

An Analysis of Shanghai's Marine Industry

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Abstract

The paper analyzes the structure of Shanghai's marine industry with data related to the industry's development. It investigates the problems and makes suggestions about the progress of the industry in the hope of providing the basis for coordinated, stable and rapid expansion.

Key words : marine industry ; structure of the marine industry; marine economy

The 21st century is a new epoch in the exploration of the oceans. A new arena of competition has emerged as the exploration, exploitation and protection of the oceans have become a new focal point of global development. As an important component of our national economy, marine economy is the totality of all kinds of industries and economic activities concerning the exploration and utilization of the oceans. It refers to all enterprises in the oceans and the vast space provided by the oceans (hereafter marine space), direct production and processing with marine resources, and economy formed in the exploration, utilization, protection and service of the oceans.

The term marine industry also refers to all production and service activities conducted by human beings utilizing marine resources and marine space. These activities include: production and service in which products are obtained directly from the oceans; production and services that provide products directly applied in the oceans or exploration activities in the oceans; production and service in which ocean water or marine space serve as basic elements; scientific research, education, public service and administration which are closely related to the oceans.

As an important coastal city in China, Shanghai boasts abundant natural marine resources, wide marine space and huge development potential. Exerting regional advantages of coastal areas, recomposing the marine industry system and maintaining sustained development of marine economy have profound strategic significance to the economic, social, and cultural development of Shanghai and the Yangtze River Valley as a whole.

1. The Status of Shanghai's Marine Industry

With the steady broadening of Shanghai's economy and trade, the development of Shanghai's marine economy and exploitation of marine resources are both in a good state. The gross output value of the main marine industries has achieved double-digit increases for many years running. During the 1 of the marine industry's contribution to the national economy is steadily rising.

1.1 An Analysis of the Value of Shanghai's Marine Industry to the National Economy

In 2004, the gross output value of the main marine industries in Shanghai went above 100 billion Yuan for the first time and soared to 120.429 billion Yuan, up 43.8 percent over last year. The progress of the gross output value of Shanghai's main marine industries is illustrated in Diagram 1:

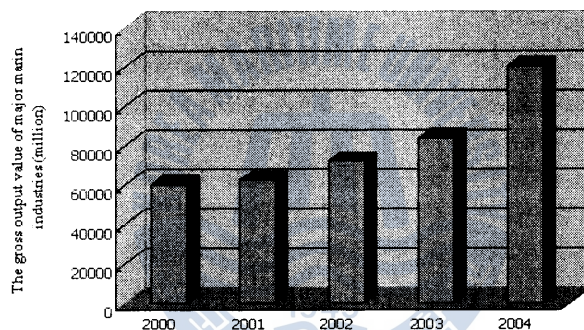


Diagram 1: The development of the gross output value of Shanghai's main marine industries

The proportion of gross output value of Shanghai's major marine industries in Shanghai's GDP increases every year. The 13.2 percent in year 2000 grew to 16.2 percent in 2004, a clear sign that the contribution of the marine industry to the GDP is enlarging annually. According to the contrast between Shanghai's marine industries and those of 'two provinces, one city' (i.e., Jiangsu, Zhejiang and Shanghai as a whole), and those of the whole nation, the proportions of gross output value of Shanghai's major marine industries in the 'two provinces, one city' and the whole nation are both dropping. The proportion of gross output value of Shanghai's major marine industries in the 'two provinces, one city' has fallen from 52.4 percent in year 2000 to 27.1 percent in 2004, which is indicative of rapid development of marine industries in the provinces and cities around Shanghai. The proportion in the nation slid from 14.6 percent in 2000 to 9.3 percent in 2004. The proportions of gross output value of Shanghai's major marine industries in Shanghai's GDP and in the nation's whole marine production value are illustrated in Table 1:

Table 1 The proportions of the gross output value of Shanghai's major marine industries in Shanghai's GDP and in the nation's total marine output value

Year	2000	2001	2002	2003	2004
Proportion in the city's GDP(%)	13.2	12.6	13.3	13.4	16.2
Proportion in the marine industry value of the two provinces and a city(%)	52.4	44.6	35.6	33.8	27.1
Proportion in the nation's marine industry value(%)	14.6	8.6	8.0	8.0	9.3

Source: China's Marine Economy Statistical Report in 2004

1.2 An Analysis of Shanghai's Major Marine Industries

Major marine industries such as marine transportation, coastal shipbuilding and repairing industry, coastal tourism, marine oil and gas, shoal reclamation and marine medical industry have established in Shanghai. In 2004 marine industries dominated by marine transportation, ocean shipbuilding, coastal tourism and marine fishery all gained in productivity. The proportions of Shanghai's major marine industries are as follow:

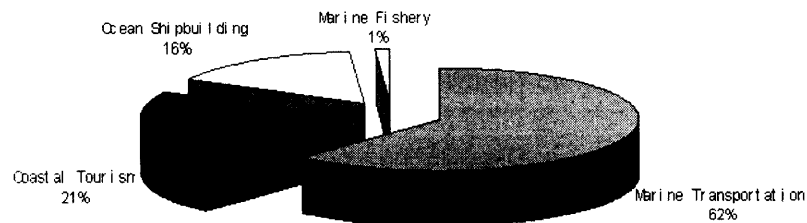


Diagram 2 Shanghai's major marine industries

In 2004 Shanghai's marine fishery enterprises maintained their progressive trend, with the production volume of marine products increasing continuously. The gross output climbed to 1.43 billion Yuan, up 7.5 percent over last year, with a relatively low proportion (only 0.4 percent) of the nation's gross output value of marine products.

Shanghai's marine transportation also showed a substantial advance. The production value rose to 74.08 billion Yuan, up 14.25 percent over last year, capturing 30.4 percent of the nation's

entire production value. In 2004, Shanghai's port cargo throughput, export cargo throughput and container cargo throughput all attained new highs. Shanghai became the second largest freight port after its cargo throughput rose to 379 million tons, or 15 percent of the throughput of all coastal ports in the nation. Export cargo throughput jumped to 158 million tons, or 15.1 percent of the export cargo handled by all of China's coastal ports. Container cargo throughput hovered at 14.554 million TEUs, which turned out to be 24 percent of the container cargo throughput of all coastal ports in the nation and enough to establish Shanghai as third in the world. In 2005, Shanghai port had a cargo throughput of 443 million tons, up 16.7 percent over the year 2004, surpassing Singapore to become the largest port in the world. Its container cargo throughput registered 18.09 million TEUs, rising 24.2 percent over 2004, and securing for the port third place in the world. Its export cargo throughput stood at 186 million tons, a 17.2 percent gain over 2004. Shanghai's proportion of berth and throughput in the national total are as follows:

Table 2 The proportions of Shanghai's berths and throughputs in the whole country

Indexes	Shanghai	China	Shanghai's proportion in China (%)
Number of berths	1198	35108	3.4
berths of over 10,000 dwt	123	944	13.09
Cargo throughput (100 mil tons)	3.79	41.72	9.1
Foreign-trade cargo throughput (100 mil tons)	1.58	11.55	13.7
Container throughput (10,000 TEU)	1455.4	6160	23.6

Source: Statistical Report of the Highway and Waterway Transportation Industries in 2004, and Shanghai Statistic Annals, 2005

In 2004, Shanghai's coastal tourism shook off the plague of SARS and gathered forward momentum. Coastal tourism yielded revenue of 25.42 billion Yuan. That was a 48.1 percent improvement over the previous year. Shanghai's coastal tourism revenue accounts for 35.3 percent of the nation's coastal tourism revenue, ranking first in China.

Against the background of a thriving international ship market, rapid progress continues in Shanghai's ocean-going ship-building industry. Gross output value topped 18.89 billion Yuan in 2004, up 46.3 percent over 2003. The production value of Shanghai's ocean-going ship industry accounts for 25 percent of that of the whole nation and ranks first in China. The sales of Shanghai's ocean-going ships represent 21.6 percent of the national total. The production of Shanghai's civil steel ship is equal to 29.3 percent of the national total. This shows Shanghai has surpassed Jiangsu and Liaoning as the largest shipbuilding base in China. The four biggest ship builders, Hudong Zhonghua Shipbuilding (Group) Co. Ltd, Shanghai Waigaoqiao Shipbuilding

Co. Ltd, Jiangnan Shipyard (Group) Co. Ltd and the Shanghai Shipyard are the nucleus of power in Shanghai's ship construction. With obvious advantages in labor, capital and technology, their rapid development has been responsible for a large part of Shanghai's ship building success.

1.3 A Structural Analysis of Shanghai's Primary, Secondary and Tertiary Marine Industries

The marine industry relies on marine resources. Its structure has its own characteristics. As man's competence at marine exploration grows, the industry matures from low-level utilization to sophisticated exploitation. According to regulations in the Classification of Industries in the National Economy GB/T 4754-2002 and Statistical Categories and Codes of Marine Economy HY/T052-1999 of People's Republic of China, the marine industry can be divided as follows: the primary marine industry, including marine fishery; the secondary marine economy, including marine oil and gas industry, off-shore ore industry, marine salt industry, marine chemical industry, halobiont medical industry, marine electrical power and ocean water exploitation industry, ocean-going ship industry, marine engineering architecture, etc.; and the tertiary marine industry, including marine transportation, coastal tourism, marine scientific research, education and public service, etc.

In 2004, the ratios of Shanghai's primary, secondary and tertiary marine industries were 1 to 16 to 83. In the same period, the ratios of the three marine industries on the national level were 30 to 24 to 46. Tertiary industry accounts for a larger proportion of Shanghai's marine industry and the proportions of primary and secondary industries are lower than the average national level. This shows that Shanghai's marine industry structure is superior to that of other coastal cities. With a sound basis in the field of new marine technology such as marine resource exploitation and halobiont medicine, Shanghai has a strong development potential in these industries.

2. Major Problems with Shanghai's Marine Industry

Although Shanghai's marine economy has made remarkable progress in recent years, some problems are still to be solved.

2.1 A Relatively Small Volume of the Ocean Economy

The present scale of Shanghai's marine economy is relatively small. Statistics show that the rank of Shanghai's marine economy aggregate among all coastal cities has dropped from third in 2000 and fourth in 2001 to fifth in 2002. Many reasons for that slide are possible; for example, an altered statistical standard. But the decline is also evidence that the marine economy has not

received the attention appropriate to Shanghai's status as a coastal economic center. In 2004, the gross output value of Shanghai's major marine industries was 120.43 billion Yuan, accounting for only 9.3 percent of the gross output value of major marine industries in the nation.

2.2 Imbalance in the Development of the Marine Industries

According to its characteristics, the marine industry can be divided into traditional industries (including marine aquatic products, marine salt industry, marine transportation), emerging industries (including marine gas and oil, coastal tourism, beach ore and ocean-going ship industry) and future industries (including halobiont products, marine medical industry, marine power exploitation, ocean-water chemical resources exploitation, deep-water mining, etc.). Traditional marine industries are dominant in Shanghai; high-tech enterprises are as yet small in scale. Tertiary industry accounts for 83 percent of the gross marine production value, but with its focus on marine transportation and coastal tourism, industries with high added value such as marine consulting service and marine information industry contribute only a small fraction to the total. Marine high-tech industries such as halobiont engineering project, deep processing of marine aquatic products and marine engineering equipment manufacturing are advancing slowly. The marine chemical industry and similar undertakings are still in a disadvantageous position. High-tech, future-oriented marine industries need to be nurtured.

2.3 Inadequate application of marine scientific and technological achievements

The scientific and technological force of Shanghai's marine industry is to a large extent dispersed. There are more than 20 marine research institutes in Shanghai, belonging to different government departments. In these circumstances it is difficult to form a cooperative front. This weakness hinders the exertion of the integrated advantages of marine technology. Moreover, the flawed financing system for scientific research results in insufficient technological investment and a single investment channel. Marine enterprises have difficulty finding financing; the participation of social funds is limited; an efficient risk investment mechanism has not been established. Weak integration of marine technology and marine economy, low efficiency in transformation of technological achievements and small proportion of marine research funds in GDP have narrowed the contribution of the marine economy.

3. Suggestions for Developing Shanghai's Marine Industry

Shaping the burgeoning marine industry is an important step toward improving the marine economy and the mainstream of China's marine industry during the Eleventh Five-year Plan period. To realize gradually the upgrading of the marine industry and achieve broader development are the only measures to sustain progress in the marine economy. The reorganization of the marine industry's structure and the fostering of new growth in the marine

require the joint efforts of the government and market mechanism.

3.1 Government's Measures to Promote the Marine Economy

In the 1990s China issued regulations to develop the marine economy and protect marine environment, such as *Layout of the Nation's Marine Economy Development*. These regulations set a framework for the protection of the oceans, and provided guidelines for local policies. It is a convention for coastal nations in the world to support development of marine economy with industrial policies. Shanghai should quicken the establishment of local policies to encourage the development of the marine industry and assure protection of the ocean. The concept of sustained development should be embodied in industrial policies to protect resources and environment that are indispensable to the long-term development of future marine economy. In terms of the instructions for industrial cluster development, it is important to set all kinds of preferential policies, ensure the construction of industrial gardens for marine science and technology, enhance the competitiveness of the marine industry, and achieve breakthroughs in marine industry development. Shanghai should encourage the diversified development of industrial gardens and explore actively new ways of marine economy development, such as university student industrial gardens, production, study and research bases, overseas student industrial garden and enterprise industrial gardens. Shanghai is about to enter 'the marine century'. It is essential to provide guarantees under these circumstances and improve the macro-environment for sustained development of the marine economy.

3.2 Improving the Marine Industry Structure to Upgrade the Industry and Form Large Enterprise Groups

The rapid expansion of the marine industry is a result of upgrading and the growth of industrial groups. With the development of marine technology, the flourishing marine industries are beginning to form clusters. Most marine enterprises like coastal tourism, ocean water exploitation, ocean-going ship building, and marine aquaculture have moved from the starting period to the growth period and showed great potential for success. The marine chemical industry, marine oil, marine medicine, mining and information service have not only started, but shown bright prospects. Considering the status of Shanghai's marine economy, the city should accelerate the streamlining of the marine industry structure, develop the circulating economy, optimize the marine industry layout, and exploit marine resources to realize all-round development characterized by concentrated operation and good profit.

By improving the layout of the marine economy, Shanghai can ensure steady development of the primary industry to achieve a more efficient marine fishery; lay emphasis on the development of the secondary industry to raise the technological level, especially to expand ocean-going ship building, marine oil and marine chemical industry; accelerate the development of the tertiary industry to improve the marine service industry and coastal tourism, to reorganize

and enhance marine transportation and to reinforce marine logistics.

3.3 Promoting the Marine Industry through Science and Technology to Ensure Sustainable Development

Shanghai should establish two service platforms-- marine technology and marine information-- to provide strong intellectual and technological support for 'the digital ocean'. By collecting marine technological resources, the marine technological platform established Shanghai Marine Science Academy with an innovative mechanism to promote marine scientific research; it has created marine industry fostering fund to lead and support the transformation of marine scientific achievements; it has also established a base for the encouragement of marine high-tech industry. The marine information platform is about to design and construct a demonstration area of 'digital ocean' in Shanghai to solve the problem of the lack of marine space between basic data platform and exchange platform of the city's geographical information system, and to realize all-round economic development of the oceans, the land and the sky in Shanghai.

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