

# From Local Demonstration to Regional Partnership: Integrated Coastal Management Experiences in Xiamen

地方から地域へ：中国・アモイの総合的な沿岸管理

Mr. Lin Huaiyuan

Vice Director of Xiamen ICM Project Management Office, P.R. China



18 July, 2008

# “International Garden City on the Sea” : About Xiamen



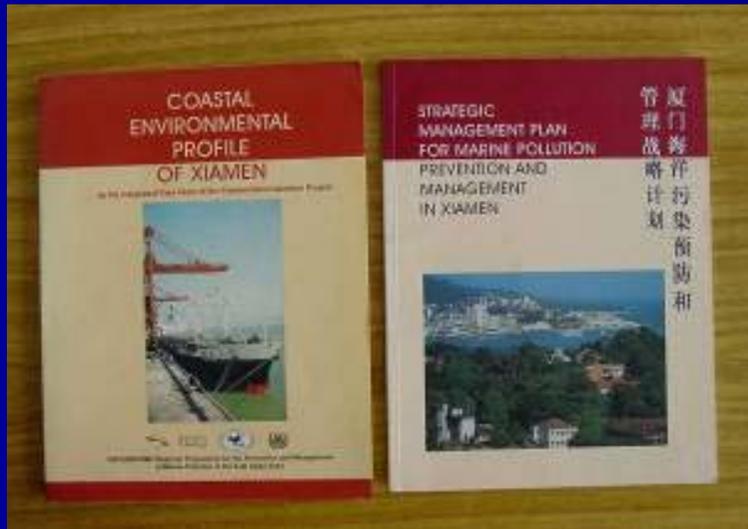
## Coastal and marine activities

- Port and Shipping
- Fisheries
- Tourism
- Coastal Industries

<i>Socio-Economic Factors</i>	<i>Values</i>
<i>Length of Coastline</i>	226 km
<i>Sea Area</i>	390 km <sup>2</sup>
<i>Land Area</i>	1,569 km <sup>2</sup>
<i>Population</i>	2,400,000 (2006)
<i>GDP</i>	<b>137.5 Billion RMB (2007)</b>
<i>GDP Growth Rate</i>	18.3%
<i>Value of Ocean Industry</i>	<b>15.87 Billion RMB (2006)</b> (13.6% of GDP)
<i>Rare Marine Species</i>	Chinese White Dolphin Mangroves Lancelet Egret Limulus (Horseshoe Crab)

# GEF/UNDP/IMO Xiamen Demonstration Project

## I Phase ICM:1994-1998



*GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas (MPP-EAS)*

## II Phase ICM:2001-2006



*GEF/UNDP/IMO Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)*

## III Phase ICM: 2008-2012

*Implementation of the Sustainable Development Strategy in Sea of East Asia (SDS-SEA)*

# Main Achievements of the Xiamen ICM Demonstration Project

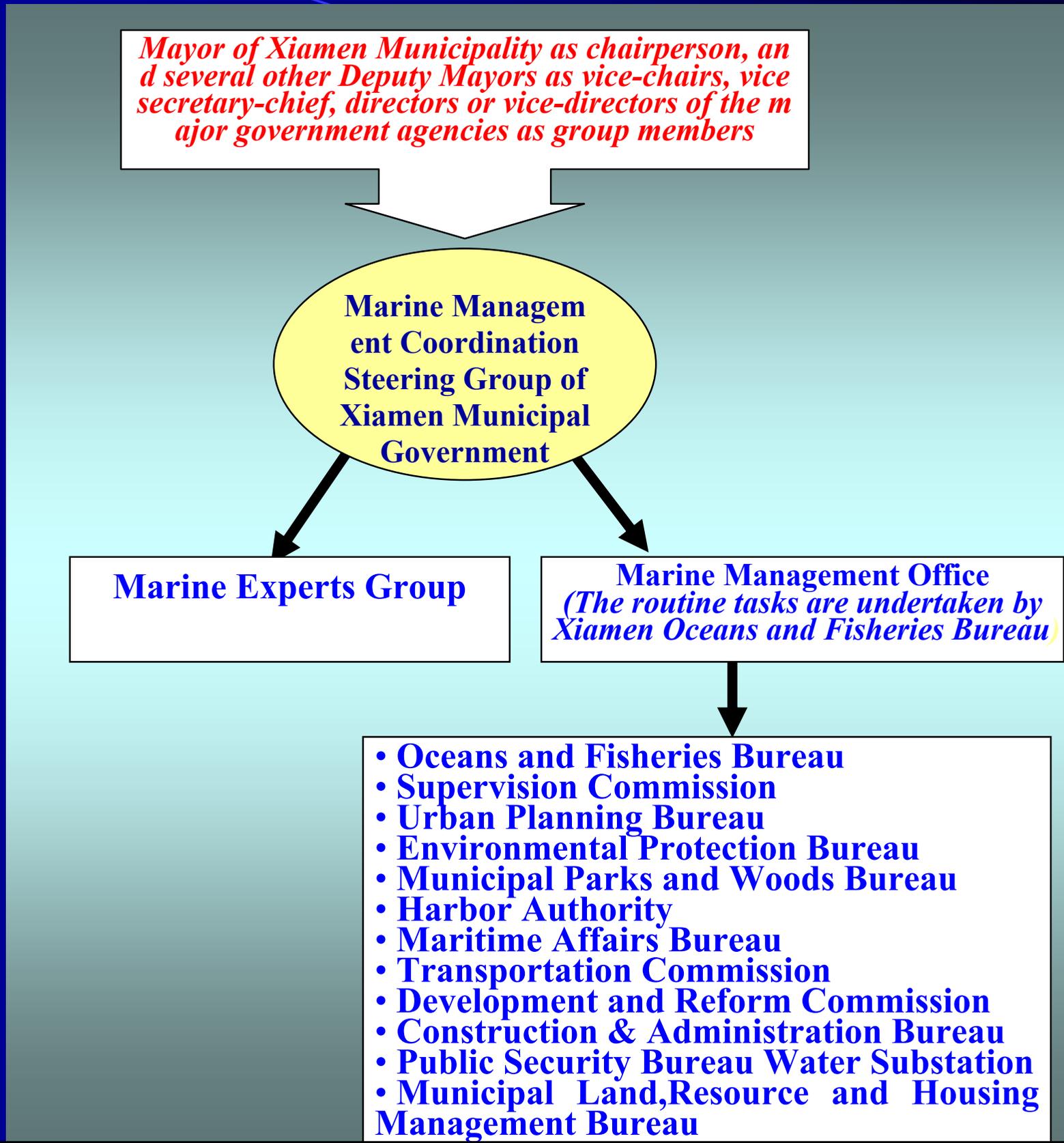
## ICMデモンストレーションサイト:アモイの主な実績

- I . Establishment of ICM coordinating mechanism
- II . Strengthening of legal provisions for environmental management and law enforcement
- III . Establishment of Scientific and technical support mechanism
- IV . Reduced multiple use conflicts
- V . Restoration of Marine Species Habitats
- VI . Improved public awareness of the importance of the coastal resources
- VII . Environment Improvement and land-based pollution reduced



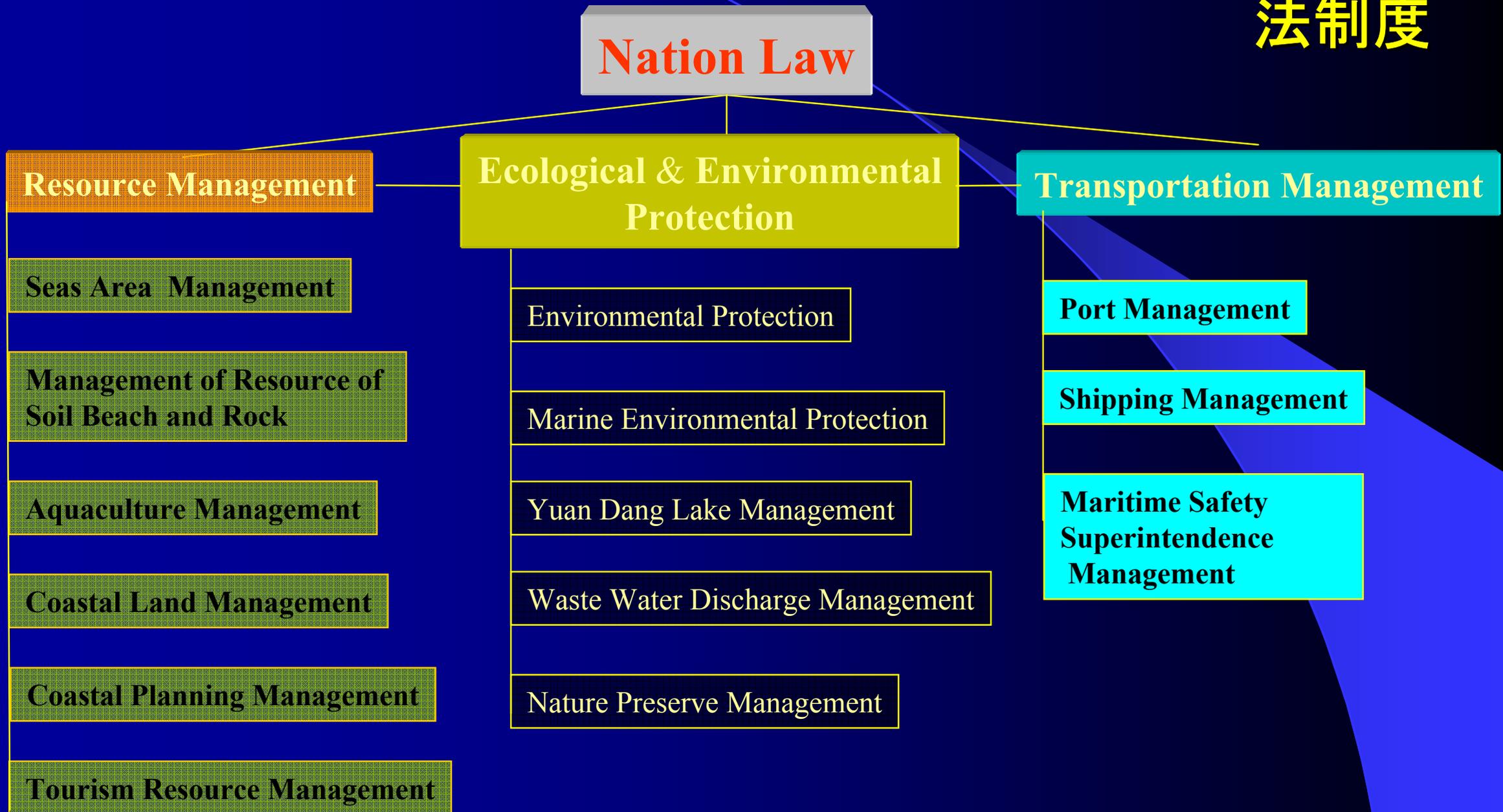
# Xiamen Integrated Management Coordinating Mechanism

## 組織構成



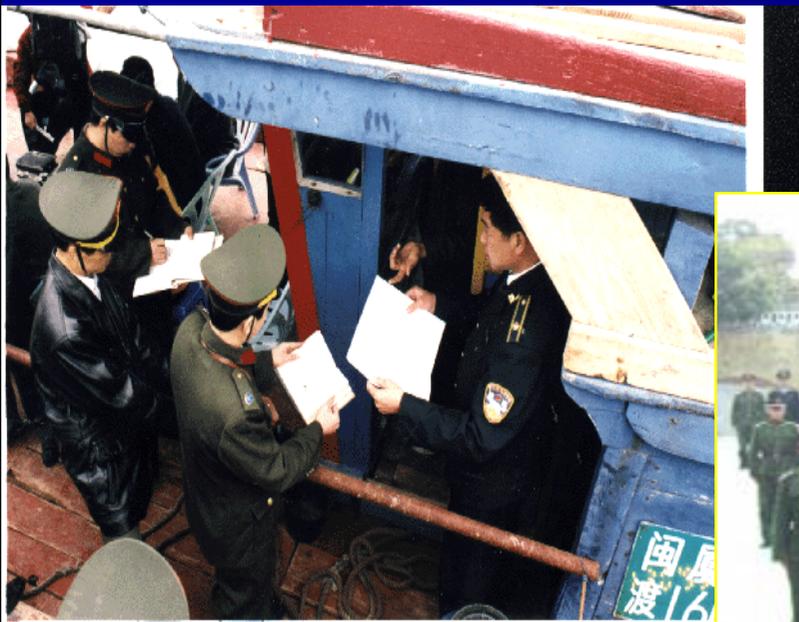
# Xiamen Coastal Management Legal Framework

法制度



# Integrated Law Enforcement 法律の着実な施行

- A supervisory force , together with the related forces, such as harbour supervisor, fishery supervisor, water police and environment supervisor, has been formed within the Marine Management Office as to strengthen integrated law enforcement.

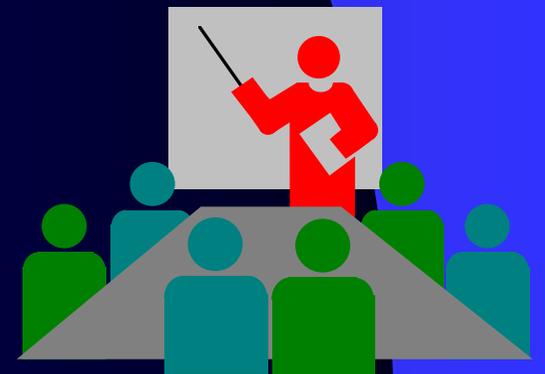


# Scientific and Technical Support Mechanism

科学的・技術的サポートの仕組み

including:

- Xiamen Marine Experts Group
- International Training Center on Coastal Sustainable Development
- Xiamen Marine Functional Zoning Scheme (XMFZS)
- Comprehensive marine economic development plan
- Marine environmental monitoring network



# Xiamen Marine Experts Group

## アモイ海洋専門家グループ

Scientific support mechanism has been established as Xiamen Marine Experts Group, providing scientific advisory to the management decision making on regular basis.



Renew Meeting of Xiamen Marine Experts Group (2005)



Advisory from marine experts

# Xiamen International Training Center for Coastal sustainable Development (ITC-CSD)

“ITC-CSD, Xiamen” was established in July 2001 with the joint efforts of PEMSEA ,State Oceanic Administration , Xiamen Municipal Government and Xiamen University .

## ■ Function and Role

- *Since its establishment, ITC-CSD has conducted a series of regional and national ICM trainings and study tours annually. Up to now, the total amount of trainees has been nearly **one thousand** ( 525 for International and 457 for Domestic ).*
- *Among them are scholars, researchers and senior officials coming from nearly **twenty countries** including the Southeast Asia, Middle-east, Africa, America, Australia and Oceania.*
- *The center has also maintained an effective network with UNDP, UNEP, IMO, GEF, IWP and NOAA, SENSAs as well as relative government units of Indonesia, ROK, Vietnam , Thailand, etc.*



Training Base  
in  
XIAMEN



■ Inaugural Opening Ceremony of the Training Center



■ ICM Study Tour For MMAF of Indonesia, 2007



■ PEMSEA Regional ICM Training 2004



■ Domestic ICM Seminar 2005

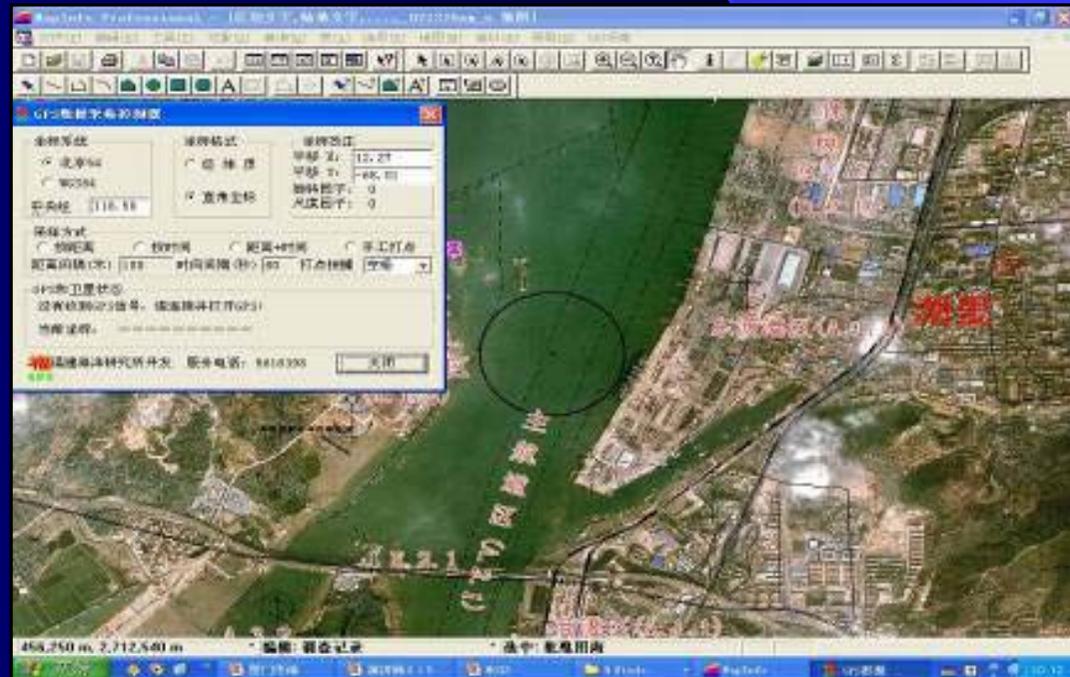
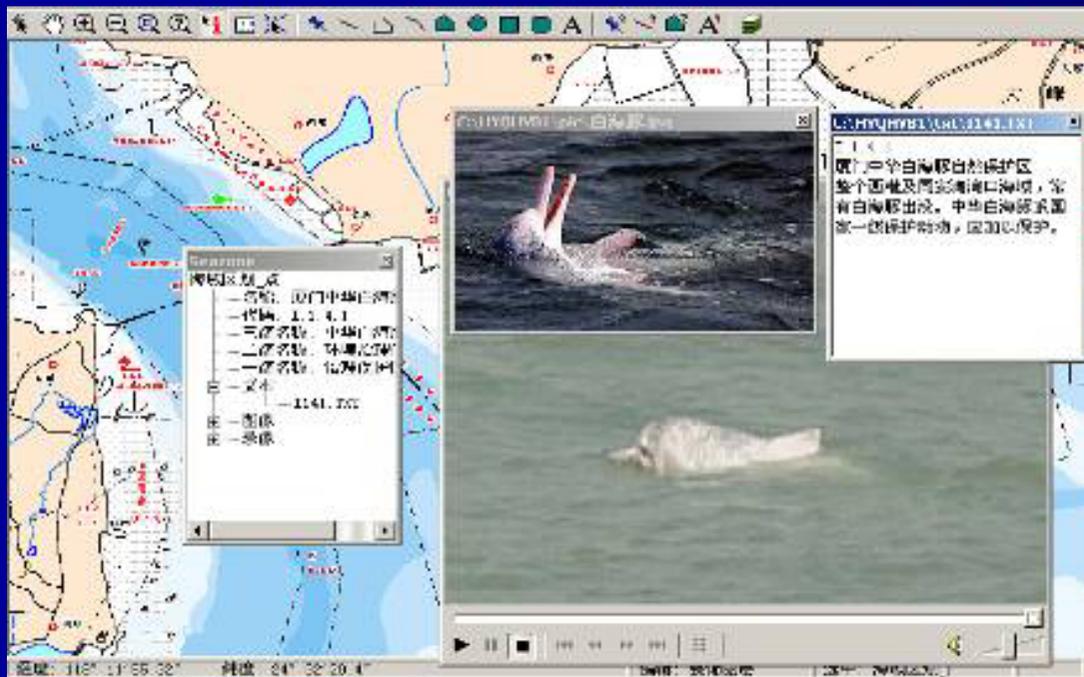


■ PEMSEA ICM Study Tour 2003

# Geography Information System of Marine Functional Zonation Scheme (MGIS)

## 海域機能別ゾーニングにおけるGISの活用

GIS-based information system of marine uses and environment was established as a tool to implement Marine Functional Zoning Scheme, which is currently used by Xiamen Oceans & Fisheries Bureau in granting marine-use permits.

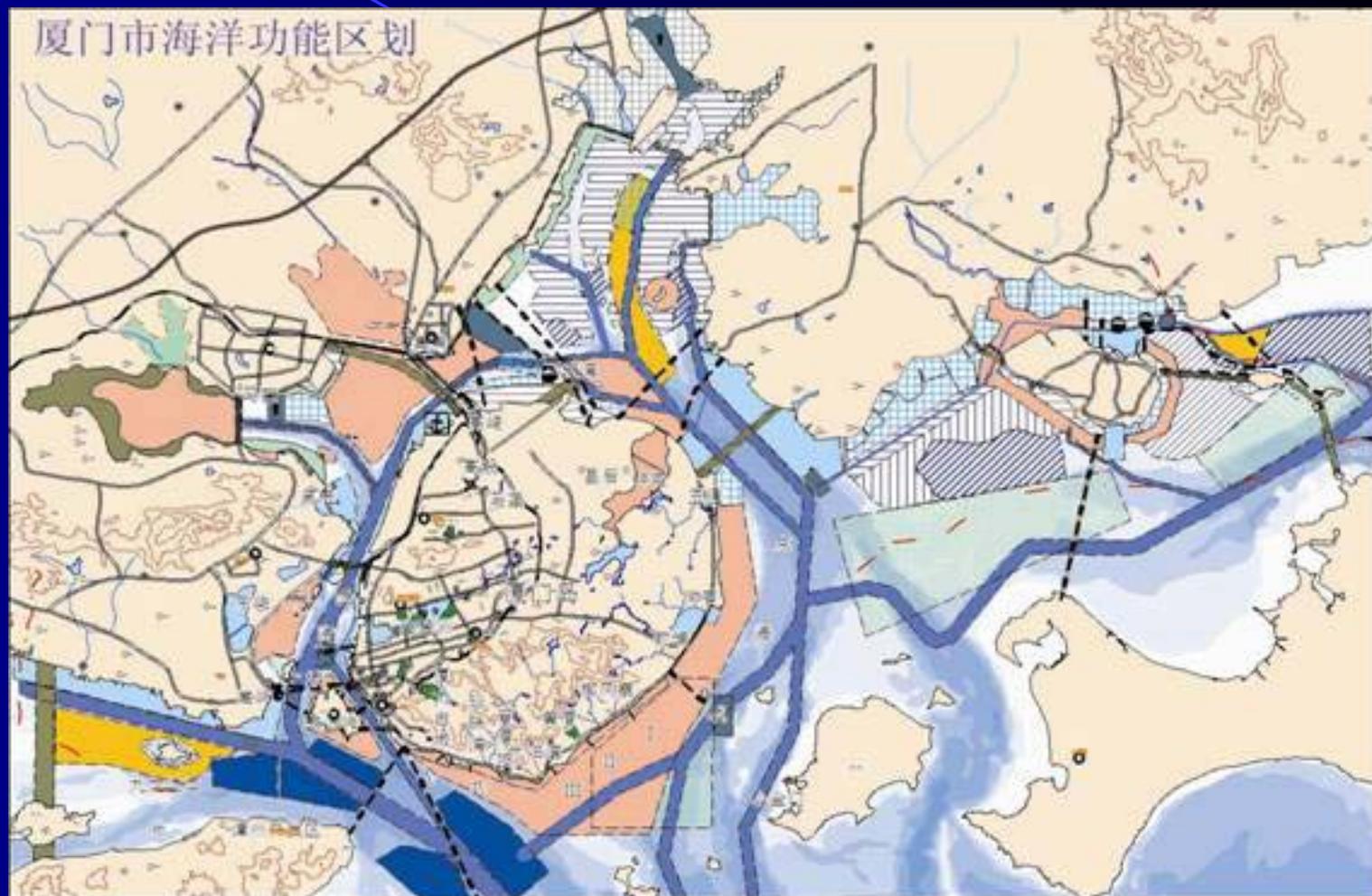


# Xiamen Marine Functional Zoning Scheme

## アモイ海域機能別ゾーニングの体系

- **Established in 1997**

Intensified the protection of marine environment, wetland, coastlines and biodiversity by designating various use functions to different sea area.

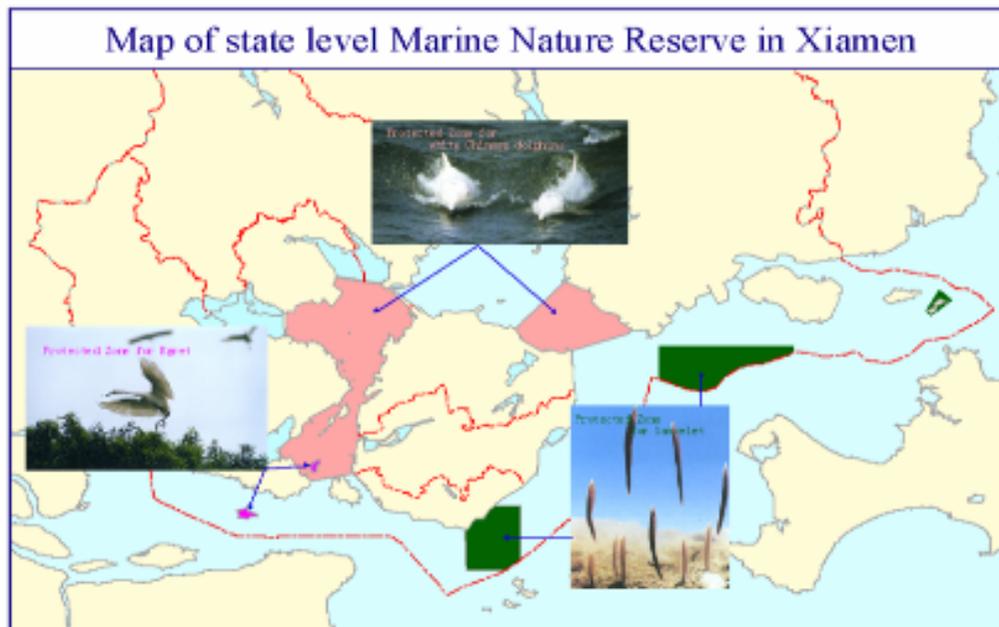


- **Revised in 2003**

Further emphasized the interaction between the city master plan and sea uses, more rational control over the strength of coastal development and sea use structure, and nature reservation and ecological capacity building.<sup>13</sup>

# Protecting the Endangered Marine Species

## 海洋希少生物の保護



A state-level marine protected areas for rare marine species has set up as to address multiple use conflicts, protect the biodiversity and habitat .

# Restoration of Marine Ecological Environment

## 海洋生態環境の再生



Artificially hatched larvae of endangered and commercial species are released into the sea annually as to restore marine ecological environment.

# Protecting and replantating mangrove off Qing-Jiao Village, Hai-Cang

マングローブの保護と植林



At the same place-

After more than



one year



# Yuandang Lake Integrated Treatment Project (1989-2002) Benefits / Costs 9.4

総合的な下水処理施設整備の費用対効果=9.4

With Yuandang Lake's 10-year cleanup project, the environment quality of Yuandang Lake has been gradually improved. Through conducting Yuandang Lake integrated treatment project, Xiamen Government realized that a good quality environment could greatly promote city construction and gain significant socio-economic benefits.

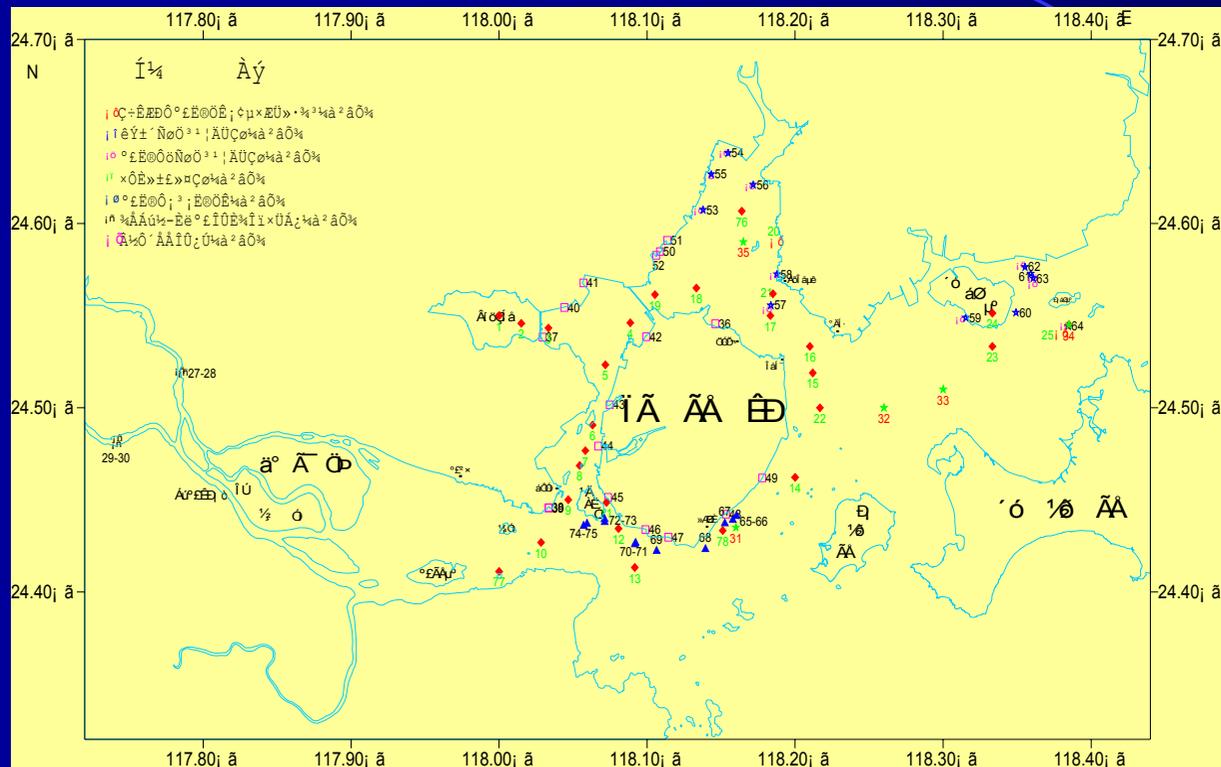


# Building Waste Water Treatment Plants



Till 2008, 8 municipal sewage treatment plants have been built up as to reduce land-based pollution discharge.

# Intensified Monitoring over Marine Ecological Environments モニタリングの充実



Monitoring stations in Xiamen



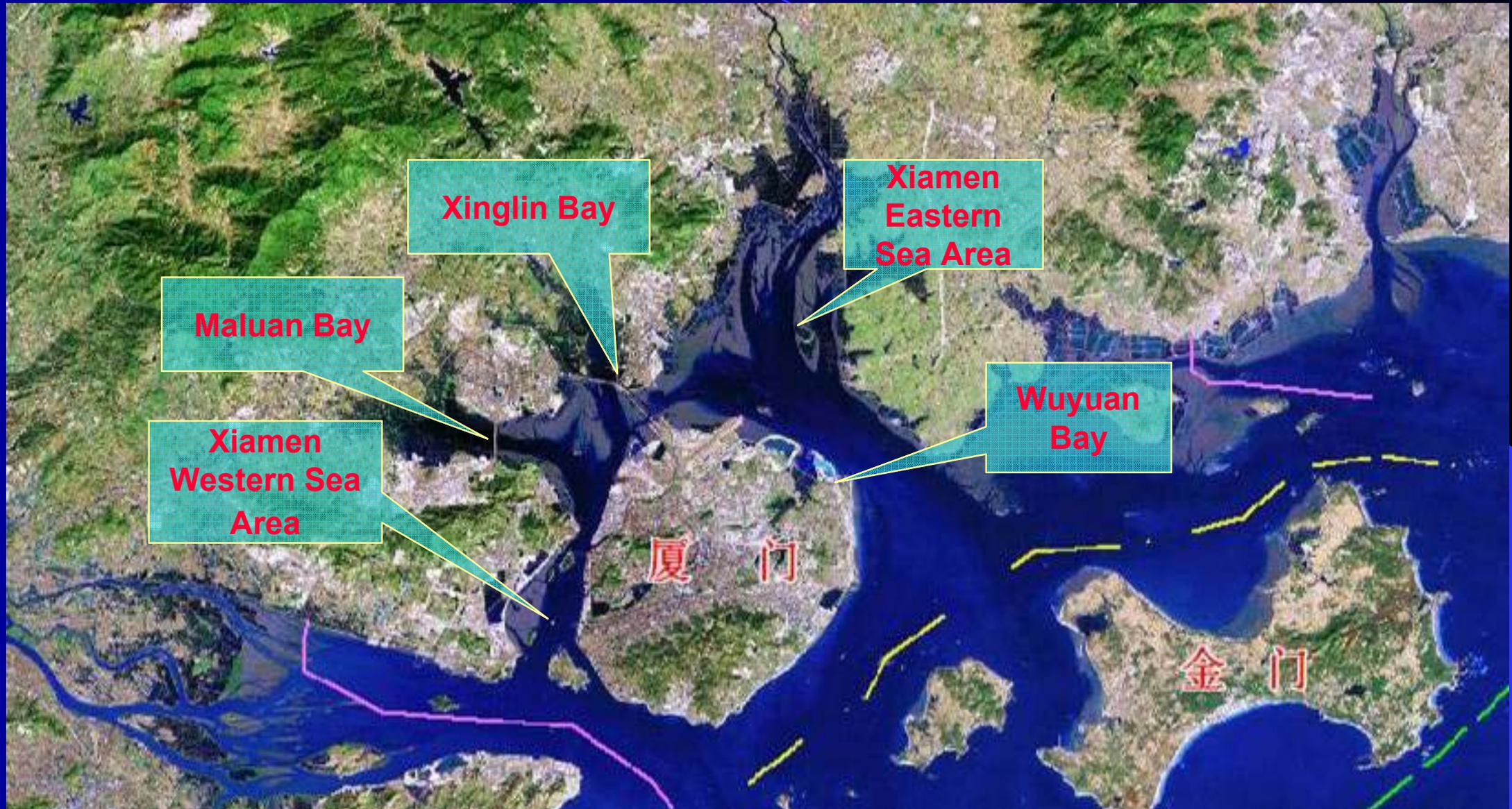
Emergency monitoring



YSI automatic online monitoring

# Integrated Rehabilitation of Xiamen Sea Areas

## アモイ海域の再生に関する総合計画



Since 2001, Xiamen Municipality has put great efforts on integrate rehabilitation of western sea area, Maluan Bay, Xinglin Bay, Wuyuan Bay and Xiamen eastern sea area, reducing the rising pollutions and beautifying coastline.

# Integrated Rehabilitation of Tong'an Bay (Xiamen Eastern Sea Area)

From 2006, Xiamen Municipality invests over 18 billion RMB to conduct Tong'an Bay Integrated Rehabilitation Project, which involved 114 sq. km. of land area and 91 sq. km. of sea area. The goal of project is to build a new beachfront area of about 100 sq. km, and to eventually improve the marine environment of Tong'an Bay.

Status quo of Tong'an Bay



Future in Tong'an Bay



# Initiation of ISO 14001 Certification and Establishment of Xiamen's Marine Environmental Management System

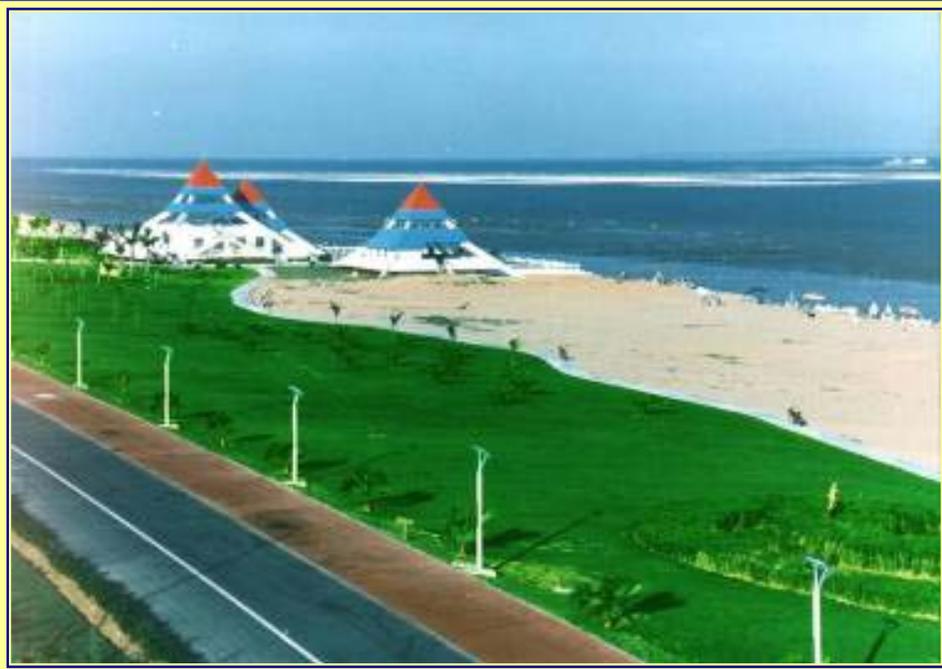
- Following the success of Gulangyu Island as one of the earliest local government units in China to receive ISO 14001 certification, the Xiamen Municipal Government has also worked towards acquiring the said certification using ICM as a basis for its environmental management system.
- ISO 14001 adheres to the principles of continuous improvement and pollution prevention, which is seen as complementary to the practice of ICM, and will ensure continual improvement, pollution prevention and the attainment of sustainable development goals and objectives.



# Public Awareness and Participation in Xiamen



# National Recognition



*“UN Habitat Award”*

*“State Model City in  
Environmental Protection ”*

*“Top Ten Pleasant Living  
Cities in China ”*

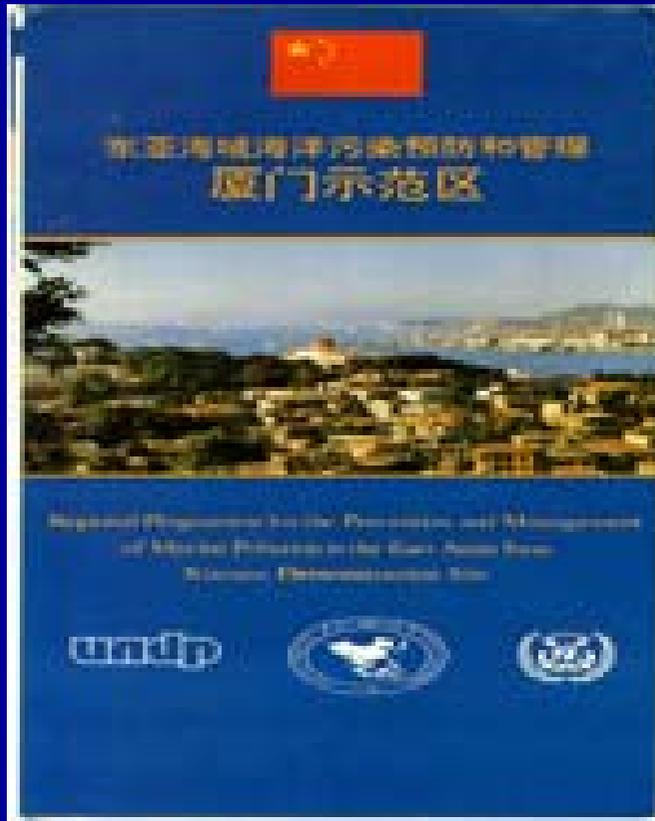
*“State Health City ”*

*“State Gardening City ”*

*“State Model City in Tourism ”*

... ..

# International Recognition for water quality improvement



Improved environmental quality in the River Thames in England, Boston Harbor in the United States, and **Xiamen Harbor in China** show that determined, coordinated action can produce benefits even in large urban areas, where development and population pressures are concentrated” .  
(GESAMP, 28th Session, 1998)

*GESAMP: Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection, established in 1967 by a number of UN agencies*

# PEMSEA Gold Award for Outstanding Performance in Coastal Governance



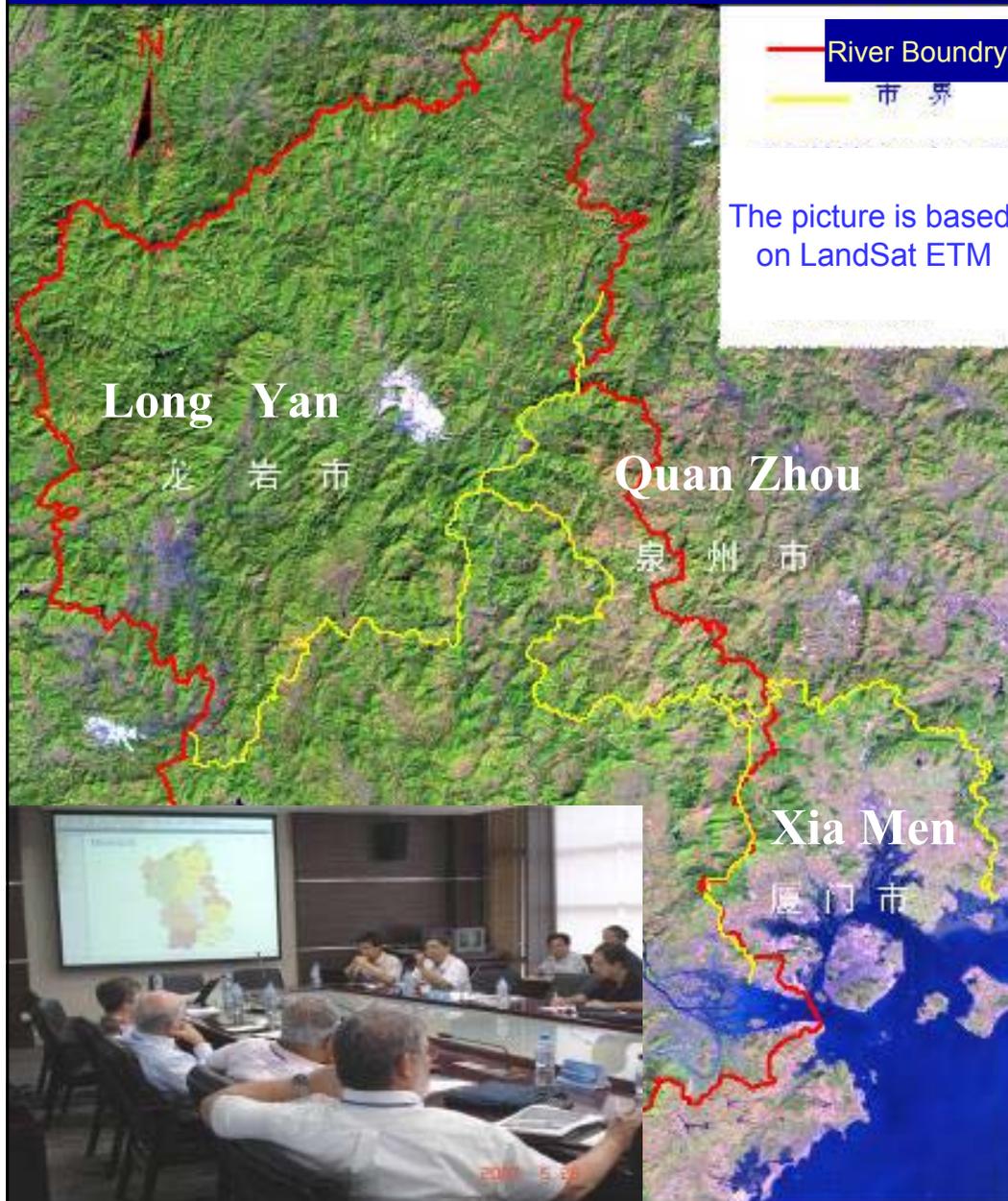
“In recognition of its continual efforts in improved coastal governance and achievements in effective reduction of pollution, rehabilitation of degraded habitats, conservation of endangered species, resolution of multiple use conflicts, provision of adequate water supply and sanitary services, reduction of poverty, and improvement in the standard of living of its people.”



**Award Acceptance**

# Marine Ecosystem-based Regional Management

## Integrated Freshwater and Coastal Management Project in Jiulongjiang River and Xiamen Bay :



- Jointly organized by the U.S. National Oceanic and Atmospheric Administration, UNDP China, the State Oceanic Administration, Xiamen Municipality and other relevant sectors ;
- The Project has been brought into the proposal for GEF to demonstrate an integrated watershed management strategy for nutrient reductions, as to reduce the land-based pollution in the upstream area, and obtain sustainable development .

# BUILDING REGIONAL PARTNERSHIP OF LOCAL GOVERNMENTS FOR SUSTAINABLE COASTAL DEVELOPMENT

## 持続可能な沿岸開発に取り組む地方自治体ネットワークの構築

### PEMSEA ICM Sites:

- 13 Demonstration Sites
- 13 Parallel Sites

### A Regional Alliance:

- PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG)
- 23 PNLG Members and 7 Observers



# PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG)

- The PNLG's mission is to serve as a sustainable network of local governments in the region, which, along with their stakeholders, are committed to promote the application of ICM as an effective management framework to achieve sustainable coastal development.
- The Network has proven to be a unique and valuable partnership arrangement among local governments, focusing on the special challenges of coastal cities, municipalities and provinces with regard to sustainable growth and development, and providing a vehicle for sharing practical experiences and management know-how on ICM practices among its members.



# PNLG Forum: venue for knowledge sharing

## PNLGフォーラム：情報・知識共有の場

- 1st RNLG Forum, Seoul, Republic of Korea, 15-16 March 2001
- 2nd RNLG Forum, Xiamen, People's Republic of China, 20-23 September 2002
- 3rd RNLG Forum, Putrajaya, Malaysia, 9 December 2003
- 4th RNLG Forum, Bali, Indonesia, 26-28 April 2005
- Inaugural Meeting of the PNLG, Haikou City, PR China, 13 December 2006
- 2007 PNLG Forum, Danang City, Vietnam 5-7 October 2007



# PNLG Secretariat (Hosted by Xiamen)

## PNLG事務局:アモイ

Now Xiamen is taking a lead in the endeavor for building a regional partnership among local governments, by hosting a secretariat office of the PNLG to provide necessary administrative and technical support to the operation of the network functions.

- Uploading and maintaining the PNLG website
- Collection of annual membership fee
- Fund management
- Organization of annual forum
- Recruitment of new members
- Representing PNLG at PEMSEA/ international forums



**PNLG Website**  
**([www.pnlq.org](http://www.pnlq.org))**

# OPENING WINDOW FOR GLOBAL COOPERATION OF COASTAL CITIES

## Global Outreach:

- World Ocean Week in Xiamen (WOW)
- Xiamen International Forum of Coastal Cities (XIFCC)



- ❖ Co-organized by UNDP China, SOA, Xiamen Municipality and PEMSEA
- ❖ Annual event: International Marine Forum, Marine-Theme Exhibition and Marine Culture Activities





## 2005 Xiamen International Forum of Coastal Cities

(“Intensifying prevention and treatment of pollutants from land-based activities, Protecting and improving marine environment”)





# 2006 Xiamen International Forum of Coastal Cities

("Water resource Sustainability in Coastal Cities")





# World Ocean Week in Xiamen [2007]

(“Scientific Development and Utilization of Oceans”)





# World Ocean Week in Xiamen, 2008

( 7th-13th November, 2008 , Xiamen, P. R. China )

**Theme:** “Building Marine Ecological Civilization”

- **International Marine Forum**

- Main Forum
- Marine Culture International Forum
- Yacht Industry Development International Forum
- 2008 China Leisure Fishery International Conference
- Other Forum and Training Course

- **Marine-theme Exhibition**

- 2008 China (Xiamen) International Yacht & its Technology Facility Exhibition
- China Leisure Fishery International Expo.

- **Marine Culture Activities**

- Marine Topic Concert
- Chinese Undergraduate Marine Knowledge Competition
- 2008 China (Xiamen ) International Beach Festival
- China Marine Photography Competition ... ..



# Conclusions

Let us look back over the process of implementation of Xiamen ICM project:

- ◆ the first phase (1994-1998) focused on establishing mechanism of integrated management and preventing marine pollution;
- ◆ the second phase (2001-2006) focused on marine ecological rehabilitation;
- ◆ the third phase (2008-2012) will focus on ecosystem-based marine regional management.

The past experiences and lessons have proved that marine environmental protection and ocean economic development can not only coordinate with each other but also bring out the best in each other.

- Taking advantage of the financial support from GEF /PEMSEA/ SOA, Xiamen Municipality has initiated ICM project and established various mechanisms including legal system and financial supporting system, which has ensured the sustainable operation of ICM project.

- *Now that Xiamen ICM project not only achieves its economic and social sustainability, but also plays a demonstrative role throughout the nation and the world by scaling up ICM experience.*

*Take an example, the formulation and implementation of Xiamen Marine Usage Regulation and Xiamen Un-resident Islands Protection & Utilization Regulation have greatly facilitated the legislation of national marine usage law and marine islands law.*

- Today, Xiamen has transformed from recipient to contributor. Speaking of the platform of PNLG/Training center/World Ocean Week in Xiamen, Xiamen municipality bears more responsibility to share with other coastal cities on the ICM experience and enhance capability building of sustainable development.

Thank you for your attention!

