



Xiamen Ocean and Fishery Bureau

ICM Solutions

Strengthening Coastal Governance and the Application of Integrated Coastal Management through an ICM Law

- Improving coastal and ocean governance is a necessary step in protecting and sustaining coastal and ocean ecosystems and the services they provide to communities, enterprises, and individuals.
- Exemplary ICM legislation addresses different elements of governance, including interagency and multisectoral coordination, stakeholder awareness and participation, financing, monitoring and reporting, information sharing, and knowledge management, as well as the application of management instruments, including marine protected areas (MPAs), marine functional use zoning, total pollution load control, valuation of ecosystem services, and disaster risk reduction and response to disasters.
- An ICM law is not a silver bullet. It cannot possibly cover or bring about all the desired changes in the behavior of the different users of coastal and ocean resources. A combination of social, economic, and regulatory instruments needs to be developed and harmonized in order to strengthen overall impact and benefits and build awareness and ownership among the public and business sectors.



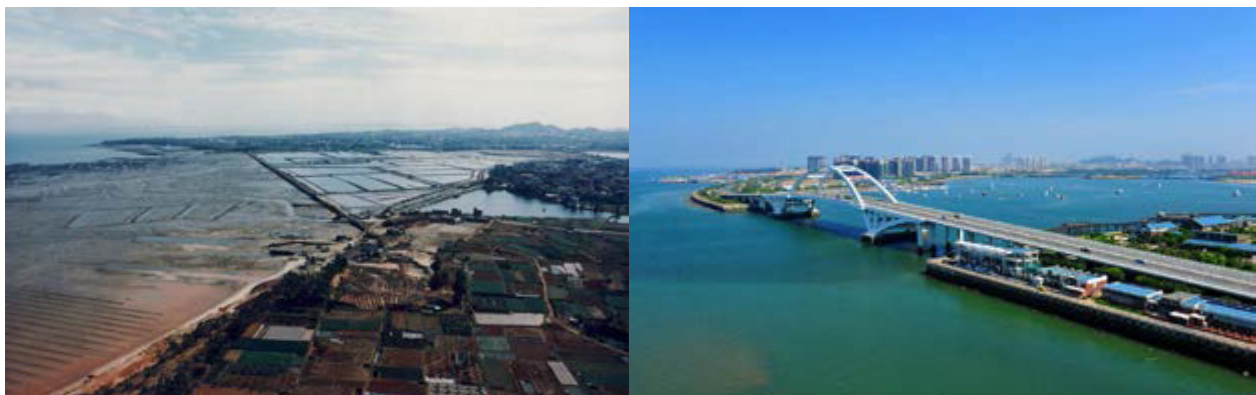


A landscape view of the City of Xiamen.

Context

Xiamen City opened itself to the outside world as a Special Economic Zone (SEZ) in 1981. The subsequent economic upswing coupled with the rapid growth of population and urbanization demanded more jobs, food, energy and living space, among others. Coastal reclamation, aquaculture, ports and shipping (Zhang, et al., 2013) not only brought huge environmental pressure but also yielded conflicts in the use of the sea space (e.g., incompatibilities between fisheries, shipping, coastal engineering, waste disposal, tourism and conservation [PEMSEA, 2009]).

The existence of 15 different ocean-related sectors managed by various departments added to the chaotic management condition especially where there was a lack of cooperation and coordination between these sectors (Fang, et al., 2015). All claimed the right to use the sea, but environmental stewardship was neglected. Massive marine pollution due to discharges of untreated industrial and domestic wastes and oil and garbage dumped from marine vessels, organic residues from aquaculture, overfishing, and extensive reclamation projects led to huge damage and eventual loss of coastal habitats and decline in biodiversity. This affected the mangrove forests and fish stocks, and the local extinction of the Chinese white dolphin, egret and lancelet (Zhang, et al., 2013). The laws at that time were sector-based, leading to fragmentation in coastal governance. Law enforcement was weak and ineffective due to lack of resources and cooperation among the different agencies (PEMSEA, 2009).



A view of the Wuyuan Bay of Xiamen before and after restoration.

BOX 1. ICM LEGAL FRAMEWORK IN XIAMEN.

Integrated coastal management (ICM) is widely accepted as the best approach to dealing with coastal issues, and this provides the fundamental basis for the development of an ICM law (FAO, 2006). Similar to many other countries and local governments, Xiamen does not have a single law for ICM, but rather a framework of laws, regulations, and non-regulatory instruments at national, provincial, and municipal levels that, collectively, provide the legal and regulatory framework for an ICM program.

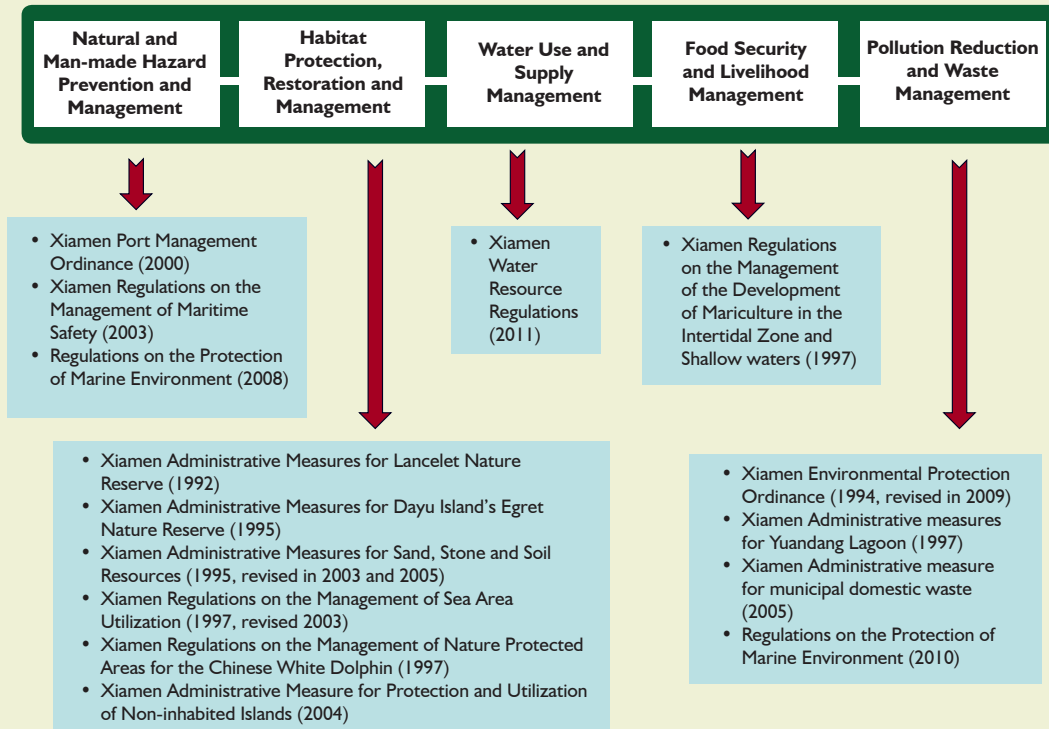


Figure 1. ICM Legal Framework in Xiamen (national and provincial legislation not included).

Improve the ICM legal and regulatory framework. Before 2000, ICM-related legislation in Xiamen primarily focused on lancelet and egret protected areas, protection of Chinese white dolphin, navigation, and sea use. From 2000 to 2015, a number of new regulations were developed and adopted (Box 1). These regulations and decrees provided a legal framework for the ICM program, covering different aspects of sustainable development of coastal areas, including habitat and species, fishery and aquaculture, pollution and waste management, and navigation and ports. In addition, the Regulations on Protection of Marine Environment contain specific provisions relevant to climate change adaptation, disaster management, and fishery management.

At the national level, overarching laws related to the marine ecosystem form part of the ICM legal framework. Examples include the Wild Animal Protection Law, Environmental Impact Assessment Law, Water Law, and Disaster Prevention Law. Legislation at the provincial level is also an integral part of the ICM legal system (e.g., the Fujian Water Resource Management Regulations).

Create statutes on coastal governance in ICM law. Legislation can strengthen coastal governance by creating specific statutes that detail governance mechanisms. The following examples from Xiamen highlight such provisions, as illustrated under different aspects of governance under the sustainable development of coastal areas through ICM framework in figure 2.

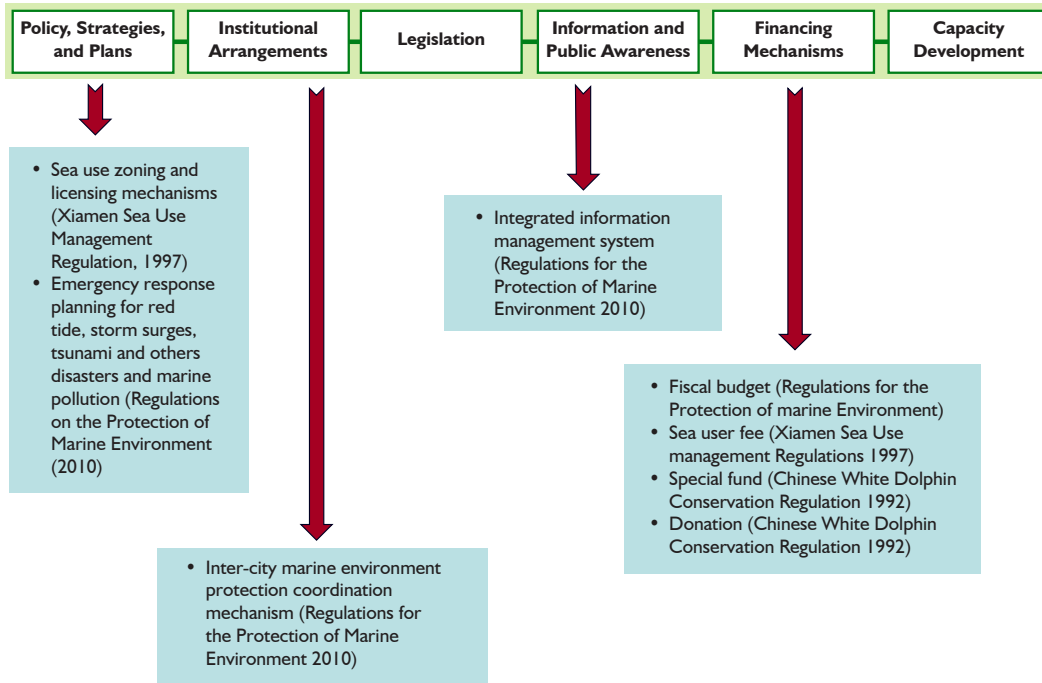


Figure 2. Statutes that strengthen different aspects of coastal governance in Xiamen ICM legal framework.

Coordination mechanisms for protection of marine environment and coastal ecosystems. The Regulations for the Protection of the Marine Environment in Xiamen, 2010, require the establishment of an integrated ocean and coastal management coordinating mechanism, a core component of ICM programs in accordance with the principles of land and sea integration, centralized coordination and scientific decisionmaking (Article 2). The regulation also requires the municipal government to establish an inter-city marine environment protection coordination mechanism for the protection of the marine environment and restoration of coastal ecosystems in Xiamen Bay and Jiuling River watershed area (Article 3). The provision requires Xiamen Municipal Government to establish two coordinating mechanisms, one with the Zhangzhou and Longyan, the two upstream cities of Jiulong River Basin, and the other with Zhangzhou and Quanzhou, which are linked with Xiamen by the sea.

Integrated Information Management System. The same regulation stipulates that the Municipal Ocean and Fisheries Bureau shall be in charge of survey, monitoring, surveillance networking and development and maintenance of an integrated marine information system (Article 10). Relevant bureaus with mandate on ocean management and monitoring are required to integrate their monitoring and observation data into the integrated marine information system.

Financing for coastal and marine environment and disaster reduction. Financing for marine environment protection, ecosystem restoration, disaster risk reduction, and endangered species protection is clearly provided in several pieces of legislation with the following four sources of financing being designated.

1. Fiscal budget. The Xiamen Marine Environment Protection Law requires municipal and district governments to gradually increase investment in marine ecosystem restoration, marine disaster preparedness and risk reduction, marine environment pollution treatment, and funding shall be included in the fiscal budget within the different levels of governments (Article 7).
2. Sea use fee. The Xiamen Sea Use Management Regulations mandates the levy of sea use fee for six types of activities (i.e., engineering, industry, tourism, fishery, dumping, and other activities) (Article 4). The same regulation allows the sea use fees to be used for sea area development and construction, conservation, and management (Article 19).

3. **Special Fund.** The Xiamen Chinese White Dolphin Conservation Regulation (1997) states that the municipal government shall establish the Chinese White Dolphin conservation and Development Special Fund to support the species conservation, marine protected area (MPA) management, scientific research, education, and awareness raising activities (Article 4).
4. **Donation.** The same regulation on Chinese White Dolphin conservation encourages organization and individuals to donate for conservation of the species and its habitat (Article 4).

Make the application of ICM tools mandatory by law

ICM tools applicable in the ICM cycle have been made mandatory in legislation in Xiamen. These include MPAs, marine functional use zoning, total pollution load control, valuation of ecosystem, and emergency response to disasters. Statutes of such legislation are specified below.

Total pollutants load control system. The Regulations on the Protection of the Marine Environment (2010) require the Ocean and Fisheries Bureau to prepare a total allowable pollutant load implementation plan in the municipal coastal waters in collaboration with environment, fishery, and maritime bureaus (Article 5).

Sea use zoning and licensing. The Xiamen Sea Use Management Regulation (1997) provides the application of a sea use zoning system to strengthen sea use management and protect marine ecosystems (Article 1). Article 8 provides that sea use rights are licensed through application and transfer. Article 5 mandates the city administrative departments that are in charge of the city's municipal waters to utilize integrated and unified management and coordination of the implementation of the provisions of this regulation as well as the implementation of the Marine Functional Zone (MFZ) scheme. Article 6 states the prohibitions on the use of waters while Article 7 presents the fixed-exclusive utilization of waters and the application of the use permit system and system of paid use. Lastly, Article 20 enjoins the users of the sea to assume an obligation to protect the marine resources and ecological environment, under the supervision and inspection of the relevant marine administrative departments. Failure to do this will be grounds to subject sea users for investigation and due punishment. Article 20 further specifies bidding, auction and concession as the three ways to dispose of or transfer the sea use rights.

Marine ecosystem damage compensation. Regulations on the Protection of Marine Environment requires the relevant government agencies and their designated public service entities to sue enterprises for compensation for costs to treat pollution of the marine environment made by the damaging party, or to restore the integrity of marine ecosystems, marine species population or MPAs caused by the damaging party.

Marine Protected Areas. Through the Xiamen Administrative Measures for Lancelet Nature Reserve (1992), Xiamen Administrative Measures for Dayu Island's Egret Nature Reserve (1995) and Xiamen Regulations on the Management of Nature Protected Areas for the Chinese White Dolphin (1997), Xiamen has established three national marine nature reserves for protection of the lancelet, egret, and Chinese white dolphin, their habitats, and regulation of activities with potential impact to the survival of species. For example, the Xiamen Chinese White Dolphin Protection Regulation (Article 14) requires ship speed in the port area within the Chinese White Dolphin Nature Reserve be limited to less than 8 knots per hour. Additionally, the regulation mandates all administrative departments in Xiamen City to contribute and closely cooperate to jointly improve the protection actions for the dolphins. The establishment of an information system was also ordered as well as the popularization of scientific knowledge on the species for public awareness.

Emergency response planning for red tide, storm surges, tsunamis, and other disasters and marine pollution. The Regulations on the Protection of Marine Environment (Article 11) require the municipal government to develop emergency response plans for red tide, storm surges, tsunamis, and other marine disasters, as well as for the significant marine pollution accidents.

Develop Incentive and Disincentive measures for compliance with ICM Law

Incentives are widely used and legalized in Xiamen to promote compliance. The Xiamen Chinese White Dolphin Protection Regulation requires the municipal governments or Ocean and Fisheries Bureau to award individuals and organizations for exceptional performance in management, research, awareness raising, education and compliance, as well as reporting of activities to competent authorities that harm the species. Similarly, Regulations on the Protection of the Marine Environment also requires the municipal government and other relevant bureaus to award individuals and entities with exceptional performance in the conservation and protection of marine environment.

The Regulations on the Protection of the Marine Environment (Article 12) establishes a credit mechanism whereby marine environment protection practices of enterprises with sea-based operations will be assessed by the Ocean and Fisheries Bureau. A good credit list and a black list will be made available to the public each year based on assessment results. Article 13 further stipulates that enterprises with good credit will be awarded by the government, while enterprises on the black list will be deprived of rights for bidding on projects that are announced by the municipal government. In addition, proof of compliance with environmental protection regulations shall not be issued by authorities to enterprises on the black list in securities listing application.

Enforce ICM Law through Joint Monitoring to Improve Effectiveness of Implementation

A multiagency law enforcement mechanism is in place in Xiamen. The Xiamen Ocean Management Office is the lead agency in coordinating joint law enforcement activities under a model of “joint enforcement and separate prosecution.” The Marine Supervision Brigade, a supervisory force consisting of harbor, fishery, water policy and environmental supervisors, was formed within the Marine Management Coordination Office (MMCO) and organized into an integrated law enforcement group (McCleave, et al. 2003). The formation of this enforcement group has improved frontline law enforcement and supervision of marine management, such as the provisions laid down in the implementing guidelines for the marine function zonation.

The Marine Supervision Brigade, under the Xiamen Ocean and Fisheries Bureau, plays a key role in joint marine law enforcement. The Brigade is mandated in the surveillance and prosecution of violations of sea area use plans, such as installing of fishing nets, illegal operations, and installation of aquaculture facilities that impact the proper function of the navigation routes, destructive fishing methods, dumping outside designated zones, underwater explosion activities without prior approval, and coastal reclamation activities.

Results

Planning process effectively facilitated through coordination mechanisms. The intercity coordination mechanism established as early as 2004 under the City Alliance between Zhangzhou, Quanzhou, and Longyan was strengthened with the adoption of the legislation. The mechanism now reviews regional economic planning and environmental issues between the top city leaders. The effectiveness of the coordination mechanism is evident with the full participation of the ocean, environment, agriculture and forestry sectors of Longyan and Zhangzhou during the preparation and development of the Jiuling River and Xiamen Bay Ecosystem Management Strategic Action Plan (SOA, et al. 2012).

Improved sea use efficiency and scaling up into national law. As a result of the Regulations for the Management of Sea Area Use, the sea areas in Xiamen were divided into four major areas with nine zones: shipping/port, tourism,

fisheries, coastal industry, ocean engineering, mining, nature reserve, special functions (such as for research, outfall discharge and military), and rehabilitation. The marine environmental problems and the conflicts in the use of the sea have been reduced and the condition of the environment is slowly being restored with a much stronger enforcement of MPAs. The sea use fees collected as stipulated in the local law were allocated for the protection of the marine resources and the environment and 30 percent of such was turned over to the national treasury (Zhang, et al. 2013). These regulations strengthened the implementation of ICM in the city of Xiamen and are directly linked to the protection of marine biodiversity.

The experience of the city was recognized at the national level. The enactment of national legislation, the Law of the People's Republic of China on the Administration of the Seas, was approved by the People's Congress in 2001. Its general purpose as stated in the law is for the strengthening of the administration of the use of sea areas, safeguarding State ownership of the sea areas and the legitimate rights and interests of the sea area users, promoting rational development and sustainable utilization of the seas.

Reduced violations of ICM laws through joint law enforcement. Three brigades are subordinated to the Xiamen Integrated Marine Administrative Regulation Enforcement Brigade and conduct joint daily surveillance of the 3.9 million km² of sea areas under Xiamen's jurisdiction with other agencies. High number of violations intercepted by the joint enforcement force team and strict application of penalties to a large extent deterred the occurrence of violations. For example, in 2008, during the 6,002 inspections, 557 violations were discovered and 416 administrative penalties were imposed (PEMSEA, 2015).

Lessons Learned

Good practice speaks louder to stakeholders in law-making. Shifting from the sector-based legislation to integrated management of coasts involving different stakeholders is a time-consuming process and has caused many failures in legislative reforms. The adoption of the sea use management regulation in 1997 by Xiamen was largely facilitated by ICM demonstration of coastal use planning. The success in resolving conflicts in the sea use planning process was ascribed to the engagement of the scientific community, stakeholder participation and coordination by municipal government.

For an ICM Law to be effective, every step of the legal process needs to be covered. ICM law is not only about law-making, it is a process that entails implementation, compliance, monitoring and enforcement. In Xiamen's case, compliance is ensured by instituting incentive measures for individuals, organizations and enterprises with outstanding performance in compliance and disincentive measures for enterprises who fail to comply with the law. Awareness-raising is equally important to enhance compliance. Similarly, implementation is ensured by joint enforcement involving related agencies with mandates in ocean management, thus leaving wrongdoers little chance of bypassing legal obligations without being prosecuted and penalized.

Making ICM tools and coastal governance statutory. ICM laws in Xiamen are able to address different aspects of governance and tools associated with ICM planning and implementation. Regulations on the Protection of the Marine Environment have made integration of land and sea, central coordination and scientific support as the overarching principle of law. All these statutes have contributed to the application and sustainability of the ICM program in Xiamen.

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