China's Framework Plan for the Implementation of the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA)

2012 - 2016



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#### **Foreword**

China is a coastal nation endowed with vast land areas and sea expanse, with 18,000 km of mainland coastline, 14,000 km of island coastline and more than 6,900 islands, each with a land area of over 500 m². The rich marine natural resources and valuable ecosystem services of the country's coastal and sea areas provide the foundation for its continued national economic and social development. Yet fragility of coastal and marine ecosystems, failure of coastal governance to underpin the interconnectedness between land and sea, nutrients and sediments from land-based sources from urban and agricultural production, sea use conflicts, frequent incidences of natural and manmade disasters, and other driving forces are increasingly becoming constraints to sustainable coastal and marine development. A shift to a new paradigm of coastal and ocean governance has become an urgent priority in China and other countries bordering the seas of East Asia.

In 1994, Xiamen Municipality piloted integrated coastal management (ICM) as an approach to address coastal governance and environmental issues, including pollution and sea use conflicts, in partnership with the Global Environment Facility (GEF), United Nations Development Programme (UNDP) and the International Maritime Organization (IMO). Nine years later, China and 11 other East Asian countries signed the Putrajaya Declaration that established the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) as the regional cooperation platform to promote the implementation of Agenda 21 and fulfill obligations of these countries under international environmental agreements concerning coasts, islands, and oceans. Since 2003, China has signed a number of regional declarations and agreements committing to establish the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) as a regional coordinating mechanism for the implementation of the SDS-SEA, to develop national policies for sustainable coastal and ocean development, and to scale up ICM at local levels. In 2008, ten coastal cities in China agreed to voluntarily develop and implement ICM programs to achieve sustainable coastal and ocean development.

China has aligned the strategies and objectives of the SDS-SEA with its own national priorities and programs and is taking concrete actions through local implementation. China's Framework Plan for the Implementation of the SDS-SEA (2012-2016), launched in June 2012, was prepared by a national expert team in collaboration with the PEMSEA Resource Facility (PRF) with participation of various departments inside and outside SOA, all coastal provinces and the ten coastal cities implementing ICM programs. While serving as a framework of actions to implement the SDS-SEA based on national priorities and needs, it is contemplated as a basis for coastal provinces, municipalities, regions, cities and counties to promote the development of coastal and ocean sustainable development through integrated coastal management.

The Framework Plan spells out China's sustainable ocean development challenges and proposes 32 actions under 12 measures in four areas covering: strengthening capacities to implement ocean-related laws and policies; improving disaster risk reduction to better adapt to climate change; scaling up ICM implementation to achieve the target of 20 percent coverage of the country's coastlines; and developing sustainable financing policies to implement a sustainable ocean development strategy, among others.

It is my belief that the Framework Plan and its transformation into national and local actions will promote the development of China's ocean-based blue economy as a new engine of growth, ensure the rapid and sustainable development in China, and contribute to maintaining healthy and blue coasts and oceans for the people of China and other countries in the East Asian region and beyond.

Chen Lianzeng

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# 1 Introduction

Since the 1990s, China has launched initiatives for integrated coastal management (ICM). In 1994, the Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas (MPP-EAS, now PEMSEA) established its ICM demonstration sites in Xiamen, China, as well as in Batangas Bay in the Philippines. The regional programme built up the level of capacity for coastal and ocean management of the participating nations by using the integrated coastal management framework and process.

Xiamen, as a demonstration site, provided valuable experiences in the implementation of ICM in China and in other nations, and has been well recognized by international organizations as an example of a successful ICM demonstration site. In 2000, Bohai Sea was chosen as a pollution hotspot site by the Regional Programme on Building Partnerships in Environmental Management for the East Asian Seas (PEMSEA) (Phase II of the Regional Programme on MPP-EAS). China carried out cross-boundary environmental management in the waters of the Bohai Sea and developed partnerships among relevant agencies. The Declaration of Environmental Management in the Bohai Sea, signed in 2002, provided momentum for the State Oceanic Administration (SOA) of China to address land-based environmental problems with the participation of the provinces of Hebei, Liaoning and Shandong and the Municipality of Tianjin surrounding the Bohai Sea. In June 2009, China officially launched Phase III of the ICM project under PEMSEA (GEF/UNDP/ PEMSEA Project on the Implementation of the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA), which prioritized: (a) the development and implementation of national policies and plans for an integrated coastal and ocean management; (b) the development and implementation of coastal environmental management on the basis of watershed ecosystems of three provinces and one municipality bordering the Bohai Sea; (c) the dissemination of the concepts and best practices of integrated coastal management in the 10 parallel sites in the coastal cities of Fangchenggang, Yangjiang, Wenchang, Haikou, Panjin, Laoting, Qingdao, Dongying, Lianyungang and Quanzhou; (d) the enhancement of the integrated coastal management in Xiamen; and (e) the establishment in Xiamen of the secretariat of the PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG). According to statistics, the total length of the continental coastline of the 10 ICM parallel sites is more than 3,500 km, which makes up 20 percent of the mainland coastline of China.

Through the efforts of PEMSEA, China and the 11 other East Asian nations signed the Putrajaya Declaration in 2003 establishing the SDS-SEA as the regional cooperation platform for addressing international commitments to such instruments as Agenda 21, the Millennium Development Goals, the Implementation Plan for the World Summit on Sustainable Development and other global and regional environmental conventions concerning coastal zones, islands and oceans. Since 2006, China has signed the Haikou Partnership Agreement for the Implementation of the SDS-SEA, the Manila Declaration on Strengthening the

Implementation of ICM for Sustainable Development and Climate Change Adaptation in the Seas of the East Asia Region and the Changwon Declaration towards an Oceanbased Blue Economy: Moving Ahead with the SDS-SEA with relevant East Asian nations.

Through these agreements, China has committed to achieve the following goals by 2015<sup>1</sup>:

- 1. A self-sustained regional partnership mechanism for the implementation of the SDS-SEA;
- National coastal and ocean policies and supporting institutional arrangements in place in at least 70 percent of partner countries;
- ICM programs for sustainable development of coastal and marine areas and climate change adaptation covering at least 20 percent of the region's coastline;
- A report on the progress of ICM programs every three years, including measures taken for climate change adaptation.

China's local governments are also partnering with local governments in the region. The local governments of the 10 parallel sites and Xiamen, signed the *Dongying* 

Declaration on Building a Blue Economy through ICM, during the 2011 PNLG Forum. The local governments commit to implement the PNLG Strategic Action Plan for 2011-2015, including implementation of the PEMSEA Code and Recognition System across 50 percent of the PNLG membership as a certification of local government achievements and success in sustainable coastal development through ICM implementation.

China, a coastal state, deems it imperative to scientifically develop resources and protect the marine environment towards sustainable economic and social development through land-sea coordination especially in the present context of rapid economic development and urbanization, increasing growth in population and increasing shortage of land natural resources.

In order for China to effectively fulfill its commitments to the SDS-SEA and to achieve the objectives of the agreements, China's Framework Plan for the Implementation of the SDS-SEA (2012-2016) was developed.

<sup>&</sup>lt;sup>1</sup> Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) Implementation Plan (2012-2016), GEF/UNDP/UNOPS Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), 2012.

# The Challenges in China's Sustainable Ocean Development

## 2.1 The Undertaking of Sustainable Ocean Development

Sustainable development was officially recognized in 1994 as one of the development strategies in China and since then, it has been used as a framework for the government's agenda, plans and actions. *China's Ocean Agenda 21* (1996) and the *White Paper of the Development of China's Ocean Programme* (1998) published by the Chinese Government are the landmark documents in the implementation of sustainable ocean development in China.

The implementation of China's Ocean Agenda 21 that set down the objectives and priority areas for sustainable ocean development was a watershed in China's national economic and social development. For the past 15 years, the philosophical concepts embodying sustainable development and strategies in achieving those goals, such as a wealthy and harmonious society, an environment-friendly and resource-saving society and an ecological civilization were discussed and proposed in government plans and programs. In the 21st century, the Party and the state paid more attention to the development of the ocean, such that policies for sustainable ocean development were continuously revised and perfected and the capacities for sustainable ocean development were steadily upgraded.

The 10th Five-Year Plan Programme for National Economic and Social Development adopted in 2001, identified — for the first time in the country's top national plan — the objectives for ocean development: "to enhance the strength in ocean resource survey, development, protection and management, to strengthen the development of marine utilization technologies and the development of ocean industries, to strengthen the utilization and management of sea areas and the maintenance of national ocean sovereignty rights and benefits." In 2002, the report adopted by the 16th National Congress of the Communist Party of China proposed "to implement ocean development," stating for the first time in a report to the Party's Congress, the care and development of oceans. The National Ocean Economy Development Programme published by the State Council in 2003 set down the key tasks to develop the ocean economy and to protect the marine ecological environment. The 11th Five-Year Plan for National Economic and Social

Development reviewed and adopted by the Fourth Session of the 10th National People's Congress in 2006 for the first time placed the ocean program in one independent chapter. It proposed definitively to promote ocean public awareness, maintain maritime rights and interests, conserve coastal and marine ecology, to develop ocean resources, implement integrated coastal and ocean management and promote ocean economic development, and make practical planning for the rational utilization, protection and development of ocean resources. The 17th Party's Congress in 2007 reiterated "to develop ocean industries." The National Ocean Development Programme adopted by the State Council in January 2008, demanded in detail the objectives and tasks for marine ecological conservation and environmental protection. During an inspection tour in Shandong in 2009, Hu Jintao, the General Party Secretary of the Communist Party of China, emphasized the promotion of the development of the ocean economy with more effort, as well as scientifically develop ocean resources, and foster dominant ocean industries. To leave no room for doubt on China's resolve to address the issues and concerns of the oceans, Chapter 14 of the 12th Five-Year Plan for National Economic and Social Development adopted by the Fourth Session of the 11th National People's Congress in March 2011 proposed "to promote the development of the ocean economy" in two sections — "optimizing the marine industry structure" and "strengthening integrated ocean management." These set down the strategic plans on land-sea coordination, develop and implement the strategies for ocean development, enhance the capability in ocean development, control and integrated management and scientifically plan the development of an ocean economy. Sustainable development of China's oceans is of paramount interest to the country.

Under the guidance of the macro strategies for national economic and social development and with the continuous and in-depth implementation of the concept of scientific development, China's policies for a sustainable ocean development has been further integrated and improved. The principle of sustainable development of the ocean has been integrated into various fields of undertakings. Relevant sector policies in the implementation of action plans in different stages have placed equal emphasis on ocean resource

development, ecological conservation and environmental protection through the coordination of marine environmental renovation and land-based pollution control, prior protection of natural resources and environments in near-shore waters, gradual development to offshore waters, innovation of the mode of resourcesaving and environment-friendly development. At the same time, ocean management has gradually shifted to integrated management from sector management in the past. Management tools have changed gradually from being dominated by administrative tools to one that integrates legislative, economic, technical and administrative tools. More importantly, ecosystem-based coastal and ocean management have been gaining more and more adherents and foothold in China's policies and plans in some regions.

#### 2.2 Our Urgent Issues on Ocean Management

The development in the past decades showed that the best way to comprehensively address the marine and ocean issues was to create an administrative body on ocean management. Thus, in 2008, the State Council entrusted the State Oceanic Administration (SOA) new functions in advancing ocean strategic studies and in integrating coordinated efforts and tasks on ocean affairs. The SOA is now the competent department dedicated to coastal and ocean administrative management more than other functional departments such as the Ministry of Environmental Protection, Ministry of Agriculture, Ministry of Land and Resources, Ministry of Communications and the State Forestry Administration, and local governments of the coastal provinces, municipalities and counties and their oceanrelated departments.

China's legislative system supports ocean management by handing out legal mandates to departments that have ocean-related functions and activities. For example, in the area of marine ecological-environmental protection, the SOA is responsible for marine environmental supervision and management while the Ministry of Environmental Protection exercises, together with other relevant departments, marine environmental management in accordance with the Environmental Protection Law of the People's Republic of China and the Marine Environmental Protection Law of the People's Republic of China and other complementary regulations. The coordinated mandated functions have improved the effectiveness of marine ecological-environmental management that resulted in the formation of a series of national and local special programs for marine biodiversity conservation and ecological-environmental protection and in mainstreaming marine ecologicalenvironmental protection into national and local social and economic development programs.

In the area of sea use management, the SOA and local governments at all levels enforce the marine functional zonation system, the sea ownership and users rights system and the pay-and-use sea systems in accordance with the Sea Use Management Law of the People's Republic of China. In the area of sea-island management, the SOA and local governments at all levels implement the sea-island protection and ecological conservation plan, the ownership and users rights of non-inhabitant sea-islands and the protection and supervision and check on sea-islands with special uses in accordance with the Sea-Island Protection Law of the People's Republic of China.

In the area of marine fishery resource management, the Ministry of Agriculture and local governments at all levels exercise management in accordance with the *Fishery Law of the People's Republic of China* and the serial legislative system concerning the development and utilization of marine biological resources.

Integrated coastal management (ICM) has become an effective approach for coordinating land and sea use planning, solving resource use conflicts and conservation of coastal and ocean ecosystems as envisioned in *China's Ocean Agenda 21*. China has been actively promoting the integration of the ICM system at the national level and demonstration at the local level.

With the aid from GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Xiamen has developed, through years of ICM practice, the Xiamen Model of "legislation in advance, concentrated coordination, science back-up, integrated law enforcement, financial guarantee and public participation" for ICM. It has also been used as a model in the integrated coastal management of the nations of the East Asian Seas. Today, there are more than 20 ICM projects at the local level in China with some projects already scaling up to the river basin—attempting to implement an ecosystem-based management from the watershed to the sea.

On March 2, 2010 in Beijing, the Ministry of Environmental Protection and the SOA signed a Framework Agreement on the Development and Improvement of a Cooperative Working Mechanism for Marine Environmental Protection, which heralds the further formation of a new phase of marine environmental protection on the basis of land and sea coordination.

Even though China has developed its legislative system for marine resource and environmental management, which has improved the planning system and efficiency of its law enforcement task forces at the national, provincial, city and county levels and has built the capacity for environmental management on the jurisdiction of waters, some gaps at the present phase are yet to be bridged.

First, harmonize the management mechanism. China adopts a management system that integrates overall supervision and sectoral and hierarchical management where the functions of resource development and resource management departments overlap. The segmented management system has artificially divided the marine ecosystem as a functional unit into different areas of supervision and management by different agencies, thus, compartmentalizing the rules and functions of an integrated marine ecosystem. The situation then fails to solve marine ecological-environmental issues across administrative borders and agencies due to the limitations of the management mechanism that lacks coordination and a common and coherent enforcement of the laws.

Second, harmonize the legislative system. Some of the current laws and regulations were developed to address the development, utilization, protection and management of sectoral marine resources. On one hand, the sector laws over-stress the importance and peculiarities of certain species of marine resources and its development and utilization under sector management and pays improper attention to the needs and benefits of other industrial sectors and marine resources. A situation is created where prominence is given to sector features, a lack of coordination among different sectors and conflicting regulations and policies are issued by various departments. The result is an absence of a united national ocean policy.

On the other hand, many laws and regulations pay more attention to the contents and structure of common, similar and general environmental protection issues, therefore, failing to adapt to the ecosystem-based integrated ocean management due to lack of solutions to practical environmental issues in different regions, and more specifically, due to the lack of regional environmental management legislation.

Third, develop a more effective link-up between land and sea environmental protection programs and action plans. China has developed many pollution preventing and controlling programs at the national, regional and local levels and many integrated coastal and ocean management programs have been implemented at the national and provincial levels. However, these programs

have not been properly integrated to the watershed and its connection to the sea. This has failed to effectively link ocean planning with watershed-wide planning that should be integrated to sea use planning and land use planning. The result is a separation in the management of the land and sea environments, which fails in the effective unification and integration of resources and environment management, thus, further aggravating the degradation of marine ecosystems and environmental pollution. Integrated decisionmaking between marine environmental protection and coastal regional development should be further strengthened.

## 2.3. Marine Economy and Coastal Regional Development

China is a coastal nation endowed with both a vast land area and sea expanse, with more than 18,000 km of mainland coastline, more than 14,000 km of island coastline, and more than 6,900 islands, each with a land area of over 500 m². The rich marine natural resources and valuable ecosystem services of the country's coastal and sea areas to provide the foundation for its continued national economic and social development.

In the past 30 years of open and reform movement, marine economy in China has developed rapidly and has become an outstanding and strategic growth area in the national economy. Since the 21st century, the growth of the marine economy in China has grown faster in the national economy than in the state and the coastal regions during the same period. Marine economy contributes to more than nine percent to the national GDP and over fifteen percent to GDP in the coastal region. The marine economy has become an important sector of the national economy.

As the marine economy grows, the marine industrial structure and system have been optimized and continue to improve. The structure of the value-added from major marine industries has changed from "1-2-3" to "3-2-1". The unitary industry structure consisting of marine fisheries and salt production has changed into an industrial system with outstaying superiority and comparative integration of the dominant sectors such as transport, coastal tourism, offshore oil and gas, shipbuilding and supportive sectors of offshore power, seawater utilization, marine engineering and construction, biological pharmacy and marine science and education and other services.

The regional distribution of the marine economy is taking shape as indicated by an outstanding superiority of the marine cluster sector and an increasing contribution of the marine economy to the regional economy.

The Pan-Bohai Sea Economic Zone, Changjiang Delta Economic Zone and Zhujiang Delta Economic Zone have become the zones with the highest density of marine economy in China. In 2010, the gross ocean production in the Pan-Bohai Sea Economic Zone, Changjiang Delta Economic Zone and Zhujiang Delta Economic Zone reached RMB 3,362 billion, accounting for 87.5 percent of the national gross ocean production.

Endowed with a beneficial geographical location, rich marine natural resources and preferential policies, the economic and productive elements in China are growing rapidly in the coastal region. Now, a coastal economic belt with a highly developing economy has taken shape and has become a region of high urbanization with a concentrated population and a developed economy. From 2001 to 2010, GDP from the 11 coastal provinces and municipalities grew by more than 10 percent every year reaching RMB 22,812.5 billion in 2010. The total population in the coastal zone reached 576 million.<sup>2</sup> The coastal region in China, with only 13 percent of its land area, accounts for 43 percent of the country's total population and contributes more than 57 percent to GDP and more than 90 percent to import and export trades.

During the 11th Five-Year Plan period, a series of coastal regional economic development plans were approved by the state and implemented. The regional economic zones along the coast from the north to the south, such as (a) Liaoning Coastal Economic Zone, (b) Caifeidian Circular Economic Demonstration Zone in Hebei, Tianjin Coastal New Zone, (c) Yellow River Delta Economic Zone of High Efficient Ecology of Shandong, Jiangsu Coastal Region, (d) Changjiang Delta Economic Zone, The Economic Zone to the Western Coast of Taiwan Strait of Fujian, (e) Zhujiang Delta Economic Zone, (f) Beibu Gulf Economic Zone of Guangxi and (g) Hainan International Tourism Island are laid out connectively. The coastal economic domain of China has gradually become intact, further promoting a smooth implementation of the marine economy and regional development strategies along the coast.

The 12th Five-Year Plan for National Economic and Social Development emphasized land-sea coordination, development and implementation of strategies for

ocean development, enhancement of the capacity in ocean development, control and integrated management, and scientific planning of the development of the ocean economy. In 2011, to promote the development of a blue economy and drive the social and economic levels in the coastal region, the state designated the provinces of Shandong, Zhejiang, Guangdong and Fujian as the pilot sites for marine economic development and approved to establish the Zhoushan Comprehensive Ocean Development Pilot Site. The aim was to promote a change in the patterns for national economic development by developing a blue economy that will bring more opportunities for a sustainable ocean development in China.

## 2.4. Challenges to the Marine Ecological Environment

The Chinese government has placed great importance to marine ecological-environmental protection work. China has established the rules and system for marine environmental protection through the Marine Environmental Protection Law of the People's Republic of China as the core. The government has developed and made public a series of national and local specific programs, strengthened the supervision and management of marine environmental protection and intensified marine pollution prevention and control. It has established various forms of marine protected areas (MPAs) and has carried out ecological recovery projects in accordance with local conditions. It has also set up a national marine environmental monitoring system, a product of numerous testings, which have generated monitoring tools. In addition, the emergency response to marine environmental incidences, such as red tide, green tide or oil spills has been strengthened in a comprehensive way. The trend of a deteriorating marine environment in local waters has been checked and the service functions of typical marine ecosystems are undergoing restoration. However, the marine ecosystems in China are distinctively fragile and there continue to be many weak links in its marine ecological-environmental protection work. Challenges continue to confront China's sustainable ocean development plan.

<sup>&</sup>lt;sup>2</sup> China Marine Statistical Yearbook 2010, 2011.

# Guidelines, Principles and Objectives of the Implementation Plan

#### 3.1 Guidelines

The guidelines to the *China's Framework Plan for* the Implementation of the SDS-SEA were developed to (a) further implement the concept of scientific development, (b) strengthen marine ecological and environmental protection by promoting changes in development patterns for marine economic development as the main feature and build capacity for an integrated coastal and ocean management as the core plan, (c) to prioritize the growth influences of a blue economy by asserting the strategy for ocean development using science and technology, (d) strengthen the capacity of innovation in marine science and technology and promote institutional innovation for integrated ocean management and (e) ensure sustainable use and development of the ocean by perfecting a marine ecological and environmental monitoring system and improving public ocean services.

#### 3.2 Basic Principles

## 3.2.1 Implement the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) to achieve identified goals

The First East Asian Seas (EAS) Congress and Ministerial Forum in Putrajaya, Malaysia in 2003 adopted the resolution requiring the Country Partners of the East Asian Seas to develop a national implementation plan for the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA). The Resolution clearly stated the four objectives identified in the Putrajaya Declaration, the SDS-SEA, the Haikou Partnership Agreement for the Implementation of the SDS-SEA and the Manila Declaration on Strengthening the Implementation of Integrated Coastal Management for Sustainable Development and Climate Change Adaptation in the Seas of the East Asia Region, which were signed by various Country Partners, to be adapted as objectives for the national implementation plan. The present implementation plan adapts to the SDS-SEA and endeavours to achieve the abovementioned objectives in the course of implementing the action plans.

### 3.2.2 Align with national programs that promote the development of oceans

The SDS-SEA should be jointly implemented by various nations in accordance with the practical situation and priorities in each of the Partners' national, social and economic developments, plans and objectives. At the same time, the implementation of the plan should be shared by the various partners in which the government budget plays a leading role.

Thus, the implementation plan should align with the 12th Five-Year Plan of the government at all levels and the key programs in the system of the State Oceanic Administration.

## 3.2.3 Link land and sea coordination to improve the ICM system

Assert the coordination between land and sea planning and pursue the innovation of the ICM system. Enhance the capacity in integrated ocean management across the agencies and regions by coordinating coastal and ocean management activities in accordance with the geographical location and natural attributes of the areas of watershed, estuary, coastal zone and near-shore waters and implementing an ecosystem-based regional ocean management.

## 3.2.4 Engage in multiple participation and promote international cooperation

The implementation of the SDS-SEA largely depends on the capacity of the governments in providing services to the communities and on public participation. Therefore, the development of the implementation plan should be to engage the participation of multiple parties — the local governments, social communities and private sectors — to draw on collective wisdom and gather useful ideas. By implementing the plan, China will actively participate in the regional cooperation of the East Asian Seas and promote further regional cooperation in ocean management and technological transfers.

#### 3.3 Goals

The overall goals of the China's Framework Plan for the Implementation of the SDS-SEA are to further upgrade the capacity for integrated ocean management, effectively improve the marine ecological environment, gradually establish a marine disaster prevention and mitigation system, promote the development of an ocean legislative system, strengthen public ocean awareness, vigorously implement the strategy of ocean development by relying on science and technology, and promote marine economic development better and faster in order to make the blue economy an important driving force for sustainable development in China. The specific objectives are:

## 1. To push forward the development of a coastal and ocean legislation system

• To promote the development of a coastal and ocean legislative system by taking the Basic Laws of the Seas and Oceans, the Sea Use Management Law, the Island Protection Law and the Marine Environmental Protection Law as the core, and the sector and local laws and regulations as the supplements in the management of the seas and oceans to ensure an orderly and beneficial development of marine resources and to promote a sustainable ocean and coastal economic and social development.

#### 2. To optimize integrated coastal and ocean management

- To further promote the reforms in the ocean management system and create an ecosystembased ocean regional management and ocean management coordination mechanism.
- To ensure that more than 20 percent of the coastline in China will be run by an integrated coastal management program by 2015.
- To promote and implement the standardized certification system for PEMSEA integrated coastal management; and to increase the number of PNLG members in China by 2015 as well as increase

the number of successful PNLG members in their implementation of sustainable development programs.

### 3. To promote the change of marine economic development patterns

- To further optimize the structure of the ocean economy, promote the development and enhance the quality of growth of the ocean economy. This will be achieved by optimizing the patterns in marine resource utilization and protecting the marine ecological environment, by promoting innovations in marine science and technology and institutional mechanisms, and by adopting scientifically designed macroeconomic adjustment and control systems and operational mechanisms.
- To strengthen the capacity of human resources. This will be achieved through the development and implementation of an interagency and inter-sectoral human development strategy that will increase the number and significantly improve the capacity of marine human resources. The agency will be balanced in structure with an efficient staff who will be well-trained to meet the needs of new and emerging marine development areas.

#### 4. To enhance public ocean awareness

To provide support to sustainable ocean development in China by: (1) undertaking publicity and education activities to increase public awareness on marine environmental protection and legislation; (2) enhancing awareness for rational utilization of the ocean's natural resources by promoting the concept of scientific utilization of the ocean's natural resources across societies/sectors; (3) improving ocean knowledge education towards development of new concepts about the oceans; (4) advocating marine culture and advancing the development of marine culture industries; and (5) promoting marine culture innovations for developing awareness-oriented marine culture development strategy.

# The Areas, Measures and Tasks for Implementation of the SDS-SEA in China

China should adopt an integrated policy and set of measures in the implementation of a sustainable ocean development strategy. The basic approach is to come up with a coordinated economic and social development plan of the ocean environment and its resources through an ocean development strategy and programs. The ocean development plan should be coordinated with the marine ecological-environmental protection plan that is focused on the strategic

needs for a national, economic, and social development plan. The achievement of this plan will depend on an ecosystem-based integrated coastal management system that uses the principles of an ecosystem-based, land-sea coordination and river-sea integration; and promotes the participation of various stakeholders by organizing ocean task forces, innovating institutional and financial mechanisms, and creating a high level decisionmaking institution for stakeholders across various agencies.

#### Area 1. Develop policies, laws and mechanisms for integrated coastal management

Creating policies, laws and mechanisms for an integrated coastal management is the key to implement the sustainable ocean development strategy in China.

Measure 1. Promote the development and implementation of a Strategy and Program for Coastal and Ocean Sustainable Development

## Task 1. Study and develop the sustainable coastal and ocean development strategy/program

Study and promote the development of a sustainable ocean development strategy/program using the principles of integrated ocean management based on land-sea coordination and ecosystem-based governance. Propose the basic principles, guiding principles and strategic goals for sustainable ocean development in China and the tasks for regional economic coastal development, ocean economic development, marine ecological and environmental protection, and conservation of natural resources. These will provide a macro-level guidance to marine ecological and environmental protection and sustainable development. Emphasis will be placed on the assessment of the current status of the coastal socioeconomic development, the patterns of economic growth and their opportunities and challenges, understanding of the services and processes of coastal and ocean ecosystems and analyzing the dynamic relationship between current ocean development and the services and ecological processes of coastal and ocean ecosystems.

### Task 2. Implement a strategic environmental assessment of policies and programs on ocean-related industries

Undertake studies on strategic and forward-looking issues to address the proliferation of heavy industries, such as chemicals, petroleum, ship building and machineries along the coast. Implement a strategic environmental impact assessment of the policies and programs of heavy industries and chemical industries and develop mechanisms to supervise and monitor the implementation of the programs that ensure the realization of ocean sustainable development goals.

## Task 3. Evaluate the effectiveness of the implementation of an ocean economy development policy/program

Evaluate the effectiveness of the implementation of an ocean-based economic policy and programs and assess the potential impact of the implementation on the marine ecological environment, so as to provide policy recommendations on environmental safeguards for marine economic development.

# Measure 2. Strengthening the legislative framework that promotes integrated coastal and ocean management

The implementation of a sustainable ocean development strategy should address the ecological-environmental issues. In the past, administrative measures were used to implement a sustainable ocean development strategy but a better approach is to strengthen the capacity of ICM implementation though legislation and law enforcement and gradually promote the application of economic tools.

## Task 4. Study and draft integrated coastal and ocean management legislation

Study and draft the *Basic Ocean Law of the People's Republic of China* as the fundamental law for implementing ocean development and management that will pursue an ocean economy, protect the marine ecological environment and build the capacity for sustainable development. *The Basic Ocean Law* should give expression to the principle of an ecosystem-based management. To further advance an ocean-related legislative agenda and promote marine ecological environmental protection, draft the Coastal Zone Management Law of the People's Republic of China and the Regional Environmental Management Law of the Bohai Sea of the People's Republic of China and revise as soon as possible the Marine Environmental Protection Law of the People's Republic of China.

#### Task 5. Demonstration for the implementation of integrated coastal management legislation

Three demonstration sites will be selected from coastal provinces and municipalities and one autonomous region to pilot the development of integrated coastal management legislation to coordinate a marine pollution management system and the management of the watershed and sea area. As a tie-up with Task 4 and on the basis of the experiences in the demonstration site, draft a legistative bill on integrated coastal management for review by the provincial or municipal people's congress.

# Measure 3. Promote the establishment of a coordinated mechanism for an integrated coastal management system

An integrated coastal management system involves many agencies in order to address the complex issues of sustainable ocean development. The effective implementation of ocean policies and enforcement of ocean legislation can only be ensured through coordinated mechanisms at the central and local levels and the formulation of joint policies.

#### Task 6. Promote the establishment of a leading group for oceanic affairs at the state level

Reform the institutional system of ocean management and establish a leading group for ocean affairs mandated to formulate the national ocean development strategy, strengthen communication among various ocean-related administrative agencies, and address major issues across agencies, sectors and regions.

## Task 7. Establish interagency leading groups for ocean affairs in coastal provinces and municipalities

Establish interagency leading groups for ocean affairs in coastal provinces and municipalities for monitoring, evaluation and information dissemination of ocean economic performance on the implementation of integrated ocean management, the coordination of the ocean development activities of various ocean-related agencies and sectors, and the optimization of the industrial structure of an ocean economy and the relocation of the distribution of ocean industries.

## Task 8. Establish interagency leading groups for ocean affairs in the demonstration sites in the regions, cities and countries

Set up an integrated ocean management system that has an ocean administrative office to administer agencies responsible for environmental protection, planning, and science and technology or similar agencies with specialized responsibilities. The lead group should strengthen the integrated ocean management system or setup by providing assistance in organizing, coordinating, and guiding the implementation of ocean-related policies and measures. The lead group should develop a mechanism that will efficiently and effectively address emergent marine pollution incidents.

## Measure 4. Enhance public ocean awareness

## Task 9. Promote public ocean awareness and develop a system for public participation

Promote public awareness and education on marine ecological environmental protection and coastal development through media. The public should be made to understand the value of the oceans and actively participate in protecting the marine environment. A platform for effective public participation should be built to encourage more stakeholders to participate in a marine development action plan.

## Area 2. Ecological and environmental protection, disaster prevention and mitigation using an integrated coastal management system

Apply the methodologies of integrated coastal management in marine ecological protection, environmental pollution prevention response to climate change and disaster prevention and mitigation.

## Measure 5. Integrate the management of key watersheds and coastal waters

Integrate the management of key watershed and coastal waters on the basis of land-sea coordination, river-sea integration and ecosystem consideration in order to address marine ecological and environmental degradation.

## Task 10. Promote pollution discharge reduction and integrated management at demonstration sites in the watersheds of the Bohai Sea

Carry out the Blue Bohai Sea Action and develop an integrated management mechanism in the transboundary watersheds and coastal waters along the Bohai Sea. Promote the development and implementation of the regional environmental management law in the Bohai Sea region and develop an optimized programme to control watershed and estuarine pollution through the coordination and unification among the agencies mandated with ocean, environmental protection and water conservation. Reduce the pollution load from the rivers, such as the Daling River, Xiaoqinghe River, Luanhe River, Haihe River and Guanglihe River that flow to the sea by strengthening the protection of the water sources of the watersheds. Strengthen integrated management of estuarine silt control from water conservation projects in the watersheds and maintain ecological health of the estuaries and their adjacent waters for the realization of a sustainable social and economic development in the Bohai Sea region.

## Task 11. Promote the implementation of the system to control total pollution load on the basis of land-sea coordination and marine environmental carrying capacity

Develop land and sea planning linkage at the demonstration sites in the coastal cities of Panjin, Xiamen and Quanzhou for better connection between the urban master plan, port plan and marine functional zoning. Develop a scientific system to control the total load of pollution discharges that will tally with local situations by controlling the land-based pollution discharges into the sea in accordance with the coastal marine environmental carrying capacity and establishing the control index for maximum composition of pollution from the key land outfalls. Provide demonstration models for the implementation of an ICM system and the protection of a marine ecological environment for other regions by controlling the scale in ocean development in accordance with the carrying capacity of a marine ecosystem.

## Task 12. Establish a land-sea linkage ecological and environmental monitoring and information sharing platform

Long-term and continuous marine environmental monitoring data and in-depth studies on ocean sciences are

the bases for scientific decisionmaking and effective ways in solving marine ecological and environmental problems. Ocean administration agencies and ocean-relevant agencies should coordinate in the integrated monitoring and linkage in the watersheds, estuaries and the coastal waters by standardizing monitoring indicators and technical norms and by constructing an environmental monitoring system that links the atmosphere, watershed and ocean/coastal waters, and develop a data and information sharing platform.

#### Measure 6. Respond to climate change and prevent and control disasters in the coastal waters and the fragile zones of the ocean economy

#### Task 13. Formulate and implement a national program to respond to climate changes in the coastal areas

Formulate and implement a national program to respond to climate change in coastal areas, carry out studies on low-carbon development strategies and the general strategy to adapt to climate change, slow down and adapt to impacts of climate change on the ocean and decrease to the greatest extent the social impacts and economic losses in the coastal region brought about by global climate change.

Develop an implementation report for integrated coastal management activities including adaptation to climate change every three years.

### Task 14. Capacity building in the coastal area to adapt to climate change

Promote monitoring and impact assessment of sea level change to strengthen monitoring and management of ocean and coastal ecosystems, and to carry out zoning of coastal climatic changes and natural disaster risks and cost-effective analysis of responding measures to promote restoration and reconstruction of ecologically fragile zones and ecosystem functions. Mainstream climate change adaptation and disaster-mitigation measures into a social and economic development program.

Formulate program standards and technical guidelines on adapting to climate changes of ocean-related projects in communication, energy, construction, ocean engineering and land reclamation from the sea.

#### Task 15. Capacity building in early warning and forecasting of marine disasters

Gradually complete a three-dimensional observation system consisting of floating and dived buoys, satellites, radars, ships, platforms, and coastal land-based (island-based) observation stations and further optimize their distribution, extend their observation range, enhance observation capability in the key waters, enrich observation tools and increase observation frequency. Increase the precision of forecasting storm surges, tsunamis, disastrous sea waves and sea ice, and pursue studies on the origins

of seawater intrusion and coastal erosion. Accomplish a dissemination system for marine early warning information and provide services for coastal social and economic development.

#### Task 16. Carry out coastal ecosystem restoration projects

Protect coastal wetlands and build up coastal windbreak forests and continuously strengthen measures for the protection, restoration and construction of mangroves, coral reefs and seagrass beds. Develop demonstration sites for marine ecological construction in areas with the concentration distribution of typical marine ecosystems, the sea areas with alien species intrusion, sea-islands and the sensitive areas to climate change for restoring their capacity to maintain marine biodiversity. Work hard to restore and set up mangrove zones by 2016 for the construction of coastal natural barriers and the enhancement of the capability to mitigate marine disasters along the coast and the level of coastal ecosystems to respond and adapt to climatic change.

#### Task 17. Develop new fisheries patterns

China stands as number one in the world in mariculture. The development of mariculture has played a positive role in improving community life, providing employment and promoting ocean economic development. However, the traditional patterns in mariculture have brought about many negative impacts on the marine environment. Develop, with great effort, an environment-friendly mariculture industry, promote the development of integrated mariculture patterns with multiple trophic levels and advocate new mariculture patterns with the culture of shellfishes and sea algae as key elements.

## Task 18. Accomplish an early warning and emergency response system for major marine pollution incidents

With the accumulation at the coastline of heavy and chemical engineering industries and the continuous expansion of oil transport and offshore oil and gas exploitation, the potential risks from ocean development has become increasingly higher. In addition, accidents such as the oil spill in Bohai Sea and the explosion of oil pipes in Dalian make it imperative to build an early warning and emergency response system for major marine pollution incidents by following the precautionary principles for marine ecological conservation. Develop a mechanism to communicate major marine pollution incidents and a mechanism to assess pre-warning and informationsharing of potential environmental risks in the region, complete the emergency handling system for regional emergent marine environmental matters, and strengthen the supervision and management of the main agency responsible for determining potential environmental risks and promote the implementation of various emergency measures.

Formulate the environmental sensitivity index map for oil spill and chemical pollution in the coastal area and develop a local emergency response plan.

# Measure 7. Protect marine biodiversity and maintain a healthy marine ecosystem

## Task 19. Identify coastal areas for priority protection in areas subject to land reclamation

On the basis of scientific assessment of coastal environmental capacity, ecological security, ecosystem services and their valuation, evaluate the potential for land reclamation in the coastal waters to determine the coastal and ocean ecological sensitivity zone, fragile zone and ecological security zone; to establish a regional priority protection system; to delineate the priority protection zones and prohibit reclamation in these zones. In the near-term, focus should be made on the control of land reclamation of bays, estuaries, islands and sandy banks in accordance with the priority protection system.

## Task 20. Strengthen marine protection area networking and capacity building

Improve the survey, study and protection of typical marine ecosystems and biodiversity, and designate marine nature reserves and marine special protection areas. The total area of various marine protected areas (MPAs) should account for three percent of jurisdictional seas by 2015 and five percent by 2020. On the basis of current protected areas, marine nature reserves, marine special protected areas or marine parks should be designated according to uniqueness and representativeness of ecosystems and distribution of endangered species so as to create MPA networks to maximize the effectiveness of MPAs. Promote capacity building for the current MPAs and build up their management level, and develop and establish MPAs with specific features for healthy marine ecosystems.

#### Task 21. Promote the conservation and artificial hatchery of marine living resources

Establish an ecosystem-based marine living resources conservation and propagation system by:
(1) developing a conservation-oriented marine capture fishery to promote effective conservation and sustainable fishery development; (2) further reducing intensity of capture fishery efforts and establishing protected areas for genes of fishery species and stock; and (3) protecting, restoring and conserving key fishery habitats and biodiversity, optimizing artificial reefs and marine farms, and implementing a rational plan for propagation and release of artificially hatched larvae to enhance success of fishery stock replenishment efforts.

Speed up the development of marine ecological restoration projects in the demonstration sites such as in Panjin, Dongying and Lianyungang and promote construction of artificial reefs for the development of "ocean forest." Expand the efforts for artificial enhancement and release of artificially hatched larvae and strictly enforce fishery enclosure season and penalize those who damage marine living resources. Develop mariculture using algae and shellfishes as the dominant species in suitable shallow seas.

#### Area 3. Capacity building and dissemination of ICM experiences and models

Capacity building of human resources and dissemination of ICM experiences and models are significant factors in a successful implementation of the SDS-SEA

## Measure 8. Implement a strategy to develop people for marine science

### Task 22. Develop and implement programs to attract talented people to address ocean concerns

Implement the Outlines of the National Long-term Plan for Ocean Human Talent Development (2010-2020). Coordinate a human talent development plan in various ocean-related agencies, and guide human talent development in the coastal area, integrate and optimize human resources in science and technology in the various disciplines in marine science, and build ocean human talent task forces across regions agencies and sectors. Develop an operational mechanism for linking up national and local ocean human talents and a mechanism for exchanging land-relevant and sea-relevant human talents. Combine, organically, human resource development and major ocean programs and major ocean engineering projects to promote human talent development in their employment and practices, and embody advanced human development concepts by relying on employment and practices.

#### Task 23. Develop professional training for employees engaged in ICM

The scientific research institutions, universities, and colleges with qualified educational conditions are encouraged to carry out education and training for talented people engaged in ocean management, and science and technology, and to provide human resources and serve as intellectual reserves for continued studies on sustainable development on ocean industries. Strengthen on-the-job professional training for employees in the ocean sector to enhance their capacity in integrated coastal and ocean management.

## Measure 9. Disseminate experiences in ICM

#### Task 24. Draft the plan to disseminate ICM in China's coastal areas

Disseminate experiences of ICM in China's coastal areas and demonstrate coastal ecological management in order to enhance China's capability to develop and implement the national strategy for sustainable ocean development and ensure that more than 20 percent of China's continental coastline will implement ICM by 2015.

#### Task 25. Publish and disseminate the experiences in ICM in various forms

Compile case studies and models that show effective implementation of ICM for adaptation to climate change, prevention and reduction of loss from natural disasters, conservation of habitats, water resource management, fishery and pollution control and disseminate and promote them through various channels such as websites, bulletins and teaching materials.

#### Task 26. Organize an annual ICM forum

Support the development of the World Ocean Week in Xiamen (XWOW) and mobilize people engaged in ocean management and ocean work from coastal provinces and cities to participate in the XWOW and make it a forum for domestic and international cooperation and exchange. Organize an annual ICM forum to serve as exchange forums on implementation models and experiences in ICM and to provide experience models to formulate and perfect the national strategy for sustainable coastal and ocean development.

#### Task 27. Develop and perfect the indicator system for ICM

Complete the indicator system for ICM. The indicator system should cover economic, social, environmental and policy elements. The standards and sources of data should be unified, and the form of announcement should be formalized. In the application of the indicator system to a practical coastal zone, the indicator system should be properly adjusted and supplemented or divided further to make the indicators more coastal zone-specific. The indicator system should be promoted in a trial at the demonstration sites to provide guidance for its overall implementation of ICM in China. A report on the State of the Coasts should be compiled periodically.

#### Task 28. Support the PNLG

The coastal governments with qualified conditions are encouraged to participate in the PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG) in order to promote the influence and coverage of the PNLG. The number of PNLG members in China should increase by 2015. Various ways should be created for the PNLG members to participate in international ocean forums. The exchange of experiences and information sharing should be promoted among the PNLG members.

Marine scientific research institutions and training institutions are encouraged to participate in the PNLG as associate members and should provide technical advisory services and support in education and training activities related to the implementation of ICM and sustainable coastal and ocean development.

#### Area 4. Sustainable financing mechanism

Sustainable financing mechanism is an important guarantee to the implementation of ICM. A community-based investment and funding mechanism from multiple channels should be created for applying integrated environmental economics tools to standardize various ocean utilization activities for the internalization of environmental costs and coordinated development between marine ecological environment and the economy.

#### Measure 10. To develop and perfect the marine ecological compensation/ indemnity mechanism

The State will develop marine ecological compensation/indemnity mechanism, especially for the key issues of key engineering projects (including land reclamation from the sea) on the sea, offshore oil spills, marine protected areas, the impacts on estuaries and coastal waters from watershed activities. The demonstration, promotion, and application of compensation/indemnity for ecological damages and compensation for ecological rehabilitation should be developed.

## Task 29. Establish a compensation fund for ecological damages from offshore oil pollution

From the experiences of "mandatory insurance plus common fund" for oil spill prevention and compensation for oil pollution damages developed in advanced economies such as in the United States of America, develop a state/regional compensation fund for ecological damages from offshore oil pollution for the prevention and restoration of marine ecological and environmental damages.

# Measure 11. Explore the establishment of public-private partnership (PPP) models

## Task 30. Carry out case studies on cost-effective integrated coastal management

Carry out case studies on financial investments and its effectiveness in terms of marine ecology, disaster prevention and control, offshore pollution control and water resources management before and after the implementation of ICM by selecting a local government partner where pilot ICM has been developed. In the case studies, compare cost and benefits of ICM, collate the models for increased effectiveness and make evidenced-based proposals to local governments for the promotion of ICM.

#### Task 31. Develop public-private partnerships for marine ecological restoration projects

Put into practice domestic and foreign experiences in developing public-private partnerships (PPPs) in environmental management in the demonstration sites in Xiamen and the Bohai Sea region. Encourage the private sector to participate in large-scale marine ecosystem restoration projects; building, operating or managing ecological restoration projects and its facilities; providing public ecological services and relevant public services, and developing PPP projects for the restoration of typically-damaged ecosystems.

#### Measure 12. Actively develop international cooperation in marine protection and management

#### Task 32. Study and develop guiding principles for integrated coastal management

Study the experiences in the implementation of ICM at home and abroad. Identify successful guidelines and use them as guiding principles for ocean-related policies, programs, plans and projects of agencies and sectors. Provide timely guidance for the development and implementation of oceanrelated policies, programs and plans in agencies and sectors.

Actively develop cooperation with multiple parties such as international organizations, foreign nations, non-government organizations and the private sector to promote and encourage studies in coastal China and to extend funds for the promotion and implementation of ICM in the country.

5. Schedule of China's Implementation Plan (2012 – 2016)

				2012	12			2013	~	_	. 7	2014			2015	2			2016		
Schedule			ð	Q2	Q3	8	ð	07	Q3 Q4	4 Q1	1 Q2	83	<b>Q</b>	ğ	Q2	03	94	Q	Q2 Q3	3 Q4	Remarks
	Measure1:	Task 1																			Completion of the
	Sustainable	Task 2																			formulation of the sustainable ocean
	strategy	Task 3																			development strategy
	Measure 2:	Task 4																			Implementation in
Area 1	Legislation	Task 5																			advance in the coastal area
	Measure 3:	Task 6																			Implementation in
	Integrated	Task 7																			advance in the
	coordination	Task 8																			coastal area
	Measure 4: Ocean public awareness	Task 9																			
	Measure 5:	Task 10																			
	Integrated	Task 11																			Implementation in advance in the
	key coastal waters and watershed	Task 12																			coastal area
		Task 13																			Completion of the
	Measure 6:	Task 14																			mplementation report of integrated coastal
	Response to climate changes	Task 15																			management,
	and disaster	Task 16																			changes in 2015. To
Area 2	mitigation in coastal and ocean	Task 17																			work hard to restore
	есопоту	Task 18																			and completely construct mangrove zones by 2016
		Task 19																			By 2015 and 2020,
	Measure 7: Conservation of biodiversity and	Task 20																			the total bullt-up area of various marine protected areas
	maintenance of ecosystem health	Task 21																			should account for 3% and 5% of the sea area under jurisdiction respectively

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Me Me	Measure 8: Implementation	Task 22																				Implementation of the Outlines of the National Long-term
ha as	or the strategy for ocean science and management of human talents	Task 23																				Plan for Ocean Human Talent Development (2010—2020)
§ ≧	Measure 9:	Task 24																				Integrated coastal
Pr	Promotion of	Task 25																				management is practiced in over
dis	dissemination of	Task 26																				20% of the coastal
inter	integrated coastal	Task 27																				zone and the number of PNLG members
ĕ	experiences	Task 28																				doubled by 2015
Ma Ma me	Measure 10: Marine ecology compensation mechanism	Task 29																				Establishment of compensation/ indemnity mechanism for marine ecology
<b>₩</b> &	<b>Measure 11:</b> PPP model	Task 30																				
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≣ 8	cooperation	Task 32																				