

## Japan's Marine Economic Development and Competition with China

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### Abstract

Japan has established a four-pillar industry by adjusting the marine economic development strategy according to the international environment. Japan has traditional advantages in government regulation, industrialization, sea-related personnel training, international cooperation and exchanges. The adjustment of its marine economic strategy will promote the development of its own marine economy, and at the same time it will affect China's marine economic security to a certain extent. In addition to competition, China and Japan have certain cooperation space in the fields of marine fisheries, marine governance, maritime search and rescue, and advocacy docking. The development prospects of China-Japan marine economic relations are good.

### Keywords

Marine economy; Pillar industries; Competition and cooperation; "One Belt and One Road" initiative.

### Introduction

With the advance of the strategy of maritime power, China's demand for Marine security and Marine economy is increasing day by day. However, the problem of unbalanced, uncoordinated and unsustainable development of Marine economy still exists. In addition, compared with developed countries, the proportion of Marine economy in GDP is low, the contribution of Marine science and technology is not large, and the tertiary industry of Marine economy is still in the primary stage. With a small land area, Japan has attached great importance to developing to the sea

since the 1960s. It has formed a modern Marine economy with Marine fishery industry, Marine shipbuilding industry, coastal tourism and emerging Marine industries as the pillars, contributing greatly to Japan's GDP.

In recent years, as a pioneer in the development of Marine economy, Japan has accumulated advanced experience in such fields as government regulation, industrialization, training of maritime talents, and international cooperation and exchange, which provides a good reference for China to expand the blue economic space, develop the Marine economy, and realize the transformation from a major maritime power to a major maritime power.

At the same time, Japan's aggressive Marine economic strategy, striving for maritime rights and interests and geostrategic space, will inevitably affect China's Marine economic security to some extent (Anonymous, 2012). Therefore, it is wise to formulate and implement the national Marine strategy, seek consensus between China and the United States on Japan, and define areas of competition and future cooperation space.

### **Pillar industries of Japan's Marine economy**

In recent years, the development of Japan's Marine industry has been penetrating into all fields of economy and society, showing a development trend of dividing labor, expanding fields, keeping pace with traditional industries and emerging industries, and building a new Marine industry system. Marine fishery industry, Marine shipbuilding industry, coastal tourism and Marine emerging industries account for a large proportion and are relatively mature, and have become the pillar industries of Japan's Marine economy (Fujino, 2015).

### **Marine Fishery Industries**

Japan is located in the northwest Pacific Ocean, the development of Marine fisheries has superior natural conditions and is also one of the world's famous fishing grounds. Japan's Marine fishery industry integrates fishing boats, fishery, aquaculture, aquatic logistics, aquatic marketing and other related industries together, and has formed a complete industrial chain with complete supporting facilities and mutual connection.

However, the output of Marine fishery is declining, specifically from the perspective of pelagic fishery and inshore fishery (Technau and Weis, 2013). In terms of offshore fishery, with the increasing awareness of fishery resources protection in various economies around the world, Europe, America, Russia and other countries set 200 nautical mile economic exclusive waters (EEZ), forcing Japanese fishing boats to leave EEZ in many coastal countries.

Take the output of cod caught off the coast of the United States by Japan for example, it reached 3 million

tons in 1972 but fallen sharply to 180,000 tons by 2015. Japan's pelagic fishing industry is facing a recession as tuna and skipjack catches on the high seas are limited. Before 2000, the harvest of northern Pacific sampler fish was basically maintained at 200,000-400,000 tons. In 2014, it increased to 620,000 tons, but in 2015, Japan caught the lowest amount of sampler fish in 40 years (Fujikura et al., 2010). Under such circumstances, the development trend of Japan's pelagic fishery is to accelerate unified operation, strengthen technical innovation and increase support. In terms of inshore fishery, Japan calls its coastal and offshore waters as inshore waters, covering about 3.86 million square kilometers. Due to the confluence of warm and cold currents, inshore fishery resources are extremely rich. In the late 1970s, Japan's inshore fishery accounted for as much as 60% of the total output and became the center of gravity of Japan's Marine fishery (Morse, 2013).

Japan offshore Squid, sardines, squid and saury, is a diversified trend, but a downward trend offshore fishery production. In 2015, the annual output was 2.1 million tons, which has not recovered to the level of 2.4 million tons in 1958. In 2017, the output of offshore natural fish was 25,221 tons, down 9.7% year-on-year. The main areas of decreasing coastal catches are Tokyo, Nagasaki, Niigata, Shimamoto and Ibaraki. In the face of declining production, Japan's Marine fishery industry is actively exploring new changes in business areas (Matsuda et al., 2010). For example, Maruha Nichiro Co., Ltd. mainly focuses on fishery, breeding, processing, sales and the import and export of aquatic products, with an annual sales volume of 809.7 billion yen and a profit of 11.9 billion yen.

Japan's aquatic products are mainly engaged in aquatic products, pharmaceutical chemistry, food, logistics and Marine development related businesses, with an annual sale of 566.8 billion yen and a profit of 5.8 billion yen (Inaba, 2015). Geyang is mainly engaged in research and development, aquatic product trade, food material processing, health management and logistics. Its annual sales and profit are 178 billion yen and 2.3 billion yen respectively.

In view of the increasingly depleted Marine fishery

resources in the world, in order to continuously produce large and high-quality Marine products, Japanese researchers have focused their attention on modern Marine fishery breeding technology and freezing technology, and actively committed to the transparency of production records such as seedling breeding, bait feeding and drug dosing.

As early as 2013, the aquaculture research institute of Japan fisheries comprehensive research center formulated the breeding strategy with “selection and breeding of DNA markers” as the pillar (Naya, 2010). In 2013, the yen exchange rate was low, and the export of Japanese Marine products increased, reaching 221.6 billion yen, 30% higher than that of 2012.

At present, the institute is working with international institutions on fish breeding research, which has broken through the world's top tuna complete breeding technology (Sasaki et al., 2012). In short, due to the fierce international fishery competition and the influence of Japan's domestic economy, Japan's Marine production has declined slightly, and there is no room for growth. The industrial structure remains stable, but it has made breakthroughs in exploring new business areas, and the industrial development potential is enough.

### Marine Shipbuilding Industry

With the slowdown in the growth of international trade and the excess capacity of the international shipping market, the Japanese shipbuilding industry has experienced a sharp decline in recent years (Aliyu et al., 2015). Despite the tough situation, the Japanese shipbuilding industry is still the mainstay of Japan's marine economic development. Statistics show that in 2015, global new ship orders were 1,306 (39.26 million CGT), of which Japanese shipbuilding companies took orders of 362 ships. (9.1 million CGT), China and South Korea are 452 (10.2 million CGT) and 262 (10.1 million CGT) respectively; with CGT as the unit of measurement, Japan accounts for 22.9% of the world market share, China and South Korea respectively 25.7% and 25.4% (Table 1).

Table 1: The comparison of new ship orders from Clarkson Research Studies in 2015.

	Turnover	Percentage of market share
Japan	362	22.9%
China	452	25.7%
Korea	262	25.4%

In terms of shipbuilding completion, in 2015, global shipbuilding companies delivered a total of 1,842 new ships (36.7 million CGT), of which 399 ships (6.6 million CGT) were delivered by Japanese ship companies, and 721 ships (12.9 million CGT) in China and Korea respectively.) and 344 ships (12.7 million CGT). In terms of CGT, Japan accounts for 18. 0%, China and South Korea accounted for 35.1% and 34.6% respectively.

In terms of hand-held orders, in 2015, global shipbuilding companies held 4,745 new ships (1,930.3 billion CGT), of which 1,016 were hand-held in Japan (23.1 million CGT), and 2,103 were in China and South Korea (3,990). In terms of CGT, Japan accounted for 21.1% of the world market share, with China and South Korea accounting for 36.5% and 27. 9% (Ravinet et al., 2014). Japan is world's major shipbuilding countries and has a leading position in China and South Korea in shipbuilding completions and hand-held orders.

Against the background of weak demand in the international shipping market, Japanese shipbuilding companies are pursuing core technology and technology reserves. It is trying to make up for the market gap, rather than pursuing the first in quantity. The reason why Japan entered the high-end is mainly to seek and explore the next generation of shipbuilding technology while improving its technical reserves, so that every ship in the world uses Japan's core technology and becomes the global industry standard setter. The shipbuilding industry is a heavy industry and a labor-intensive industry with high energy consumption and high pollution (Omori and Nakamura, 2010).

Therefore, the Japanese government advocates relying on core technologies to achieve healthy and

sustainable development of the shipbuilding industry. In response to the current market environment of excess shipping capacity and freight rates in the shipping market, shipbuilding companies such as Mitsubishi Heavy Industries (MHI), Kawasaki Heavy Industries (KHI), and Mitsui Shipbuilding (MES) abandoned the high manufacturing and sales in 2016 in the new plan.

The value-added ship products are used to achieve the growth strategy of the enterprise, and are adjusted to the development strategy of shipbuilding alliance, business focus shift and shipbuilding business contraction. Mitsubishi Heavy Industries has strengthened its competitiveness in the global market through alliances with professional shipbuilding companies such as Imabari Shipbuilding, Nagura Shipbuilding and Oshima Shipbuilding (Miyazaki and Terui, 2016).

Kawasaki Heavy Industries officially withdrew from offshore business and merchant ship construction due to huge losses in offshore construction equipment business. The business focus shifted to China, while reducing its 30% shipbuilding business scale and reducing the sales target for shipbuilding business in 2020 to 70 billion yen.

Mitsui Shipbuilding was transformed into a holding company system on April 1, 2018, and was split into the shipbuilding business (Yagi et al., 2010). These three subsidiaries of the shipbuilding, machinery and engineering continue to shrink the scale of the shipbuilding business, maintaining shipbuilding activities only with business partners, authorizing technology to other shipbuilding companies or commissioning third-party production.

### Coastal Tourism

In recent years, Japan's inbound tourism has been highly valued by the Japanese government, and Japan's tourism industry has developed rapidly. As an island nation, Japan's tourism industry is inextricably linked to the ocean. In other words, the Japanese tourism industry can also be called coastal tourism at a certain level (Ishikawa et al., 2016).

In order to develop coastal tourism, Yokohama Port launched the "Future Port 21 Plan", which attracted

many tourists. Japan's coastal tourism has a natural appeal to tourists. In recent years, in addition to the impact of the East Japan Earthquake in the tourism market in 2011, the number of inbound tourists in Japan has shown an increasing trend.

In 2015, the number of tourists visiting Japan was close to 20 million. In 2016, the number of visitors to Japan reached 24 million, an increase of 21.8% compared with 2015 (Tanaka et al., 2014). It is a rare economic highlight for the Abe government and the quantity is expected to 400 million by 2020 and tourism has become a core element of Japan's GDP of 600 trillion yen in 2020 (Figure 1). The development of coastal tourism in Japan has greatly stimulated the development of related industries. The tourism economy has contributed a lot to the Japanese national economy.



Figure 1: World-renown scenery Fujiyama in Japan tourism.

In 2010, the direct income generated by the Japanese tourism industry was 23.8 trillion yen, and the direct economic benefit was 1.15 trillion yen, accounting for 2.4% of the gross national product. The economic benefit driven by the radiation effect of the Japanese tourism industry is 49.4 billion yen, with an additional economic benefit of 25.2 trillion yen, indirect employment of 4.24 million laborers, and indirect taxation of 4 trillion yen.

According to data released by the Ministry of Agriculture, Forestry and Fisheries, foreign tourists who went to Japan for sightseeing in 2016 consumed a total of nearly 3,331.8 billion yen, and food consumption was 289.7 billion yen, of which snacks accounted for 130.8 billion yen (Zhang and Hanner, 2011).

At present, the Abe government has placed tourism

at the heart of its growth strategy. Promote the in-depth development of coastal tourism in Japan by adopting tourism measures such as relaxing visa restrictions, facilitating immigration review, upgrading tourism infrastructure, and intensifying efforts to build large cruise ship sightseeing terminals. Coastal tourism is a combination of green industry and clean industry to boost the Japanese economy.

### **Marine Emerging Industries**

Affected by Trump's "New Deal" and Brexit, the changes in international division of labor and the shift of international industry are accelerating. The traditional marine industry is under unprecedented pressure. In order to seek transformation and upgrading, the Japanese government has stepped up efforts to foster and support emerging industries.

Marine related information, marine resources, energy and marine biological resources development related industries are gradually becoming emerging industries in Japan's future marine industrial system. Sustainable development of the economy is crucial (Suzuki et al., 2012).

Vigorously develop the marine information development related industry with the marine survey industry as the core, which can provide basic information services for the development of other marine industries, and also drive technological research and development, equipment advancement and industrial upgrading of other related industries. The key areas of development include marine energy, marine resources and marine renewable energy, to realize the industrialization, commercialization and scale of marine resources and energy.

The marine biological resources related industry belongs to the future of Japan. In the field of high value-added and high-tech marine products, the main development targets are seabed microbial resources. In addition to food, the products include high value-added products such as marine biomedicine, renewable fuels, and marine bio-chain utilization. As a frontier of marine bioenergy development, the use of marine bio-chains is critical to the resolution of global environmental problems.

In order to ensure the orderly development of seabed mineral resources, the Japanese government introduced the "Ocean Energy and Mineral Resources Development Plan" in 2009, the Minerals Law in 2011, and the "Guidelines for Promoting the Use of Marine Renewable Energy" in 2012. The Japan Project Industry Association estimates: Japan's unconventional seabed resources of cobalt-rich crusts reached 2.4 billion tons, seabed hydrothermal deposits reached 750 million tons, and methane hydrates reached 12.6 trillion cubic meters (Matsu'Ura et al., 2014).

In 2013, Professor Kato Taihao and others from the University of Tokyo discovered minerals such as rare earths in the sediments of the sea near the southern island of Ogasawara. In 2018, the Japanese research institute announced that 16 million tons of rare earth ore was discovered on the seabed of South Bird Island in Japan, and high-efficiency rare earth recovery technology was used to make rare earth resource development possible (Amano and Jenkins, 2014). In short, the Japanese marine industry has a long history and a solid foundation. Since the implementation of Japan's marine economic strategy, relying on large ports to expand the economic hinterland, the proportion of marine economy to Japan's GDP has gradually increased, and the marine industry has become an important growth point for the national economy.

### **The Successful Experience of Japan's Marine Economic Development**

#### **Paying Attention to Government Regulation, Control, and Industrial Planning First**

The marine policy is relatively perfect for the development of offshore resources, and it is easy to form a natural monopoly. Monopoly will lead to market failure and inefficient allocation of resources. Therefore, the government needs to intervene in the market, pay attention to government regulation, and at the same time play the dual role of the government and the market.

Japan has implemented a "co-operative joint venture" mechanism for marine infrastructure such as coastal artificial islands and mass transit. Through multi-party fundraising, alleviating the dilemma of

government financing, a system of mixed-ownership enterprises integrating central government, local government and private investment has been established, and the efficiency of state-owned capital operation has also been improved. As far as the construction of the Kansai Airport and its artificial islands is concerned, compared with the Hong Kong Airport, the scale of the project is large and the investment is small.

The former cost US\$12 billion, which is only 60% of the cost of the latter. In addition, the introduction of competition mechanism reform in the natural monopoly industry. Railway construction is easy to form a natural monopoly. In several railways connecting Japan's major industrial clusters, it is common to introduce more than two companies to form a competitive landscape, which will help improve efficiency. In order to promote the development of emerging industries, the Japanese government has formulated a series of industrial plans to provide policy guidance for the development of Japan's marine economy (Ikehara et al., 2011).

In 1997, the Japanese government successively issued the "Ocean Development Promotion Plan" and "Marine Science and Technology Development Plan", aiming to develop marine high-tech for the new century and become the prototype of the emerging marine industry.

In 2001, the "Basic Framework for Japan's Ocean Policy in the New Century" was introduced, and the goal of a large ocean technology country came into being.

In 2002, the comprehensive science and technology development strategy formulated by the Ministry of Education, Culture, Sports, Science and Technology of Japan promoted the deep development and international cooperation of Japanese marine technology and participated in projects such as the Global Ocean Observing Network (ARGO) and the International Ocean Drilling Program (IODP).

The international competitiveness of Japan Ocean Technology has increased significantly. In 2007, the Basic Law of the Sea was promulgated, providing a complete system guarantee for the development of Japan's marine emerging industries. In 2008, the draft

Basic Plan of the Sea was released. As the five-year basic plan of Japan's marine strategy, taking the lead in researching the challenges faced by human beings in the marine field is an important prerequisite for scientific understanding of the ocean and good basic survey and research of the ocean (Inoue et al., 2015).

In 2013, the "Basic Ocean Plan (2013-2017)" was introduced, and the cultivation of the marine economy was regarded as a new economic growth point. In May 2018, the Japanese government passed the "Basic Ocean Plan (2018-2022)" for the next five years, and Japan's ocean policy may shift its focus to security. The industrial planning firstly provided institutional support for the development of Japan's marine economy. It also grasped the basic trend of the development of marine emerging industries from a strategic perspective and greatly promoted the formation of a new marine industrial system. Marine-related policies have also been improved day by day and have become the fundamental guarantee for the development of Japan's marine economy.

In terms of the construction of marine harbors, Japan's Harbor Law stipulates that the central government will formulate a five-year national port plan in terms of policy, quantity and scale. In terms of marine financial policies, in order to establish a circular ocean economy, the Japanese government has formulated a detailed financial policy, which is reflected in the specific support methods as external financial support and organic integration of economic and financial channels.

In the marine industry, the Japanese government attaches great importance to the sustainability of the marine industry, and has successively issued policy documents such as the "Ninth Port Construction Seven-Year Plan" based on the "Basic Conception and Promotion Plan for Marine Development Based on Long-Term Development".

Guide banks and syndicates to provide credit support to companies involved in sustainable development projects. In terms of marine science and technology policy, the first is to promote the reform of the R&D system, create a competitive atmosphere, improve the research environment, strengthen the flow

of talents, implement a flexible and efficient work system, foster strategic positions, and implement innovative R&D systems.

The second is to strengthen the cooperation between industry, academia and government, and to realize the transfer of scientific research results by constructing an information circulation system and a cooperation summit between industry and academia, and finally actively promote international scholar exchanges, cooperative research and scientific and technological cooperation to promote the internationalization of scientific and technological activities. In terms of the marine environment, the Abe government attaches great importance to the safety of the marine environment, proposes a comprehensive marine environmental protection plan, and formulates a series of laws related to the marine environment (Mohammadi et al., 2013). With the improvement and implementation of the relevant policies of the marine economy, Japan's marine strategy has gradually improved, and the Japanese marine economy has also achieved new development.

### **Taking Sustainable Development as the Orientation and Promoting Intensive Industrial Agglomeration**

In the development process of Marine economy, Japan takes the sustainable development of Marine industry as the orientation, and takes resource integration and technological collaboration as the means to promote the highly concentrated Marine industry under the premise of protecting the ecology and environment.

Because Japan is short of land, in order to expand its land, the first consideration of Marine development is to build artificial islands near the coast of the gulf, rather than land reclamation, which is harmful to the environment and is not allowed by domestic environmentalists.

As early as March 2001, Japan proposed the goal of replacing the extensive production society of the 20th century by creating a circular society that values quality and sustainable development. Now, it has been elevated to the national strategy leading Japan's economic development.

Japan has formed a Marine industry layout supported by Marine fishery, Marine shipbuilding, port transportation and coastal tourism. The development idea of Marine emerging industrial clusters in 9 regions such as kanto, kinki and so on is to support large port cities and inland economic hinterland, and to continuously realize the goal of industrial high-intensity gathering of "knowledge cluster to create a career" and "Marine development zone city idea" (Belcheva and Chelomin, 2011).

At the same time, Japan pays attention to the linkage effect between land and sea and the protection of resources related to Marine industry. Only after the scientific and reasonable connection between Marine resources and existing industries on land, can it carry out large-scale Marine development and establish offshore industrial agglomeration areas. Land and sea complement each other.

The land is the hinterland of the Marine economy, and the sea is the further expansion of the land economy. Therefore, the speed of Marine industry agglomeration and the degree of Marine industry upgrading in Japan are both high. Based on the development of port-adjacent heavy industries such as the Tokyo bay area, kawasaki, Nagoya and yokohama, characteristic areas of emerging Marine industries have gradually shaped.

### **Sino-Japanese Competition and Cooperation in the Field of Marine Economy**

The development of Japan's marine economy has provided some useful experience for the development of China's marine economy. On the other hand, with the adjustment of Japan's marine economic strategy, China's marine economic development will inevitably be subject to certain competitive effects. To this end, China must actively respond to adverse effects and compete with Japan in cooperation with relevant parties. Actively responding to competition from Japan in the marine economy.

Accelerate the formulation and implementation of the national maritime strategy, safeguard the national maritime rights and interests, and view the international maritime history and the new developments in world maritime development. The maritime strategy is related

to the rise and fall of the national movement. The proposal of the “Ocean Powerful Country” strategy has important strategic and practical significance for China to develop the marine economy and safeguard national rights and interests. The 19<sup>th</sup> National Congress further emphasized the importance and urgency of integrating land and sea and accelerating the construction of a maritime power. In 2017, China’s total marine production reached 7.8 trillion yuan (Bakunina et al., 2012).

By 2020, it is expected to reach 10 trillion yuan, which will drive 38 million people involved in sea employment. By the middle of the 21st century, China’s marine economic value-added will account for 1/4 of China’s GDP, and the level of coastal defense modernization will enter the ranks of the world’s ocean military powers. China has more than 18,000 kilometers of coastline, 14,000 kilometers of island coastline, more than 20,000 kinds of marine life, 24 billion tons of offshore oil, 16 trillion cubic meters of natural gas resources, 3 billion tons of coastal sand resources reserves, 6.3 billion kilowatts of marine renewable energy reserves, more than 400 kilometers of natural deep water coastline, more than 60 deep water port sites, and 38,000 square kilometers of beach area.

The potential for transforming China’s resource advantages into economic advantages is enormous. It can be divided into three stages: the initial stage (2006-2020), the all-round development (2021-2035) and the full-scale take-off of the marine industry (2036-2050). The added value should account for 10%, 18% and 25% of GDP respectively.

The formulation and implementation of the national ocean strategy will help to maintain effective competition with the Japanese marine strategy in the economic field in order to safeguard the national maritime rights and interests.

Seeking the consensus between China and the United States on Japan and jointly preventing Japan’s strategic plan to make China-Japan relations complex and changeable, historical issues and other factors have multiple effects, and shaping the maritime security order in the Asia-Pacific region remains difficult. In recent years, the United States has indeed provided

support and assistance to the reconstruction and development of Japanese military power, with the aim of using armed Japan to safeguard US interests in the Asia-Pacific region. However, the United States does not want Japan to break through its strategic interests’ framework, and it does not want Japan to have a strong maritime military strength (Naruse et al., 2012).

Therefore, with regard to the recently released US-Japan Defense Cooperation Guide, China should maintain a high degree of vigilance, and should fully promote the “21st Century Maritime Silk Road” initiative integration concept, multi-pronged approach, reach a consensus with the United States, build The strategic defense system against Japan will expand the development space of China’s marine strategy and ease the strategic pressure imposed by Japan on China’s marine economy, thus effectively solving the marine economic dispute.

### **Step Up International Cooperation and Exchanges to Promote Deep-Seated Development of Marine Technology**

With the deepening development of global economic integration, strengthening international cooperation and exchanges has become an important measure for Japan to develop Marine economy. By taking the opportunity of Marine research and innovation of various countries in the world, the world’s advanced technologies and experience will be encouraged to enter Japan, and the main body of Japan’s Marine economy will be promoted to plan changes, further releasing the vitality of market economy and increasing the demand for the development of Marine economy.

To some extent, the layout and resource allocation of Marine industry depend on both market vitality and Marine science and technology. At present there are global Marine economic and technology development, the reputation of “barometer” of “international science and technology information network” (Japan, America and Germany to form), and is regarded as the future ocean life model and sensation “sea” of global common development) (Japan, Canada, to a certain extent, reflects the Japanese to participate in the international

cooperation of Marine technology achievements. Of course, Japan has also actively strengthened international academic exchanges and promoted international cooperative research.

Jkaac has always been committed to supporting scientific research, training researchers and promoting international academic exchanges to promote academic development. And “Marine research and development institution” (JAMSTEC) is the most famous institution engaged in the comprehensive research of Marine science and innovation in Japan. JAMSTEC has seven scientific research ships engaged in comprehensive Marine technology research (Figure 2).



Figure 2: Ship of JAMSTEC.

At present, major maritime powers led by the United States, Britain and Japan occupy the high end of the Marine industrial chain with high-quality and high-value products, and monopolize the international market by controlling core materials, key components and technologies. The far-reaching sea has become a strong joint input point for countries such as Europe, America and Japan to develop oceans. The global value chain has been formed in the development of deep-sea exploration technology and equipment, thus promoting the deep-level development of Marine technology.

### **Cooperation between China and Japan in the Marine Economy**

China and Japan are not completely competitive in the marine economy, and they can also cooperate. On May 13, 2018, Premier Li Keqiang visited Japan and Sino-Japanese relations returned to normal track, providing political guarantee for China-Japan marine

economic cooperation. In accordance with the spirit of the high-level consultations on China-Japan maritime affairs, there is a large space for cooperation in the marine economy, maritime defense, maritime law enforcement, security, and political and legal aspects.

### **Marine Fisheries: Strengthening the Demarcation and Disputes**

The management and cooperation of fishery resources in the sea area are both large and large marine fisheries, with similar resource bases and operating institutions. Under the guidance of the spirit of the China-Japan Civil Fisheries Agreement in 1955, in accordance with the principles of mutual understanding, close cooperation and joint consultation on the development of marine fishery resources, the current order of marine fishery operations, law enforcement activities and fishing vessel management are relatively stable.

However, due to long-term unresolved disputes in the sea area, fishery disputes and fishery law enforcement have occurred frequently. To this end, China and Japan signed a bilateral fishery agreement, established a stable coordination management mechanism, and determined the quotas for fishing waters, the number of operating vessels, the conditions for fishing, and various management regulations.

On November 14, 2016, the China-Japan Joint Fisheries Committee reached a consensus on issues related to the China-Japan Fisheries Agreement and signed the minutes of the meeting and related annexes. At the seventh round of the China-Japan High-level Consultation on Ocean Affairs held in June 2017, the two sides agreed to strengthen the protection and management of fishery resources and agreed to continue to strengthen cooperation in fisheries.

Under the framework of existing institutions such as the China-Japan Joint Fisheries Commission, the establishment of the China-Japan Fisheries Joint Management Committee, the strengthening of the management and cooperation of fisheries resources in demarcated disputed waters, and the basic ways to formulate and implement fisheries management and cooperation have become China and Japan. The

consensus of the marine economy on fisheries cooperation.

### **Marine Governance**

Strengthening the marine environment and marine ecological cooperation China and Japan are the world's largest importers of crude oil. In 2017, China imported about 400 million tons of crude oil. In 2015, Japan imported 168 million tons of crude oil, of which more than 80% were imported by large-scale cruise ships. Many fishing boats operate at sea, and the navigation environment is complex and diverse. Intensified, the risk factor of marine environmental pollution and marine ecological damage increased (Hamano, 2010).

To this end, the protection of the marine environment is a shared responsibility of China and neighboring countries. In 2013, the China National Oceanic Administration and the secretariats of China, Japan and Korea listed marine cooperation as a key cooperation area. Marine environmental protection, ocean observation and detection, coastal zone management, and marine scientific research have become the focus of cooperation. On June 22, 2016, Chinese and Japanese scholars exchanged views on issues such as marine management, marine environmental protection, and cooperation framework objectives, and reached consensus on some issues.

On March 5, 2017, the China-Japan marine waste cooperation expert dialogue was successfully concluded, and the marine environment and marine ecological cooperation became the priority areas for the cooperation of the two countries in marine cooperation.

### **Maritime Search and Rescue**

Fulfilling the obligation of international assistance and establishing a data sharing platform. China and Japan are parties to the International Convention for the Safety of Life at Sea, 1974 and the International Convention on Maritime Search and Rescue, 1979. On October 11, 2008, China-Japan bilateral seas were signed. Search and Rescue Cooperation Framework Agreement.

Co-sponsored or participated in maritime search and rescue exercises several times, and successfully

cooperated in the rescue of vessels and personnel in distress, such as the 2008 and 2009 Sino-Japanese Maritime Search and Rescue Joint Communications Exercise, and the collision between Panamanian and Korean ships in March 2014.

China United Search and Rescue. In February 2017, China, Japan, South Korea and Russia successfully held meetings on topics such as maritime search and rescue technology, maritime search and rescue action termination standards and maritime search and rescue cooperation operation levels.

However, Sino-Japanese maritime emergency search and rescue cooperation still cannot meet the actual needs of the East China Sea. The Sino-Japanese maritime search and rescue and marine oil spill emergency cooperation have just started, which is in sharp contrast with the intensive business of East Asian shipping.

In addition, the Sino-Japanese maritime search and rescue cooperation has not yet established an information sharing platform. The Sino-Japanese Maritime Search and Rescue Agreement has not yet been signed, and there is a lack of consensus on the search and rescue operations in the disputed sea area. Therefore, the Chinese and Japanese maritime search and rescue agencies have established an information sharing platform and established a communication joint response mechanism.

There is still a certain amount of operational space for improving cooperation between China and Japan in the search and rescue cooperation and signing the "China-Japan Maritime Search and Rescue Agreement."

### **Initiative Docking**

Incorporating the framework of the "Maritime Silk Road" to build the "21st Century Maritime Silk Road" is a new type of economic and trade road connecting China with the world in the context of global political economy, which is conducive to the positive interaction between China and neighboring countries. mutual benefit. Strengthening cooperation with Japan, exploring the space for cooperation in the ocean, and incorporating it into the framework of the "Maritime Silk Road" will help achieve a win-win situation.

Coordination on ocean-related issues such as ocean policy, marine resource management, marine security and diplomacy, and exchange of views to reach consensus.

On the East China Sea and South China Sea issues, it is imperative to prevent crises and unexpected escalations, strengthen political mutual trust, and establish an effective crisis management and control mechanism. Strengthen cooperation between China and Japan in marine fisheries, marine shipbuilding, coastal tourism and marine emerging industries through the docking with port areas in Japan, port interoperability, information sharing and freight forwarding, and achieve the goal of the Maritime Silk Road.

At present, the Sino-Japanese marine economic relationship has warmed up, and the "Belt and Road" has played an important role. Japanese scholars believe that the "One Belt, One Road" construction has achieved remarkable results, and Sino-Japanese cooperation has great potential, and called on the Japanese government to actively participate in the "Belt and Road."

Mizuho Bank executive director An Yuangui said that Mizuho Bank is willing to become a bridge between Japanese companies and Chinese companies, and there are opportunities for cooperation in infrastructure, aging, medical and environmental fields.

In addition, China and Japan have structural advantages and complementarity. China has comparative advantages in economic technology and strategic diplomacy.

Japan has comparative advantages in technology, capital and business experience. Within the framework of "One Belt, One Road", third-party market investment, production capacity and financial and financial aspects have broad prospects for cooperation, and the potential for economic and trade investment is large and complementary, and it has become a new point of cooperation growth.

Cooperation around the "Belt and Road" will inject new vitality into the continuous improvement of China-Japan marine economic relations. Since the end of the Cold War, Japan has shifted the focus of national development to the oceans, with the aim of developing

a marine economy, revitalizing the marine industry, and building a maritime power, with a view to seeking more maritime interests to strengthen the country's strength, and then emerging from the post-war system constraints and re-emerging as a "political power."

However, the development of the marine economy has been affected by the international environment and is characterized by instability. When formulating a marine strategy, Japan developed high value-added industries, and adapted to local conditions and strengths to avoid shortcomings, injecting vitality into the marine economy and making up for the congenital shortcomings.

Today, Japan's dependence on the marine economy has deepened, with 99.8% of overseas trade and 40% of domestic trade relying on marine transport, and 40% of Japanese animal protein is derived from marine products.

In recent years, Japan's marine economy has entered a new growth period, and has achieved world-leading advantages in government regulation, industrialization, sea-related personnel training, international cooperation and exchanges (Sekikawa et al., 2012). The Abe government regards the development and utilization of marine resources, the innovation of marine science and technology and the boost of the marine industry as the key to the national development strategy. Japan's territory is only 380,000 square kilometers, ranking 61st in the world, while the territorial sea and exclusive economic zone covers an area of 4.47 million square kilometers, ranking 6<sup>th</sup> in the world.

## Conclusion

With the development of the marine economy, the economic dependence on the ocean will inevitably be guaranteed through the formulation and implementation of political and military policies, to maximize the protection of Japan's maritime interests. Japan's aggressive marine strategy will pose a certain degree of threat and challenge to China's and even the global marine economic security and marine economic development.

While drawing on the experience of Japan's marine economic development, China should formulate and implement a national marine strategy to compete effectively with Japan, and at the same time cooperate in marine fisheries, marine governance, maritime search and rescue, and advocacy docking to expand the blue economy space for China. Develop a marine economy to create a good marine environment.

In short, China's "One Belt, One Road" initiative and the "Ocean Power" strategy occupy an important position in the marine economy. China's modernization depends on the modernization of the marine economy. China is advancing from a maritime power to a maritime power. In the marine economy competition in the new century, Sino-Japanese competition will continue to advance. At the same time, China-Japan marine economic cooperation has certain room for development.

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