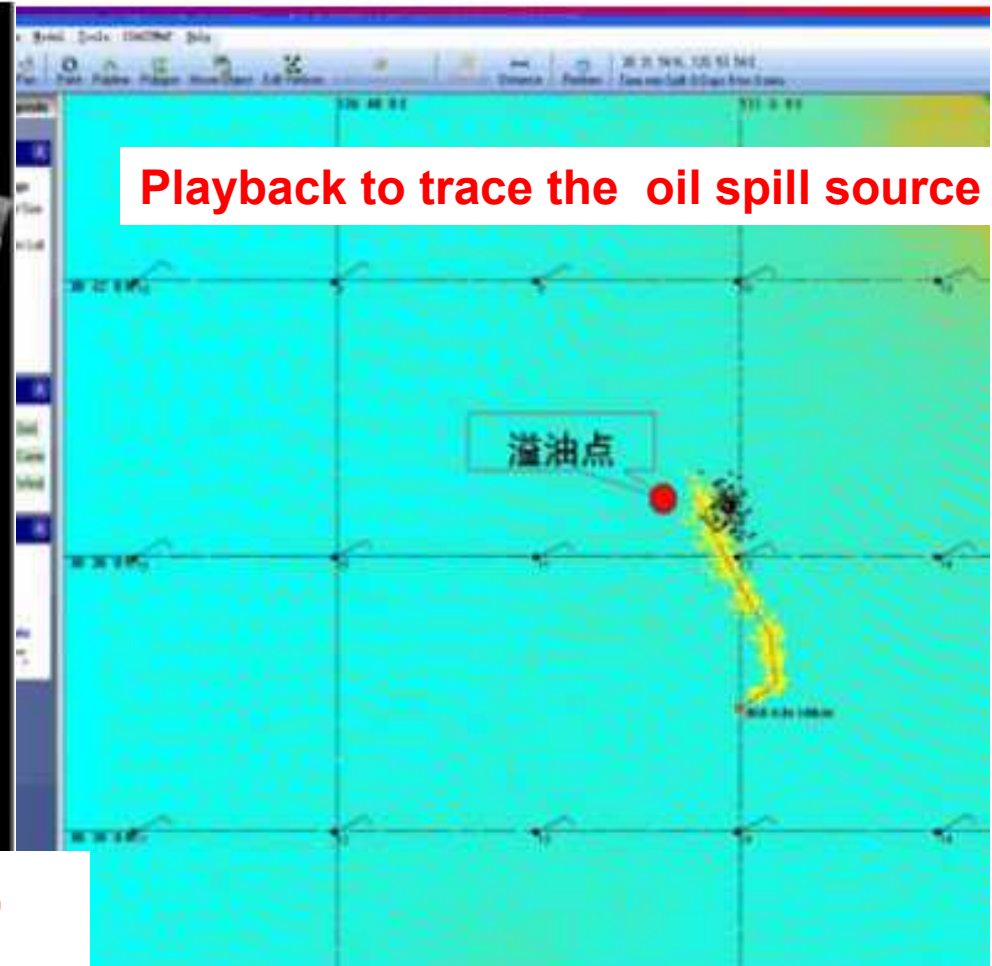
Satellite image after 72 hours since the accident

MARINE SCIENCE BULLETIN, Vol. 30, No. 6, page 713-717, 2011

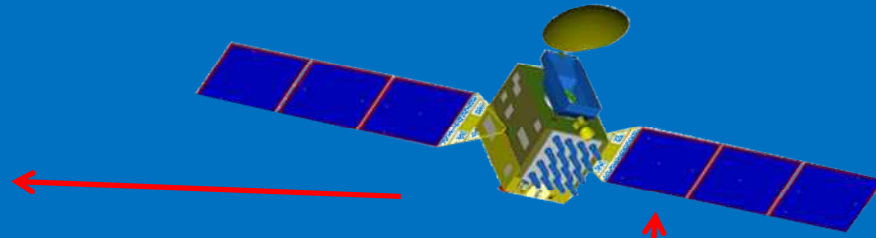
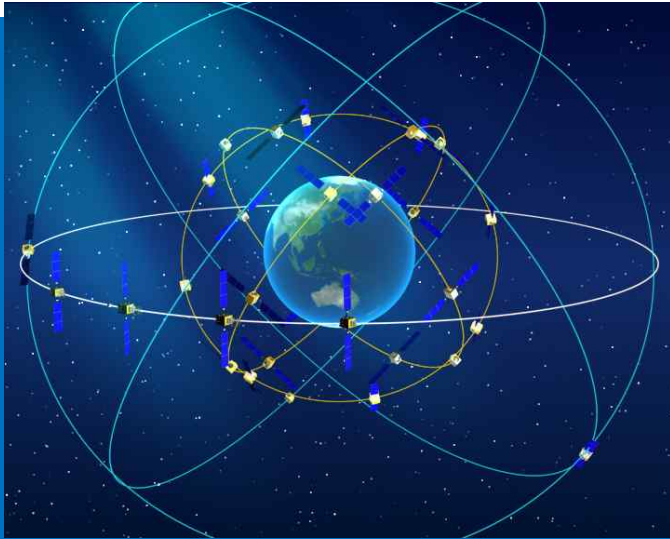
Application: Case 2



Satellite Image in Bohai Sea, A.M. 6:56 ,
April 20, 2010



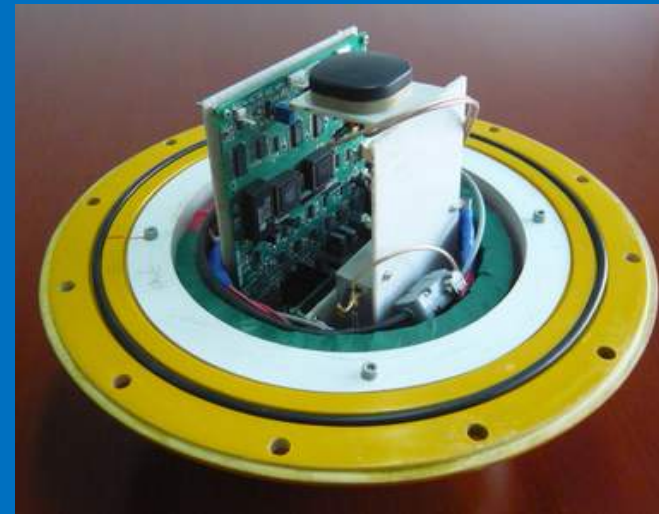
China's BeiDou (COMPASS) Navigation Satellite System



Oil Spill Monitoring Tracer Buoy



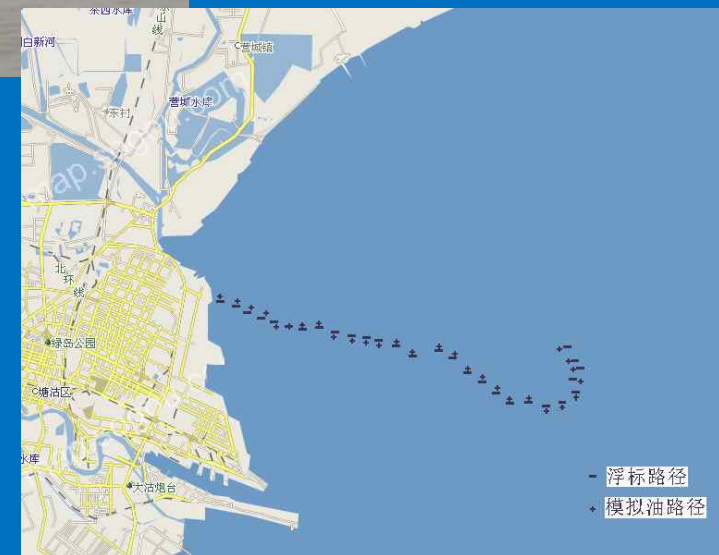
Standard Oil Spill Tracer Buoy



Test and Validation

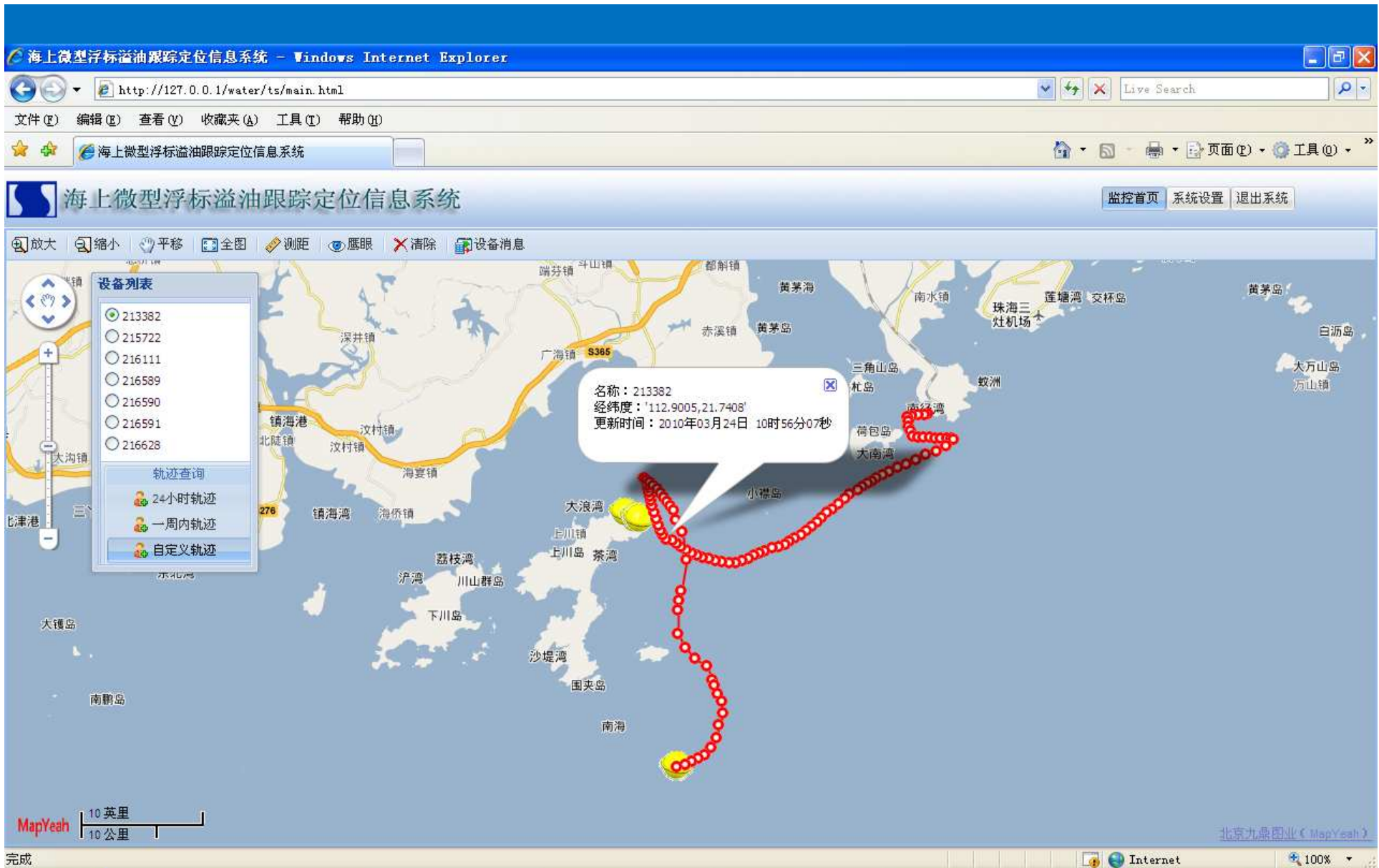


time : 2009.3
location : Tianjin (Bohai Sea)





48-hour tracing in South China Sea, March 2010

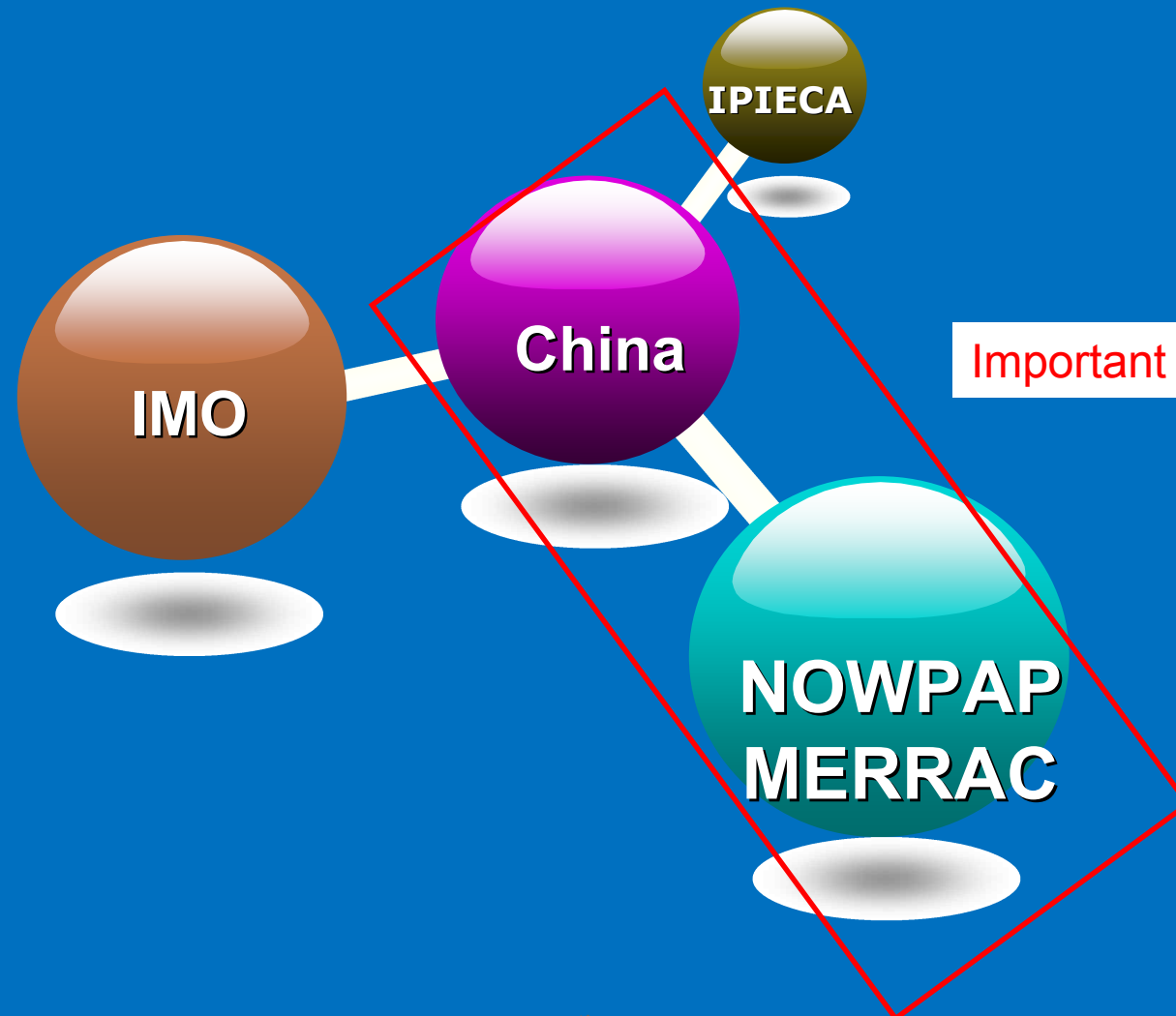


Buoy-based satellite tracing system for oil spill

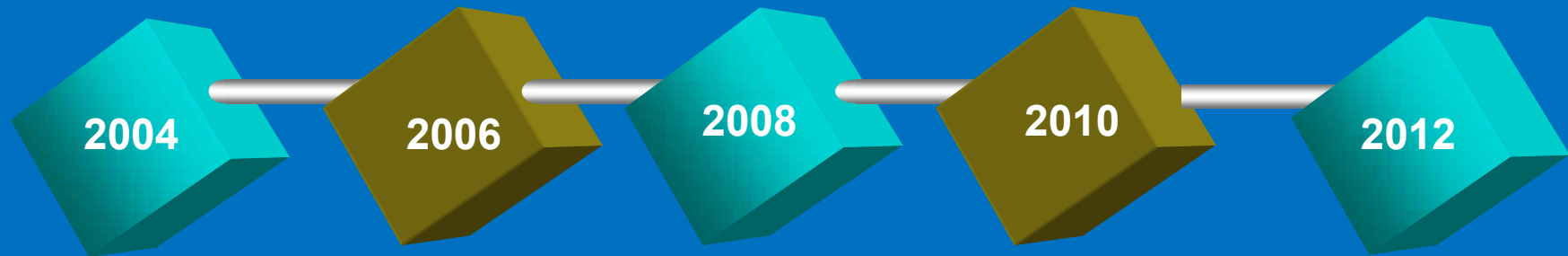
Laws and regulations

- **Marine Environmental Protection Law**
(established in 1982, amended in 1999)
- **Regulations of the People's Republic of China on the Prevention of Vessel-induced Sea Pollution (1983-2009)**
- **Regulations on Administration of Prevention and Control of Pollution to the Marine Environment by Vessels (2010–)** (more related to IMO conventions)
- **A compensation fund from July 2012: 0.3 ¥ (0.05 US \$) per ton of oil the ships carry on each entry (July 2012–, MOF, MOT)**

International Collaborations against oil spill



4-country Joint Action in MERRAC



Oil spill
Memorandum
between
China, Korea,
Japan and
Russia

Oil spill
emergency
drill (**Russia**
and Japan)

Oil spill
emergency
drill (**China**
and Korea)

Oil spill
emergency
drill (Russia
and **Japan**)

Oil spill
emergency
drill (China
and **Korea**)

Case 1

韩国西部沿海发生油轮原油泄漏事故

Dec. 7, 2007

West coastal region of S. Korea

China boat "Hebei Spirit" hit by Samsung No.1



Marine Litter Control

- * **In 2006, “Guideline for marine debris monitoring and assessment” was drafted.**
- * **From 2007, Marine Debris Monitoring and Assessment Program was carried out.**
- * **In 2008, Director-general level consultation meeting on ML**

Marine Litter Control consultation meeting

- September ,2008
- Director-general level
- 5 relevant Ministries and Agencies: Ministry of Environmental Protection, Maritime Safety Administration, Fishery Bureau, State Oceanic Administration and PLA (Navy)
- Exchanged the info. on what have been done
- To build inter-department cooperation mechanism





Fifty survey locations have been set along coastal areas of China.

Monitoring items & survey methods

Monitoring items	Survey methods
Beach debris	Sighting survey/Weight survey
Floating debris	Sighting survey /Trawling survey
Seafloor debris	Diving survey/Trawling survey

The monitoring areas are mainly focused on:

coastal recreational waters

harbors and ports

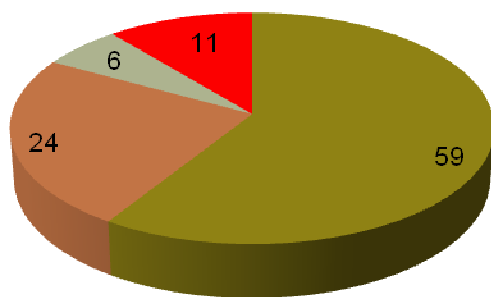
mariculture zones

Marine protection areas

Monitoring time:

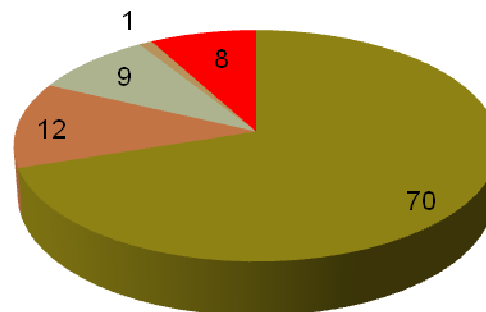
September to October.

sea surface ML



- Coastal activities
- shipping and fishing
- cigarette-related waste
- medical and hygienic waste
- other types of waste

Beach ML



- Coastal activities
- shipping and fishing
- cigarette-related waste
- medical and hygienic waste
- other types of waste

ML Control

```
graph TD; A[ML Control] --> B[Prevent ML from Land-based sources]; A --> C[Shipping-related and fishing-related waste management]; A --> D[Beach and seawater Cleanup];
```

**Prevent ML
from Land-
based
sources**

**Shipping-related
and fishing-related
waste management**

**Beach and
seawater Cleanup**

Land-based Waste Management

- * Effective management of domestic wastes, industrial wastes and medical wastes
- * Reduce the solid wastes that may flow to the rivers and seas



Restrictions to the free use of plastic bags in markets (June 2008–)

- No free use of plastic bags
- Free use of paper shipping bags
- It is estimated that 40 billion plastic bags are reduced per year



Shipping and fishery-related waste management



Inspection of categorization and disposal of ship garbage



Ship garbage reception operation



Separation of solid waste from fishery products



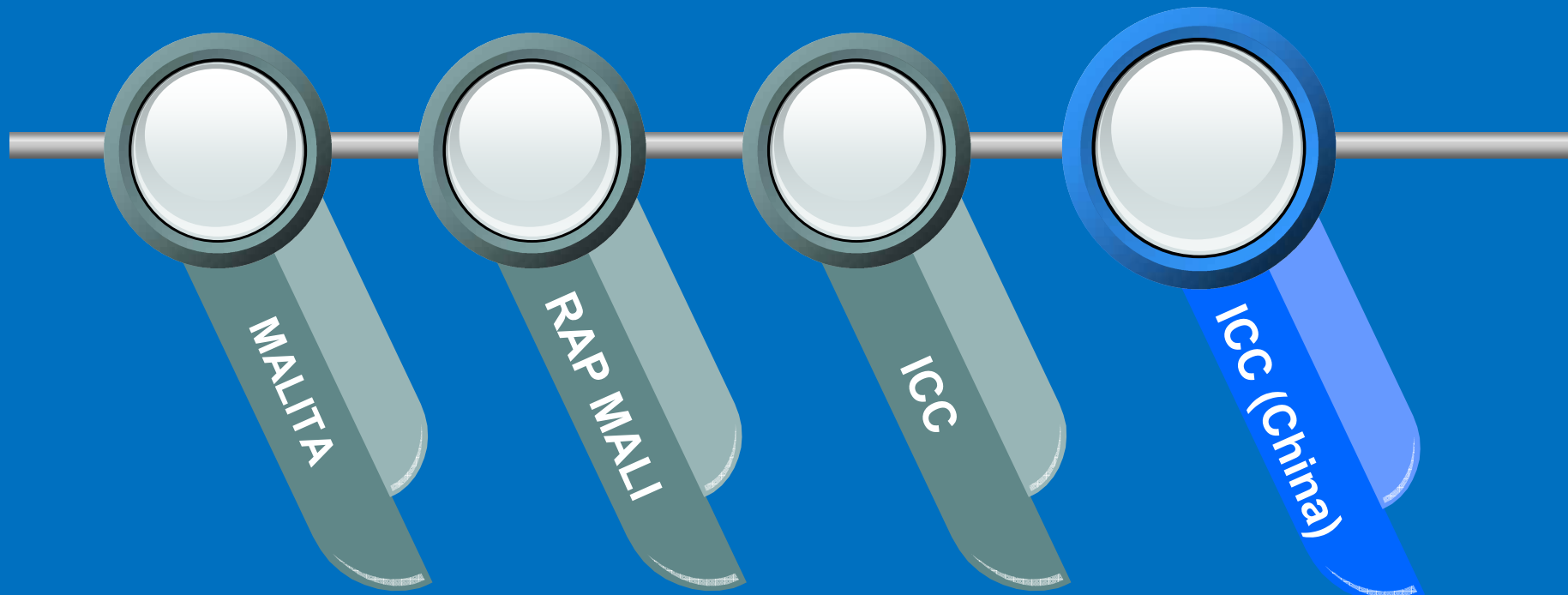
set up waste disposal tanks in fishing boats



Beach and seawater Cleanup

Participation in NOWPAP MALITA and ICC events

2005 → 2007 → 2007 → **2011**



NOWPAP MALITA and ICC events

MEP has organized ML related Departments, NOWPAP related provinces, and NGOs to participate in the NOWPAP ML workshops and activities for several times.



Marine Debris Monitoring & Assessment Guideline

(1) classified based on size

- small debris <2.5 cm (not visible by eye in water), e.g, fragmented plastic
- medium debris > 2.5 cm and ≤ 10 cm, e.g., styrofoam cups
- large debris >10 cm and : ≤ 1 m, e.g., **bleach bottles**
- very large debris >1 m, e.g., derelict fishing net

(2) classified based on material



Plastic



Metal



Cloth



Styrofoam



Wood



Paper



Glass

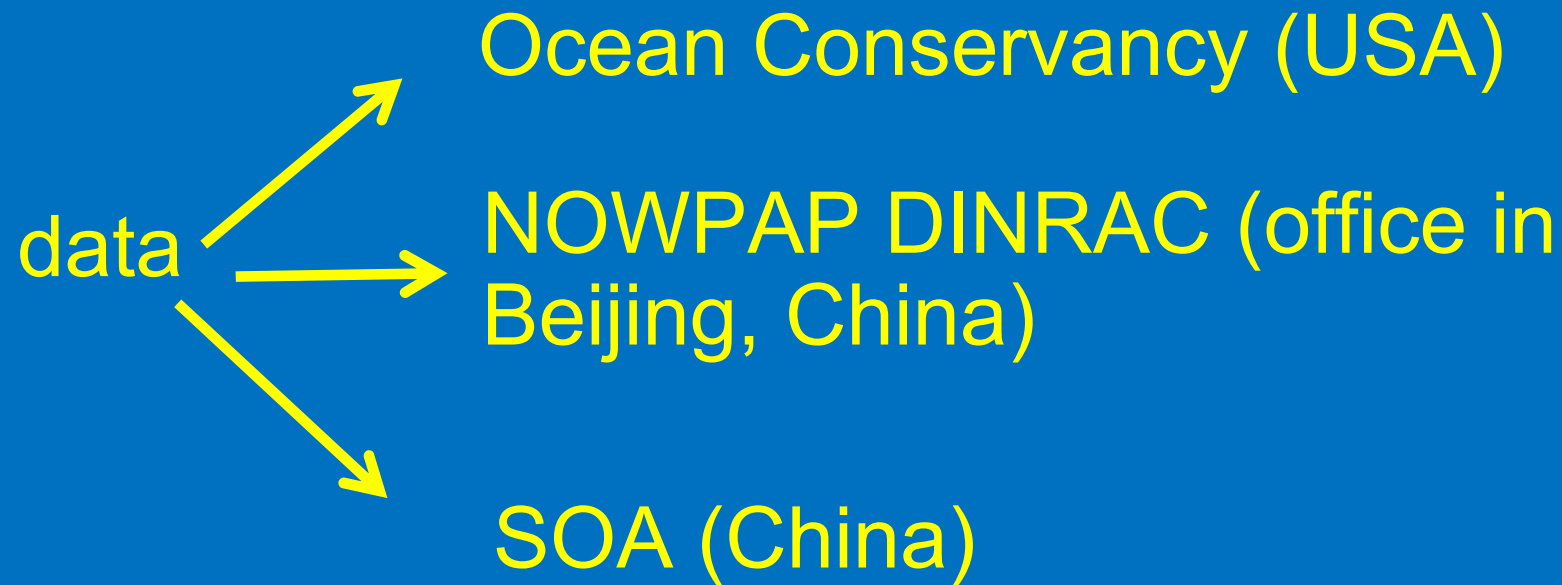


Rubber



Others

ICC cleanup data sharing



Participation in PEMSEA

**PEMSEA phase 1
(1994-1999)**



**Xiamen City (Integrated Coastal
Management; ICM)**

**PEMSEA phase 2
(2000-2007)**



Ten more cities were chosen for ICM

**PEMSEA phase 3
(2009-2011)**

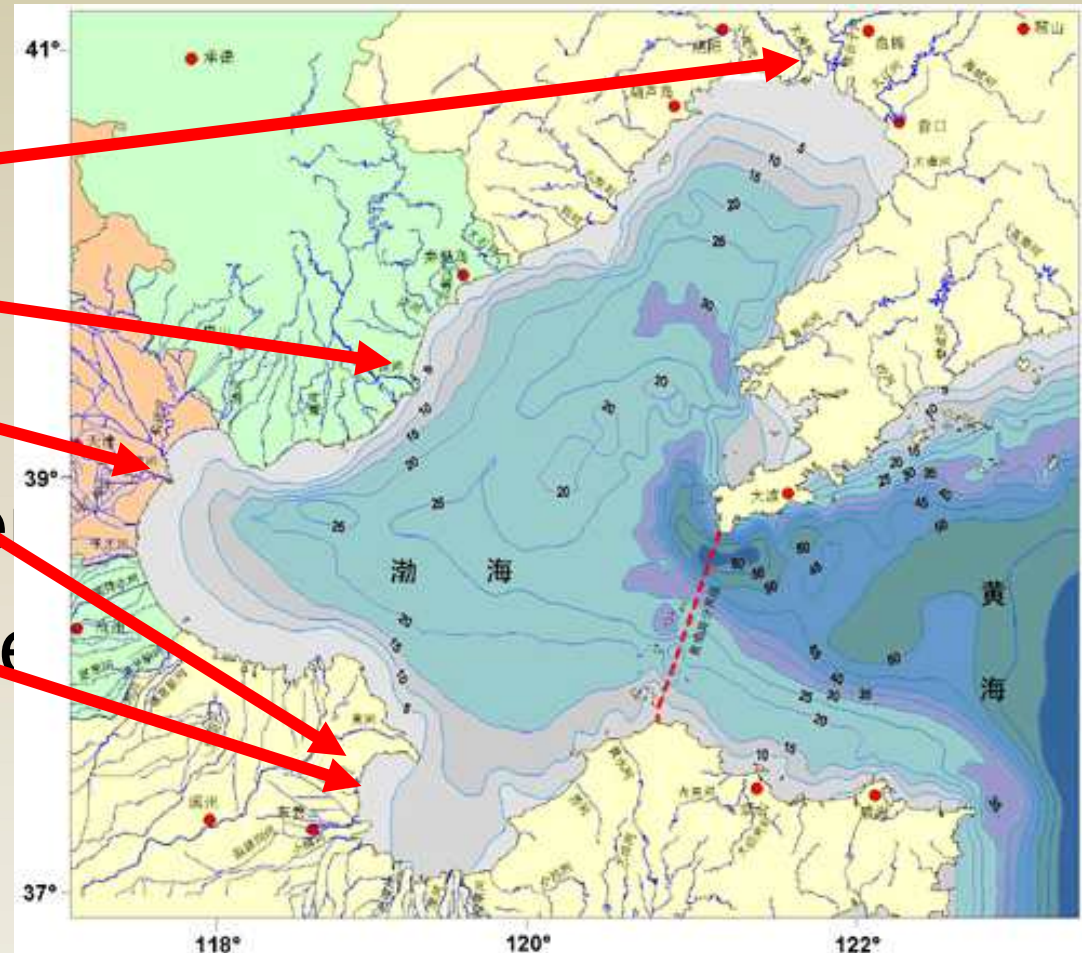


**Five riverine watersheds were chosen for
pollution control and management**

PEMSEA III – IRBCAM Project is the demonstration in China for **Integrated River Basin and Coastal Area Management** focusing on **Pollution Reduction and management in the Bohai Sea.**

- * Dalinghe River
- * Luanhe River
- * Haihe River
- * Guanglihe River
- * Xiaoqinghe River

Duration: 2009 - 2011



Participation in Yellow Sea LME (YSLME)

2005

kick-off the programme between China and Korea

2007

Transboundary Diagnostic Analysis (TDA)

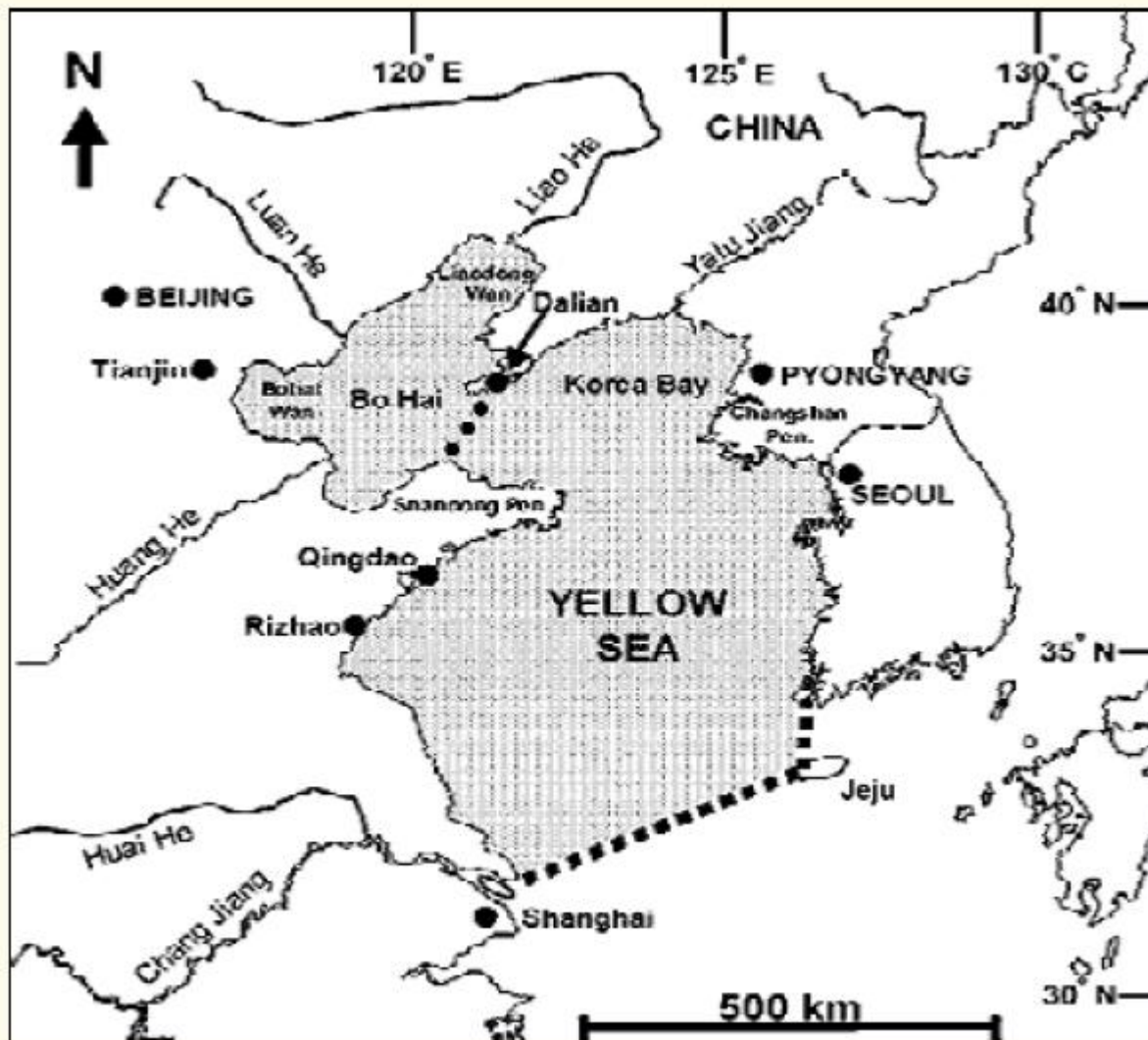
2009

MPA networking in YSLME

2010

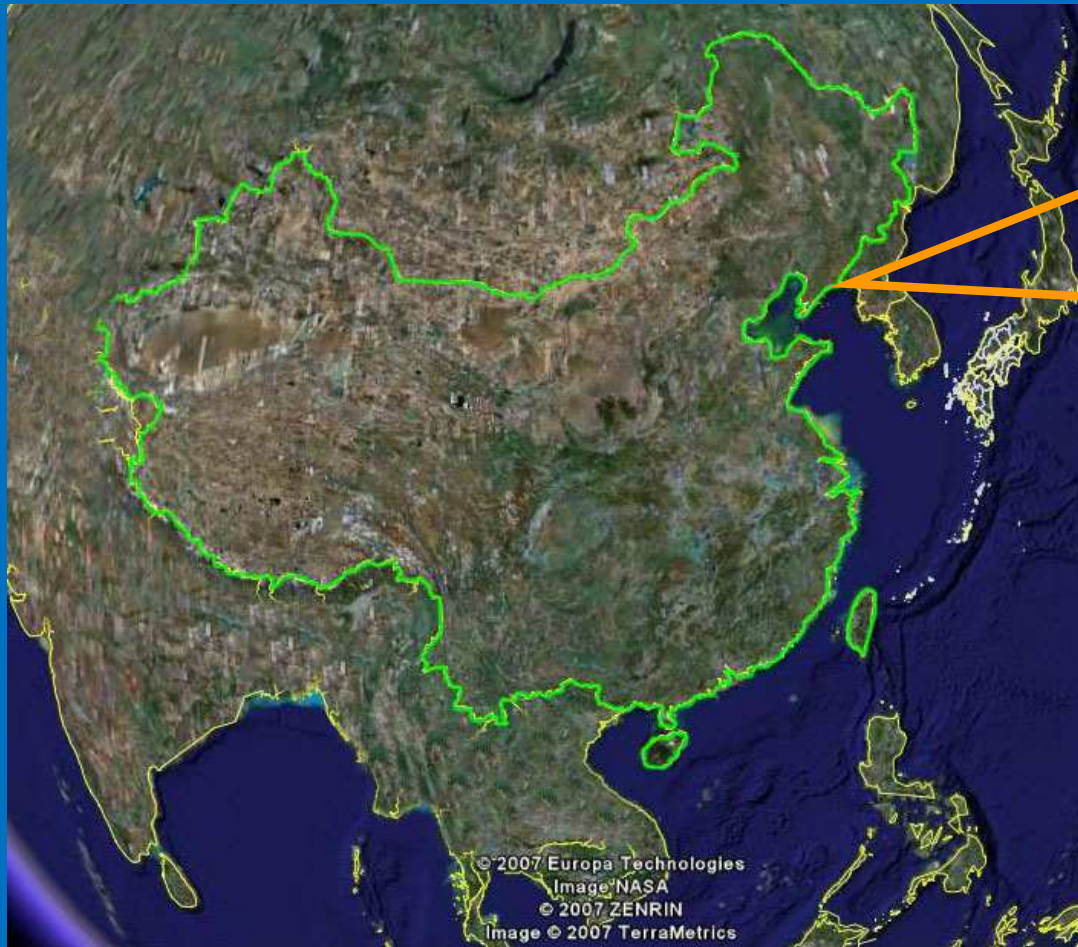
Yalu River MPA

Yellow Sea LME (YSLME)



UNDP/GEF 2007. UNDP/GEF Project: Reducing Environmental Stress in the Yellow Sea Large Marine Ecosystem. Transboundary Diagnostic Analysis, 98 pages.

Participation in YSLM: Yalu River estuary marine protected area (MPA)



located on the northeast coast of the Yellow Sea in Liaoning Province, China, adjacent to Democratic People's Republic of Korea (DPRK).

Yellow River Estuary

Yangtze River Estuary

Bohai Sea

Pearl River Estuary

China's 12-5th Environmental Protection Plan

waste dumping

mariculture pollution

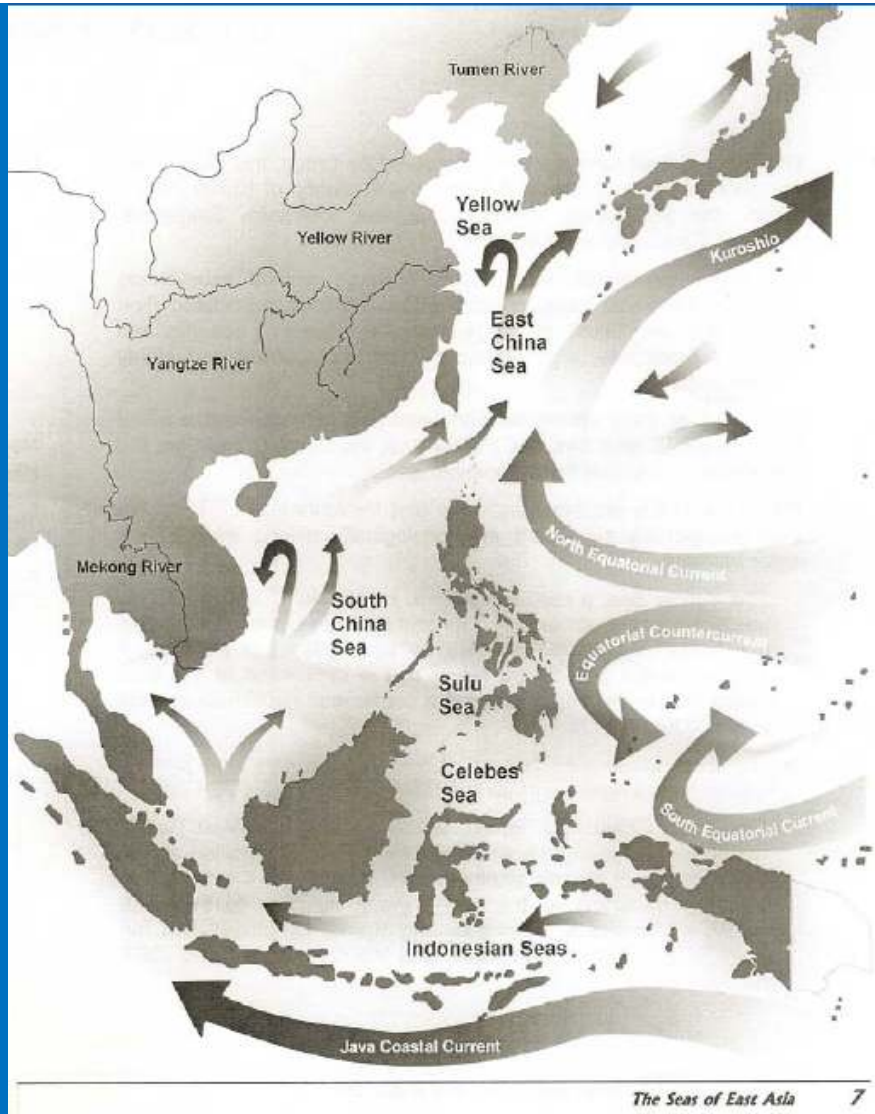
Oil spill

shipboard waste

2011-2015 Plan to Control Pollution in the Middle and Lower Reach of Yangtze River Basin

- ✓ 42 projects in the Yangtze River Estuary (Yellow Sea)
- ✓ 5.189 billion Chinese RMB, equal to 0.837 billion US dollars
- ✓ Expected reduction of chemical oxygen demand (COD) by 51,000 tons
- ✓ Expected reduction of NH₃-N by 9000 tons

Prevent the transboundary marine pollution at Sources



Where from?

Where to?

When?

How to ?

Plans and technology ?

Steve Raaymakers, COBSEA

what the north-east countries need to strengthen...

1

How to collaborate in the framework of international conventions?

2

How to work together with NOWPAP to better deal with transboundary MP?

3

How to better share MP data and information in the framework of regional programme action (RPA)?

Thank You



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