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Evolution of district marine policies in China: The case of Shandong Province

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ABSTRACT

Shandong Province is among China's major marine provinces. The annual total output value of the province's marine economy has been ranked second in the country since 2013. This paper presents an evaluation of the marine district policies of Shandong Province. These policies can be divided into three stages according to the time sequence of policy promulgation: the fishery production and resource management period, the marine integrated utilization management period, and the marine ecological management period. The evolution of Shandong's marine policies was analyzed accordingly. Overall, the regional marine industry is on a good development track. However, many challenges remain regarding the formulation and implementation of the province's marine policies in the future.

1. Introduction

Marine policy represents a code of conduct developed by the state to achieve its development goals, strategies, policies or plans for the marine industry. The purpose of formulating marine policies is to effectively organize various maritime activities, coordinate the relationship between the various sectors of the marine industry, appropriately handle international marine issues, safeguard maritime rights and interests, and effectively promote marine development and international cooperation. Marine policies usually include national legislation, government regulations and administrative orders, business planning and other areas. The implementation of marine policies has considerable influence on the marine industry and is of great significance to the study of marine policies and evaluation of policies' effects. The current study of marine policies can be divided into three categories: the introduction and analysis of national marine policies [1–3] or regional marine policies [4,5] and comparisons between national marine policies [6,7]; the introduction and analysis of a particular marine policy [8,9] or a particular marine industry policy [10,11]; and the analysis of the relationship between scientific evidence [12], societal factors [13] and maritime policies.

Similar to the development of marine economies in various countries, China has focused on the development of its marine economy since the reform and opening up period, which started in 1979. With the continuous improvement of marine legislation, marine management work has been conducted, and the development and management of China's marine economy has entered a new stage. To ensure the sustained and healthy development of its marine industry, China has introduced a series of marine policies and has gradually established a marine policy system. The policy system includes six main elements: marine rights, marine fishery policies, marine transportation and port construction policies, marine science and technology development policies, marine environment protection policies, and resource exploitation and sustainable development policies. Current research on China's marine economic policies focuses on comparing Chinese policies with foreign policies and regional marine policies with specific marine industry policies because the assessment of regional marine policies and their evolution are rare. Shandong Province is one of China's major marine provinces, with an annual total marine economy output of over one trillion yuan since 2013, ranking second in the country for many years. This paper focuses on the marine policies of Shandong Province, which can be divided into three stages according to the time sequence of policy promulgation: the fishery production and resource management period, the marine integrated utilization management period, and the marine ecological management period. The evolution of Shandong's marine policies had been analyzed accordingly. The policies have developed from focusing on a single traditional fishery industry to encompassing the marine environment and integrated ocean management as well as marine ecology in recent years. Shandong's marine policies emphasize the protection and sustainable use of marine resources, attaching great importance to the development of marine science and technology. A number of marine policies have launched for the first time throughout the country. Regional marine industry is heading in a good direction. However, many challenges remain regarding the

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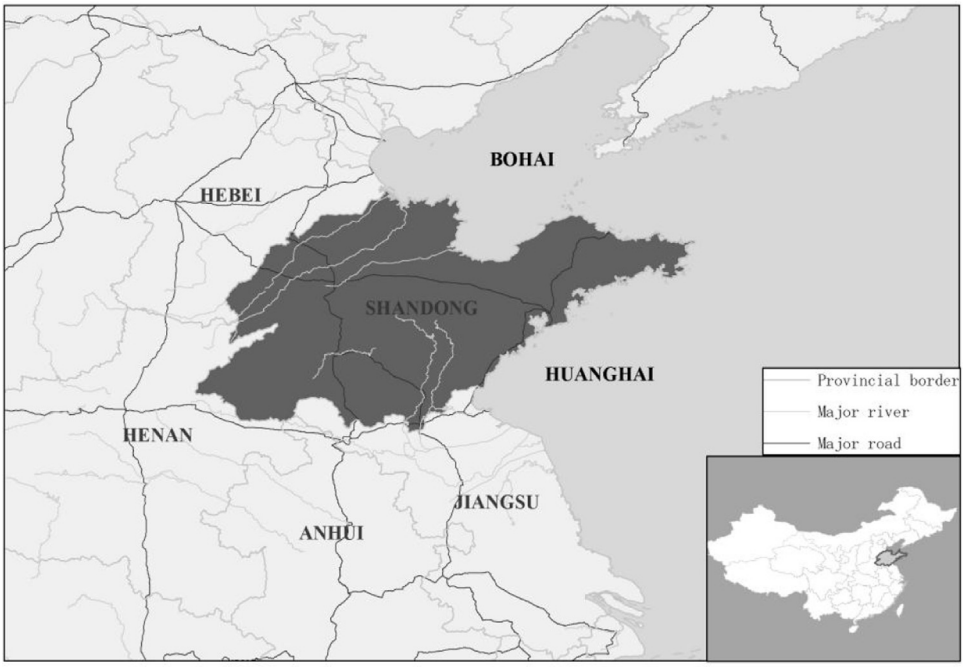

Fig. 1. The location of Shandong Province.

formulation and implementation of marine policies in the future, such as serving the development of the marine economy, improving the marine ecological environment, increasing citizen participation in policy making, and evaluating the effects of marine policies.

2. Development of the marine economy in Shandong Province

Shandong Province is located along the eastern coast of China, adjacent to the Bohai Sea and the Yellow Sea (Fig. 1), and it has a coastline of 3121 km, which accounts for one-sixth of China's coastline. The intertidal zone is 3223 square kilometers, and the province includes 299 islands, which represents the 6th highest number of islands of all provinces of China. The Shandong Province coastline includes 16 main bays and 51 deep-water berths, convertible into excellent port sites, thereby conferring advantages to the marine transportation and export-oriented economy. The province includes a number of different natural marine resources present in large quantities and of high economic value. The coastal zone is rich in mineral resources and contains a large number of deposits of oil, natural gas, underground brine, gold, graphite and other metallic and non-metallic minerals. The Jiaodong Peninsula is rich in wind energy resources and has strong prospects with regard to the generation of tidal, wave and thermal power. The coastal scenery is beautiful, and the climate is pleasant, which makes this province suitable for the development of a tourism industry. The vast sea area and rich marine resources have created favorable conditions for Shandong Province to prosper.

In 2015, the gross ocean product of Shandong Province was over 1220 billion RMB, thus accounting for 17% of China's gross ocean product and ranking second in the country. From 2011–2015, the province's gross marine product maintained an average annual growth rate of approximately 10%, which was 2% higher than the province's economic growth rate and accounted for over 18% of the province's GDP (Fig. 2, Table 1).

In 2015, the total marine product output was 9.2 million tons in Shandong Province, and the gross output of the fishery economy was 370 billion yuan. The net income of fishermen reached 17 thousand yuan per capita. The government established a 320 million yuan fund for fishery production, launched 43 key projects, including the restoration of fishery resources, and designated the Yellow Sea marine ecological area, thus making Shandong Province the first province in China to establish a marine ecological area. By establishing 41 marine environmental monitoring agencies, the government established a three-level (province, municipality and county) marine environmental monitoring and evaluation system. The pelagic fishery was at its highest level, adding 54 new pelagic vessels for a total of 450 vessels. Its output was 469,000 t, which was worth 4.85 billion yuan, representing

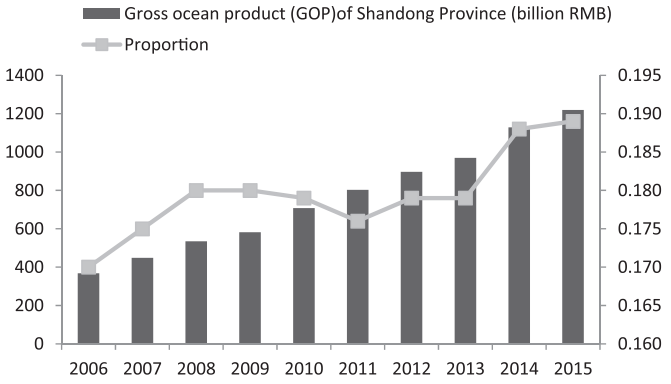

Fig. 2. Gross ocean product of Shandong Province. Note: data from the China Marine Statistical Yearbook 2006–2016.

Table 1
Comparison of Shandong's GOP to the national GOP.
Source: China Marine Statistical Yearbook 2006–2016.

	Gross ocean product (GOP)of Shandong Province (billion RMB)	Gross ocean product (GOP)of China (billion RMB)	Proportion
2006	367.9	2159.2	0.170
2007	447.8	2561.9	0.175
2008	534.6	2971.8	0.180
2009	582.0	3227.8	0.180
2010	707.5	3957.3	0.179
2011	802.9	4549.6	0.176
2012	897.2	5004.5	0.179
2013	969.6	5431.3	0.179
2014	1128.8	5993.6	0.188
2015	1219.3	6466.9	0.189