



**中国环境与发展国际合作委员会**

CHINA COUNCIL FOR INTERNATIONAL COOPERATION  
ON ENVIRONMENT AND DEVELOPMENT

以渤海溢油为案例的中国海洋环境管理机制专题政策研究

**China's Marine Environmental Management  
Mechanism Based on the Bohai Sea Oil Spill**

总结报告 **Final Report**

**2012 AGM**

**Dec. 12-14**



# 1. 中国海洋经济发展及其对海洋环境保护的挑战

## Challenges to marine environmental protection in China

### 1.1 中国海洋经济发展加速，海洋开发战略有待完善

Accelerating marine economy development while marine environmental protection strategy to be improved in China

✓发展海洋经济具有坚实基础

A solid foundation for marine economy development

✓海洋开发战略强势推进

Vigorously implemented national marine economy development strategy

✓海洋经济在国民经济中居重要地位

An important role of marine economy in national economy

✓未来海洋经济发展战略有待调整

Future marine economic development strategy to be adjusted

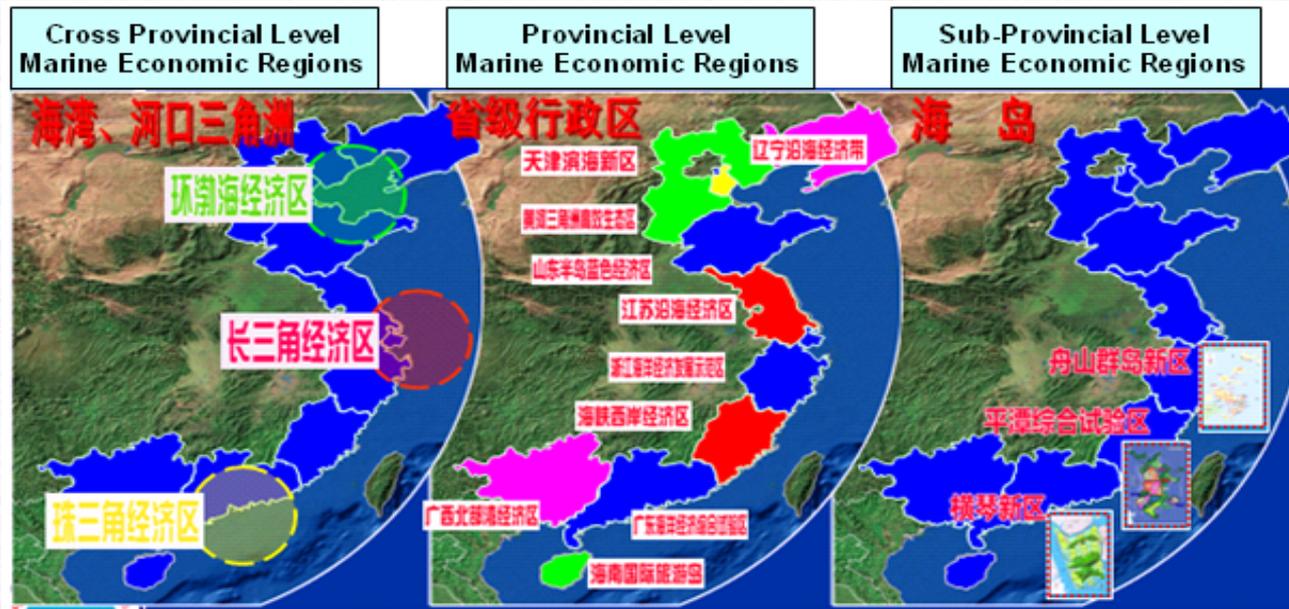


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	Growth(%)	2008	2011	2012	2013	2014	2015	2016	2018	2020
Marine production 9billion	10	17351	22627	24890	27379	30117	33128	36441	44094	53353
GDP(Billion)	8	300670	378758	409058	441783	477126	515296	556519	649124	757138
Proportion of GDP(%)		5.7	5.97	6.08	6.19	6.31	6.42	6.55	6.79	7.05



# 1. 中国海洋经济发展及其对海洋环境保护的挑战

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### 1.2 中国海洋环境问题凸显，呈现加剧趋势

Marine environmental problems are rapidly getting worse

✓海洋产业发展的环境负面效应显著

Significant negative environmental effects of marine industry development

海洋产业部门 Sectors	相对增幅 Degree of Growth rate	环境影响 Impact on environment	环境影响 程度 Degree
海洋渔业 Marine fishery	++	海洋生态系统损失 Loss of marine eco-system	++
海洋石油天然气 Marine oil & gas	+++	海上溢油污染 Spillover	+++
海洋矿业 Marine mining	++++	海底（海岸）破坏、海水污染 Destroy of coast and seabed	++
海洋盐业 Salt processing	+	滨海占地 Occupation of coastal space	++
海洋化工 Marine chemical	++++	向海洋海排污 Discharge to sea	+++
海洋生物医药 marine bio & pharmacy	++++	向海洋海排污 Discharge to sea	++
海洋电力 Marine electricity	+++	滨海（风电）占地 Wind mill occupation of space	++
海水利用 Sea water utilization	++++	可能向海洋海排污 Possible discharge to sea	+
海洋船舶制造 Ship building	++++	滨海占地 Occupation of coastal space	++
海洋工程建筑 Marine engineering	+++	滨海占地 Occupation of coastal space	++
海洋交通运输 Marine shipping	++	海洋、大气排放 Spillover and CO <sub>2</sub> emission	+++
海洋旅游 Marine tourism	++	旅游垃圾 Tourists littering	++

我国海洋产业发展的环境影响

Environmental Effects of China's Marine Industry Development

□ 稳定发展的大规模传统产业和较快发展的中等规模产业活动中发生的事 故将会成为海洋环境灾难的主要根源

The large-scale traditional industries and the rapidly developing medium-scale industries are a main source of marine pollution



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✓海洋经济空间布局的环境压力加剧

Increasing environmental pressure as the marine economy is expanding

环渤海经济区海洋经济活动及环境影响

Environmental Impact of Marine Economic Activities around Bohai Sea

海洋经济 Marine Economic Zone		环渤海 Around-Bohai Sea
海洋生产总值占全国比重(%) Proportion of gross marine production in national total (%)	2008年	36.1
	2009年	37.6
	2010年	34.5
	2011年	36.1
同比增长(%) Year-on-year growth (%)	2008年	0.1
	2009年	1.5
	2010年	-0.1
	2011年	1.1
主要海洋产业 Major marine industry	海洋交通运输、海洋渔业、滨海旅游、海洋油气 Marine transportation, fishery, coastal tourism, oil and gas	
海洋环境影响 Marine environmental impact	陆源污染较重；岸线及海域产业活动密度高，海洋环境压力大 Relatively heavy pollution from land-based source; high density of industry activities in shoreline and sea area; and large marine environmental pressure	

□ 环渤海经济区海洋经济活动以资源和劳动力密集型的传统产业为主，对岸线空间和海域生态环境产生较大的压力

New and traditional industries exert great pressure on the ecosystem and result in serious environmental degradation in the Bohai Sea



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### 1.3 渤海海洋环境污染严峻，呈现复合污染的特征

Many sources contribute to marine pollution in the Bohai Sea

- ✓ 渤海环境污染非常严重，近岸海域污染面积不断扩大，海水中主要污染物是无机氮、活性磷酸盐和石油类  
Especially near-shore areas suffer from the impacts of pollution from both land and the sea. The main pollutants are nutrients and petroleum
- ✓ 渤海环境污染已经从最初的以石油、重金属为主的单一工业污染，逐步向工业污染、生活污染、农业面源污染等复合污染转变  
Industrial pollution such as oil and heavy metals, in combination with pollution from domestic and agricultural non-point sources (such as pesticides, nutrients) are increasingly affecting the Bohai Sea



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### 1.4 渤海海洋污染以陆源为主，海源污染比例增加

Land-based pollution dominate the marine pollution in the Bohai Sea, with an increasing proportion of ocean-based pollution

✓陆域入海污染物排污总量居高不下，部分海区海洋功能严重受损

High total pollution discharge from land-based sources and seriously damaged marine productivity

● 2010年和2011年，沿岸入海排污达标排放次数仅占全年总监测次数的 46%

In 2010 and 2011, the compliance rate from pollution sources along the Bohai coast was only 46% of all the sources monitored

✓海源污染物排放量显现增加趋势，总体污染程度加剧

Increasing pressure from pollution

●生态环境灾害频发

Frequent marine ecological environmental disasters

●部分海域大气沉降通量季节性增大

Increasing atmospheric pollution deposition

●海水富营养化程度不断加重

Severe algal blooms and eutrophication problems



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### 1.5 渤海海洋经济开发与环境污染矛盾激化

More conflicts between economic development and environmental protection

✓海上溢油事故频发，加重海洋环境污染

Frequent oil spill accidents degrade the marine environment

✓海洋油气区污染物排放增加，持续影响水质

Increasing pollutants discharge from marine oil and gas drilling affect water quality

✓海洋固体污染物倾倒增多，严重影响区域环境

More dumping of solid waste seriously affects the marine environment

✓近海养殖污染凸显，极易造成水体富营养化

Increasing pollution from aquacultures in the Bohai Sea increase the problems with eutrophication: algal blooms and oxygen depletion

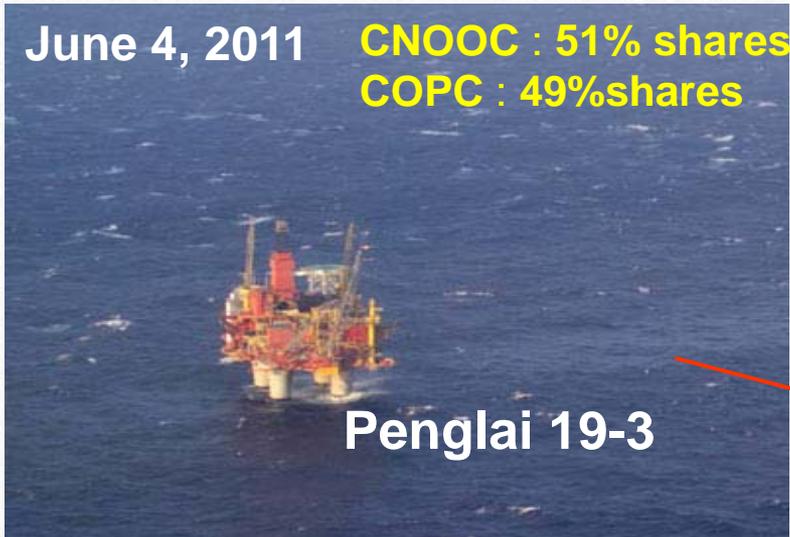
✓船舶与港口作业污染遍布，严重影响近海养殖环境

Pollution from intensive ship and port operations seriously affects the environment for fisheries and aquaculture

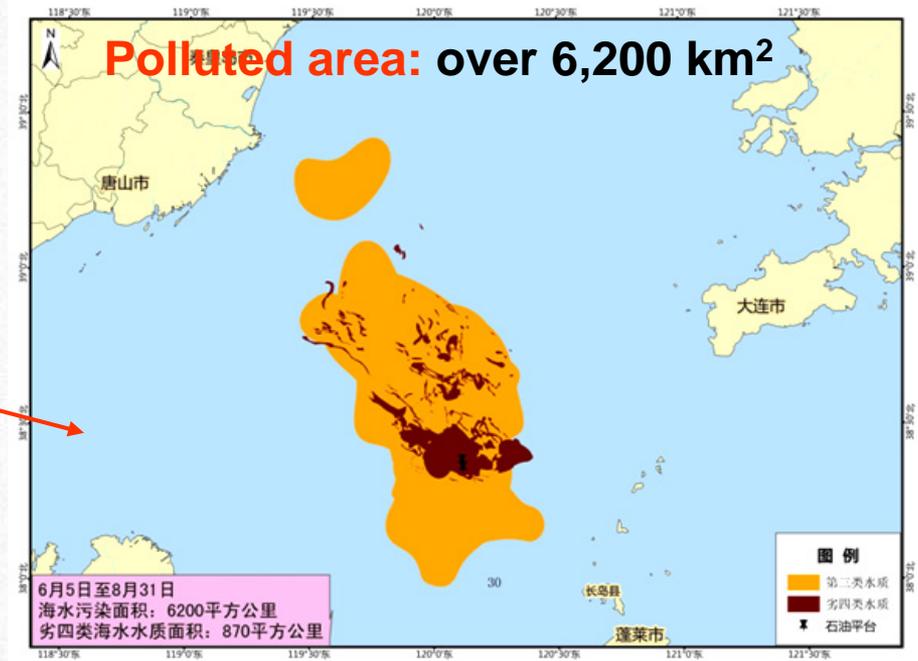


# 2. 海洋溢油事故应对典型案例的教训、经验与启示

## Experiences, lessons and implications from typical cases



渤海溢油 Bohai oil Spill-2011



Total Estimated Released Volumes	Units in cubic meters			Bbls
	WHP-B	WHP-C	Total	Total
Oil and Mineral Oil to Sea Surface	18	97	115	725
Oil Based Mud to Sea Floor	0	416	416	2,620
<b>Total</b>	<b>18</b>	<b>513</b>	<b>531</b>	<b>3,345</b>

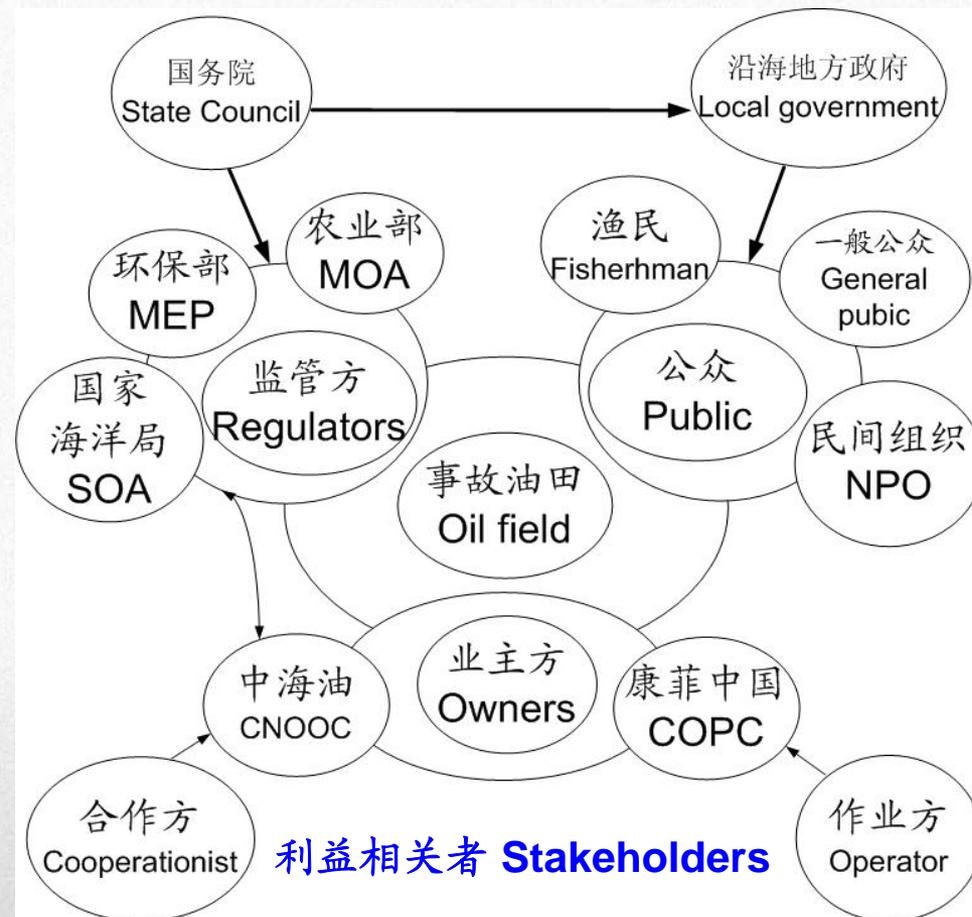
Volumes as of October 31, 2011



## 2. 海洋溢油事故应对典型案例的教训、经验与启示 Experiences, lessons and implications from typical cases

### 2.1 中国海洋溢油管理不畅，应急处置能力不足

Ineffective management of oil spills and poor emergency response capacity in China



- ✓ 信息披露不及时，不充分  
Inadequate and late information disclosure
- ✓ 监管不力，职责缺失  
Ineffective supervision and no clear responsibilities
- ✓ 应急处置不力，反应迟钝  
Insufficient emergency response and slow reaction
- ✓ 处罚不力，赔偿过低  
Light punishment and low compensation
- ✓ 执法不到位，法律规范不完善  
Ineffective law enforcement and incomplete laws and regulations



## 2. 海洋溢油事故应对典型案例的教训、经验与启示 Experiences, lessons and implications from typical cases

### 2.2 美国海洋溢油管理制度齐全，应急处置迅速

#### More effective management of oil spills and rapid emergency response in USA

✓事故应急处置迅速有效

#### Quick and effective emergency responses

- 应急响应速度快  
Emergency response is quick
- 采用多种技术清除和防止漏油  
Multiple technologies were used to remove and prevent oil leakage
- 积极吸收志愿者协助  
Participation of volunteers was encouraged
- 积极推进体制改革和补救措施  
System reforms and development of remedial measures were actively promoted

✓海洋溢油应急管理制度完善

#### Complete emergency management system for marine oil spill

- 建立了国家、区域和地方的各级应急指挥和反应系统  
Emergency command and response systems for all levels were established
- 建立了溢油清污基金制度  
A system of oil spill clean-up funds has been established
- 实施了溢油清除协会会员制度  
The membership system of oil companies in oil spill clean-up associations has been implemented



Deepwater Horizon Oil Spill -2010



## 2. 海洋溢油事故应对典型案例的教训、经验与启示 Experiences, lessons and implications from typical cases

### 2.3 挪威海洋溢油管理体系完善，应急处置得力

#### Effective oil spill management and emergency response in Norway



Statfjord Oil Spill -2007

#### ✓海上油气开发管理制度有效

##### Effective marine oil and gas exploitation management system

- 海上油气开发实行了一体化管理制度

Integrated marine oil and natural gas exploitation management system

- 石油生产排污实行了许可制度

Pollutant discharging permit system for oil production

- 建立了溢油事故防备和应对明确的责任人制度

The production company is always fully responsible for accident prevention emergency response and compensation for damage

#### ✓海洋溢油管理体系完善

##### National oil spill management system integrated with other countries in the region

- 应急计划充分保障了应急资源的共享

Emergency plans ensure the sharing of all available emergency response resources

- 国家溢油事故防备和应急预案体系完善

National oil spill prevention and emergency plan system functions well

- 溢油事故防备和应对组织实现了专业化

Professional organizations for oil spill prevention and response has been founded



## 2. 海洋溢油事故应对典型案例的教训、经验与启示 Experiences, lessons and implications from typical cases

### 2.4 高度重视完善海洋溢油管理制度，加快构建效率效益双高的应急处置模式 More emphasis on oil spill management mechanism and emergency response with efficiency and effectiveness

✓ 国外通过相关法律明确规定了溢油应急管理制度

Sufficient oil spill emergency response mechanisms must be available and should be clearly specified in relevant laws

- 内容齐全

The legal contents are relatively complete

- 法律制定建立在高度概括性、抽象性的概念基础之上

Legislation is general and covers all types of incidents involving spills

- 精细化立法保证了法律的实施

Rules and guidelines cover details to ensure its applicability

✓ 国外海上溢油应急管理对口部门主管，相关部门协调配合

One authority has the full responsibility with cooperation from other relevant departments as required

✓ 国外应急处置模式重视效率与效益的结合

Emergency response emphasizes the combination of efficiency and effectiveness



## 2. 海洋溢油事故应对典型案例的教训、经验与启示 Experiences, lessons and implications from typical cases

### 2.5 加快健全国家海上溢油管理体系，全面提高应急处置能力 China's offshore oil spill emergency management must be improved

✓ 国外溢油应急管理体系健全

Oil spill emergency management in several other countries is more efficient and effective

✓ 国外溢油应急管理机制通畅

Foreign oil spill emergency management mechanisms are built on mutual agreements and cooperation

• 应急防备和响应：企业是第一位的责任人

The operator is always fully responsible for both preparedness and response

• 信息报告与发布：作业者需要向主管部门主动报告

The operator is always required to immediately report to the authority

• 海洋生态损害赔偿：生态损害赔偿及油污基金制度比较发达

The operator should cover the ecological damage compensation and fund the response (clean-up) mechanism

• 公众参与：重视民间和社会力量参与

Great attention is paid to civil and social participation

• 管理技术更新：油气生产相关企业持续投入资金

Oil and gas enterprises should pay for the necessary research and technological development



### 3. 中国海洋环境管理的问题及其根源

## Marine environmental management issues and root-causes

### 3.1 海洋环境管理严重滞后

#### Outdated marine environmental management in China

✓海洋环境管理政出多门，效率低下

Many departments involved in marine environment management and low overall efficiency

- 缺少国家海洋发展与海洋环境总体规划

China lacks a national general plan for the development and protection of marine environment

- 涉海环境法律与国务院海洋环境管理职能分工的“三定方案”之间存在不协调

The marine-related environment laws are not fully consistent with the “*Three Provisions*” issued by the State Council



### 3. 中国海洋环境管理的问题及其根源

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### 3.1 海洋环境管理严重滞后

#### Outdated marine environmental management in China

#### ✓突发事件应急管理机制不畅，效益不高

Ineffective and inefficient emergency management mechanism to deal with accidents

- 尚未建立应对特别重大海洋环境突发事件的国家专项应急预案和应急管理机构

China has not set up a national special emergency response plan and emergency management institution for serious marine environment incidents

- 缺少专门的部际、省区际协调机构以及环境应急管理机构

There is no specific inter-ministry and inter-provincial coordination and management authority to deal with environmental emergencies

#### ✓海洋环境管理制度不健全，执法不力

Incomplete marine environment management system and ineffective law enforcement

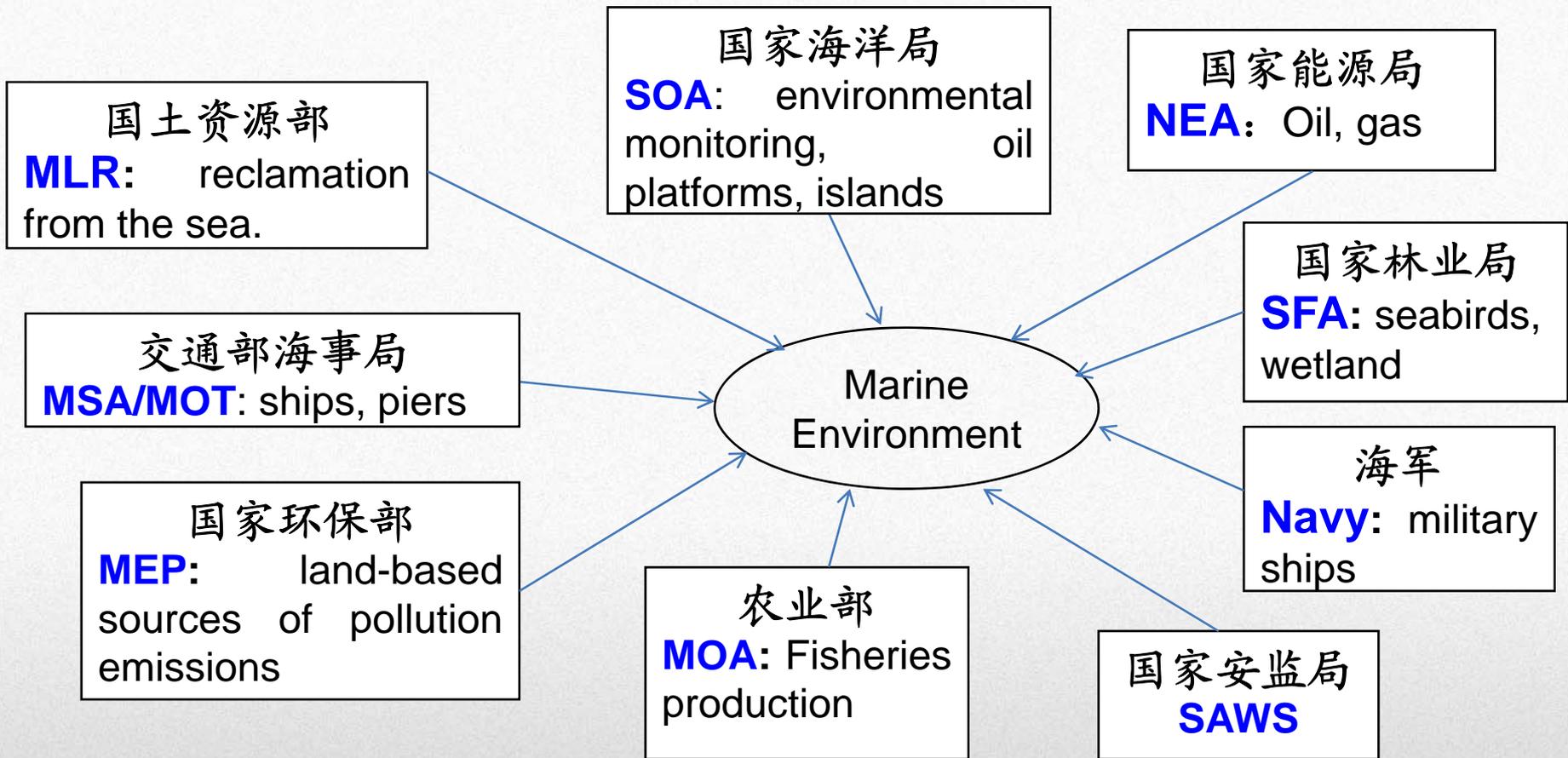


### 3. 中国海洋环境管理的问题及其根源

## Marine environmental management issues and root-causes

#### 海洋环境管理政出多门

Multi-sectoral departments related to marine environmental management





### 3. 中国海洋环境管理的问题及其根源

## Marine environmental management issues and root-causes

#### 3.2 重海洋经济发展，轻海洋环境保护

More emphasis on short-term economic exploitation of offshore resources while less attention to marine environmental protection

✓ 国家重视海洋经济发展，放松了对企业环境责任的管制

More emphasis on marine economy development and less on effective regulation of the environmental performance of the offshore industry

✓ 国家轻视海洋环境保护，科技支撑能力不足

Inadequate attention to marine environmental protection planning and management practices, and insufficient supporting capacity of science and technology



## 4. 改进中国海洋环境管理的政策建议

### Policy recommendations

#### 4.1 加快编制国家海洋开发与环境保护总体规划

Speed up the formulation of an integrated national marine development and environmental protection strategy

✓由国家发展和改革委员会牵头，会同国家环保部、国土资源部、国家海洋局、交通部海事局、农业部渔政局等涉海部门以及沿海省市区政府部门，推动制定国家海洋开发与环境保护总体规划，提出海洋开发与海洋环境保护关系的基本政策和策略

Led by NDRC, with MEP, MLR, SOA, MOT (MSA), MOA and coastal provincial governments, a national master plan for marine development and environmental protection should be developed

●深度整合各沿海各省市区涉海发展战略规划

Further integrate marine development-related strategic plans for coastal and offshore areas in the various provinces

●梳理并规范主要涉海产业发展与布局规划

Develop a national master plan for the development of the main marine industrial sectors



## 4. 改进中国海洋环境管理的政策建议 Policy recommendations

### 4.2 建立国家海上重大环境事件应急预案体系

Establish a National Contingency Plan (NCP) including the organizational set-up for managing such a plan

- ✓ 国家环境保护部牵头，会同国家海洋局、国家安全生产监督管理总局、交通部海事局、农业部渔业局等部门，共同编制“国家海上特、重大环境事件应急预案”，使其作为“国家专项

应急预案”，或者整合和补充现有相关部门预案并上升为国家专项应急预案

Led by MEP, with SOA, SAWS, MSA of MOT and the Fishery Administration of MOA, a NCP should be jointly compiled

- ✓ 由各涉海部门和沿海省区负责，各自编制“海上环境突发事件应急预案”

The marine departments and coastal provinces/districts should compile emergency response plans for marine environmental events

- 针对各级各类可能发生的海上环境事件和所有危险源而制订的专门应急预案和现场应急处置方案

Include special emergency response plans and on-site emergency handling plans

- 特别明确具体组成与相应责任

Define specific institutional responsibilities of organizations

- 特别强调应急响应的高效率和应急处置的高效益

Pay special attention to the efficiency of emergency response and effectiveness of emergency handling



## 4. 改进中国海洋环境管理的政策建议 Policy recommendations

### 4.3 全面协调涉海环境基本法律与海洋环境行政管理职能关系 Harmonize marine-related national environmental laws and marine environmental administrative functions

- ✓调整国务院“三定方案”  
Modify the State Council's government organization and responsibility regulations
- ✓在环境保护部新增设“环境应急与环境保护协调司”，使其承担起全国环境应急事件的管理职能，以及全国环境保护中的环境保护部主管与各分管部门之间的协调职能  
Set up a new Department of Environmental Emergency and Environmental Protection Coordination within MEP
- ✓在预防理念下完善有关海洋环境保护分管部门职责，构建有效的部门间管理协调机制  
Establish an effective inter-departmental coordination mechanism for marine environmental management by enhancing the responsibilities of relevant departments following the principle of prevention



## 4. 改进中国海洋环境管理的政策建议 Policy recommendations

### 4.4 健全海洋环境管理立法

Harmonize marine-related national environmental laws and marine environmental administrative functions

- ✓完善海上油田总体开发方案的编制审批与实施监督的制度规范  
Improve the institutional and regulatory system for the approval and supervision of overall off-shore oil field development planning
- ✓加强石油开发作业中污染防治与安全生产监督管理制度的实施  
Strengthen the implementation of pollution prevention control and safe production regulation in oil development
- ✓完善信息公开制度  
Improve the information disclosure procedures
- ✓完善生态损害评估及赔偿制度  
Improve the ecological damage assessment and compensation system
- ✓建立和健全应急处置费用负担制度  
Establish and improve the mechanisms to recover the cost for maintaining emergency response



## 4. 改进中国海洋环境管理的政策建议 Policy recommendations

### 4.5 强化海洋环境管理执法

#### Strengthen law enforcement of marine environmental management

- ✓通过立法授权和国务院授权，加强国家海洋主管部门的海洋环境保护执法监督管理能力，建立国家环境保护行政主管部门的海洋环境保护行政督察制度和执法体系  
Through legislation and State Council authorization, strengthen the enforcement and supervision capacity in the marine environmental protection of SOA and establish a system for the administrative supervision of the marine environment and law enforcement of MEP
- 组建统一的海上执法队伍  
Establish a unified offshore law enforcement team
- 建立国家海洋环境行政督察制度和执法体系  
Establish China's marine environment administrative supervision and law enforcement system
- 加强海上能源开发活动环境影响评价制度执行情况的监督检查  
Strengthen the supervision of the environment impact assessment system for marine energy development activities



## 4. 改进中国海洋环境管理的政策建议 Policy recommendations

### 4.6 强化涉海企业环境责任与环境风险防范能力

Enhance corporate environmental responsibility and improve environmental risk prevention capacity

- ✓ 明确规定作业者未编制应急计划的责任以及作业者对应急计划作适时修改的义务  
Express the responsibility of operators for developing and complying with the emergency response plan and revising the emergency response plan as necessary
- ✓ 制定一整套可操作的相关涉海企业准入、作业以及灾害应对规范  
Develop applicable specifications of appropriate disaster response for operators engaged in exploration/production
- ✓ 加强涉海企业环境保护的意识和责任  
Strengthen corporate environmental awareness and responsibilities
- ✓ 强化涉海企业环境风险防范  
Emphasize the prevention of environmental risk from marine-related enterprises



## 4. 改进中国海洋环境管理的政策建议 Policy recommendations

### 4.7 强化海洋环境管理科技支撑能力建设

Strengthen capacity building of science and technology in marine environmental management

✓加强海洋环境管理科技专项研究

Strengthen research, technology development and monitoring related to marine environmental management

✓加强海洋溢油应急管理技术专题研究

Strengthen special studies on oil spill emergency management technologies

THANKS!

