

Industry Cooperation and Trade Model in West Asia & East Africa on Maritime Silk Road

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Abstract: Deepening cooperation in marine industry is the key direction of the construction of the 21st Century Maritime Silk Road. This paper uses the comprehensive AHP analysis method to establish the theoretical framework of marine industry cooperation in China's countries along the line, and proposes the industrial cooperation mode of different types of marine industry and countries along the country. Exploring a development-oriented cooperation model; stable industries such as marine fisheries and marine transportation industries are suitable for a sound cooperation model, including joint ventures and licensing agreements; and challenging industries such as marine shipping, marine biomedicine, and marine power industries should introduce advantages. Weak industries such as marine engineering construction industry and marine oil and gas industry should adopt a resource reorganization cooperation mode, which can realize the industrial transfer of the weak countries of the industry through technology output.

1. Introduction

The 21st Century Maritime Silk Road is based on the ocean and supported by ASEAN and its member states. It radiates the surrounding areas and South Asia, and extends to the Middle East, East Africa and Europe, further connecting, expanding and seeking China and along the line. The intersection of interests between countries will stimulate the development vitality and potential power of all parties, which will help China accelerate the process of opening up to the outside world and improve the multi-balanced and open economic system [1]. Deepening the cooperation between the marine economy and industry not only closely meets the demands of modernization along the line, but also drives the optimization and upgrading of China's industrial structure. It is an important way to promote the deep integration of China's economy with the countries along the line. It is the 21st Century Maritime Silk Road. Building a promising focus area [2]. This requires a clear understanding of the development characteristics of China's marine industry, innovation and cooperation with the marine industry in the countries along the route, the maximum integration of existing resources, to optimize the overall interests of the region along the Maritime Silk Road and the national industry. At present, the research on marine industry cooperation mainly focuses on two aspects: First, by defining the concept of advantageous marine industry [3], establishing the marine industry evaluation benchmark and index system [4], combined with the use of quantitative analysis methods to study the development of China's marine industry. Characteristics [5], in contrast with the marine economy and industrial development of the United States, Japan, Canada, Australia and other countries, the relative characteristics and development rules of China's marine industry are obtained [6]. The second is a qualitative analysis of the status quo and countermeasures of marine industry cooperation between China and ASEAN countries [7]. The above research mainly focuses on the comparison of the different characteristics of the Chinese and foreign marine industries and the development experience, and the research objects only focus on the countries or regions such as the United States, Australia and ASEAN. For countries along the 21st Century Maritime Silk Road,

including South Asia, West Asia, Research on the comprehensive top-level design of cooperation between major economic sectors such as North Africa, and Europe is scarce. Based on the basic theory of industrial cooperation, this paper explores the theoretical framework of establishing marine industry cooperation between China and the countries along the line, and then divides the type of marine industry in China by constructing China's marine industry evaluation system and comprehensively using the combination of matrix thinking and analytic hierarchy process. Industry cooperation models that match different industry types.

2. Theoretical Framework Of Cooperation In Marine Industry

The cooperation of marine industry should be based on the development characteristics of various marine industries, adhere to the principle of complementary cooperation of resources and technology, and develop an industrial cooperation model with complementary advantages. In terms of industrial development evaluation, the measurement and evaluation framework for the development of marine industry based on economic benefits, related development and growth potential is more common. The existing research on the measurement of China's marine industry basically revolves around the above economic indicators. The environmental characteristics based on external competitive advantages and sustainable development considerations should also be included in the evaluation framework. Therefore, this paper measures the development characteristics of each marine industry from the two dimensions of industrial characteristic value and environmental characteristics, and then according to the development characteristics of different industrial types, based on the industrial economic basic theory, correspondingly proposes the industrial cooperation mode applicable to different types of marine industries.

2.1 Measurement of the Marine Industry.

At present, the research on marine industry measurement indicators is extensive, mainly including learning the benchmarks of foreign scholars' relevance, income elasticity and productivity, and proposes a growth benchmark, industrial cluster benchmark, industry scale, Development potential, comparative advantage and social benefit benchmarks, and comprehensive evaluation benchmarks based on diamond models. Although the above research does not have a unified standard for the construction of the marine industry evaluation index system, it is basically the same, and most of them only focus on the design of the industrial development characteristics, which can provide reference for research. Based on the evaluation dimension of traditional industrial development characteristics, this paper also incorporates the characteristics of marine industry development environment based on external competitive advantages and sustainable development considerations into the evaluation framework, and innovatively builds a marine industry measurement index system, combined with the BCG Matrix method. Give the basis for the classification of marine industry types.

Construction of industry measurement matrix: The marine industry measurement matrix is constructed from two dimensions: industrial characteristic index and environmental characteristic index. According to the different combinations of industrial characteristic index and environmental characteristic index, four industrial types can be classified two type, including: the strong industry. That is, the industrial characteristic index and the environmental characteristic index are both high, and its industrial base is good, with strong competitive advantages and good development prospects. That is, an industry with a weak industrial characteristic index and a high environmental characteristic index has a poor industrial base has a good market prospect and development potential, but has a high development risk coefficient and belongs to an emerging industry. the weak industries.

The index measurement benchmark is established: The industrial characteristic index reflects the advantages and existing problems accumulated in the development of a certain marine industry. Comprehensive analysis and follow-up research results are used to establish an industrial characteristic index measurement index system. The measurement benchmarks mainly include the following aspects: the Economic benefits Benchmark, corresponding to the evaluation of the economic strength and development basis of a certain marine industry, the industry-related benchmarks, correspondingly evaluate the radiation-driven effect of the development of a certain

marine industry on other industries, and judge its support and pull to the related industries. The size of the growth potential benchmark, corresponding to the evaluation of a certain marine industry development potential size and market prospects; the science and technology use benchmarks, corresponding to the evaluation of the technical level of a certain marine industry development, reflecting the development potential of the industry.

The Environmental Characteristics Index mainly measures the development potential of a certain marine industry under the opportunity of the Maritime Silk Road Initiative, including the benchmarks for sustainable development, the benchmark for external competitive advantage, and the benchmark for industrial growth resources: Sustainable development benchmark. By evaluating the division of labor and status of a certain marine industry in the global marine industry value chain, it reflects the outward competitiveness of the marine industry in the international environment. industry growth resource benchmark. By evaluating the contribution of marine science and technology and resource elements in the production process of a certain marine industry, it is classified into a technological development type and a resource-dependent marine industry, and gives a high evaluation to industries that rely on technological development and innovation.

2.2 Selection of Cooperation Model for Marine Industry.

According to the purpose, method and point of view, it can be classified into different types. The regional industrial cooperation mode includes the industrial cooperation mode based on innovation, the industrial cooperation mode based on market association and the industrial cooperation mode based on industrial chain [8]. Referring to the above research, the paper proposes an industrial cooperation model for four types of marine industries: 1. Exploring the development cooperation model. Including international strategic alliances, technology alliances and cross-border industry demonstration cooperation, etc., applicable to strong industries. On the one hand, through the docking of international standards, it will eventually form a dominant industry that matches the domestic economy and is in line with the international economy, and its industry is in a leading position in the world. On the other hand, it has formed an advantageous industry alliance with relevant industries in the international leading position. The development of industry linkage promotes industrial performance through joint research and innovation. 2. Using a perfect cooperation model. Applicable to stationary and challenging industries, including joint ventures, licensing agreements, OEM production, and FDI. That is to say, according to the principle of complementary advantages, regional selective investment, and then to obtain complementary production factors with the home country, expand the development of complementary target market, and constantly optimize the division of labor in the domestic industrial chain. the resource reorganization cooperation mode. Applicable to weak industries, including homeopathic and contrarian industries.

3. The Characteristics Of Marine Industry

3.1 Characteristics of China's Marine Industry.

Selection and calculation of benchmark indicators for marine industry measurement: According to the theoretical framework of marine industry measurement, the marine industry development characteristic index is measured from the aspects of economic benefit benchmark, industrial linkage benchmark, growth potential benchmark and technology utilization benchmark. Using the industry specialization rate and industrial contribution rate as the calculation indicators of economic efficiency benchmark, Pearson index, demand income elasticity and marine scientific research personnel accounted for the latter three indicators; using sustainable development benchmarks, external competitive advantage Benchmarks and industry growth resource benchmarks measure the ability of an industry to cope with opportunities and challenges in the macro environment. The corresponding calculated indicators are the energy consumption output rate, industry extroversion, and the level of scientific and technological resources required for industrial development as shown in Table 1.

Index framework construction and weight determination: According to the theoretical framework of marine industry measurement, the judgment matrix is obtained through literature review and expert consultation, and the weights of each industry selection index layer are calculated, and then scored by weighted summation as shown in Table 1.

Table 1 Industry benchmark and Calculation weight

	Base name	Measure index	weights
Industrial characteristics	Economic benefit	Industrial specialization rate	0.161
		Industrial contribution rate	0.161
	Industrial association	Pearson index	0.228
	Growth potential	income elasticity of demand	0.378
Environmental characteristics	Technology utilization	Ratio of research personnel	0.073
	sustainable development	Energy Consumption/Output Rate	0.328
	External competitive advantage	Industrial Extroversion	0.413
	Industrial growth resources	Resources for Industrial Development	0.261

3.2 Characteristics of Marine Industry Development along the Route.

By referring to the definition of countries along the 21st Century Maritime Silk Road, the paper chooses to have a longer coastline, rich marine resources, a good foundation for marine industry development, and a marine economy based on the characteristics of marine resource endowments and marine industry development. The comparative advantage of countries in West Asia and North Africa is the subject of research.

West Asia and North Africa: The countries of West Asia and North Africa are rich in marine oil and gas resources, and the marine oil and gas industry is highly developed. The development advantages of other marine industries are not significant, and the overall marine economic structure is relatively simple. In the offshore oil and gas industry, the marine oil and gas industry in each country is its dominant industry. In terms of marine fisheries, governments support a large number of marine fisheries, but the overall development advantages of fisheries are not significant. They rely on imported seawater products to meet domestic demand. Most of the importing countries are geographically peripheral regions with obvious geographical advantages. Egypt and the United Arab Emirates are more developed because of their important marine strategic hub status. The advantages of this industry are not obvious in other countries. In the coastal tourism industry, the United Arab Emirates has obvious advantages in business tourism development due to its more developed marine service industry. Trade and tourism center; The desalination industry has a significant advantage in Saudi Arabia, and the development advantages of other marine industries in the countries of West Asia and North Africa are not significant.

4. Marine Industry Cooperation And Mode Selection

4.1 Exploring Development.

China's coastal tourism and marine chemical industry will become the dominant industries for opening up to the outside world. China's marine chemical industry's scientific research investment and technical efficiency advantages are more obvious. However, factors such as low openness to the industry and obvious resource inferiority have restricted its development. It can be linked to the related industries of countries with rich marine mineral resources such as India, Egypt, Oman and Saudi Arabia to form economies of scale and jointly overcome the marine chemical industry itself. The capital investment requires higher limitations, jointly expand the scale of the industry, and strive to become the leader and highlight industry.

4.2 Useage Perfect Type.

Both the stationary marine industry and the challenging marine industry are applicable to the use of a comprehensive cooperation model. The marine fishery and marine transportation industry is a stable type of industry with a good industrial base, but limited by resource difficulties and limited development prospects. Among them, China's marine fisheries can be selectively invested in Saudi Arabia, Kuwait, Qatar, Bahrain, Iraq, Yemen, Oman, United Arab Emirates and other countries through joint ventures and licensing agreements, and optimize the industrial chain through complementary advantages. Multimodal transport with containers, promote the improvement of the land and sea transport system, promote the construction of coastal ports in an orderly manner, improve the port support capacity and service level, accelerate the construction of electronic ports, and create the necessary conditions for customs clearance services.

4.3 Resource Reorganization.

China's marine engineering industry and marine oil and natural gas and other weak industries should carry out resource restructuring industry transfer. Among them, the offshore engineering construction industry is an important area for China to take the lead in going abroad. It is cooperation between China and the countries along the Maritime Silk Road in the marine field. The important content of China should rely on the comparative advantage of other industries to carry out the transfer of homeopathic industries.

5. Conclusions

This paper builds a marine industry measurement matrix and combines the analytic hierarchy process to quantitatively study the choice of cooperation modes between China and the countries and regions along the Maritime Silk Road. It should promote political dialogue through cooperation in marine industry, resolve confrontation, reach understanding, and strive to form countries and regions along the route. Cooperation and win-win situation, mutual benefit, peace and stability. This requires a comprehensive grasp of the characteristics and policies of the development of the marine industry in China and along the line, innovation of the cooperation model of the marine industry, and the effective implementation of specific supporting safeguard measures.

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