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Analysis of the Current Situation and Development Strategies of Marine Fisheries in Jiangmen City

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Abstract: Based on the statistical data of marine fisheries in Jiangmen City in the past three years, this paper analyzes the development status and trend of marine fisheries. By combining the information obtained from enterprise research, it deeply analyzes the main problems existing in the development of marine fisheries in Jiangmen City and puts forward corresponding optimization countermeasures, which provide suggestions for promoting the high-quality development of marine fisheries in Jiangmen City.

Keywords: Marine fishery; High-quality development; Countermeasures and suggestions

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1. Preface

Marine fishery is not only the primary industry of the marine economy, but also the foundation of the development of the second and third industries of the marine economy, and plays a very important role in the development of the marine economy. The data in the statistical annual report of marine fisheries in Jiangmen City shows that in the past five years, despite maintaining a stable growth state in the total output value of Jiangmen's marine fishery, there still exists a significant disparity with advanced areas such as Guangzhou and Shenzhen in terms of marine fishery development, particularly regarding the optimization of the fishery industry structure and achievement of high-quality development [1]. Therefore, in order to promote the transformation and upgrading of the development of marine fisheries in Jiangmen City and improve the quality of development, it is necessary to first have a deep understanding of the basic situation of the development of marine fisheries in Jiangmen City. Then, through vertical and horizontal comparisons, the main problems that exist are identified and relevant development strategies are proposed.

2. The status quo of marine fishery development

In order to fully grasp the development status of marine fisheries in Jiangmen City, this paper collected and sorted out the statistical data of the annual marine fisheries report of Jiangmen City from 2021–2023. The

development of marine fishery in Jiangmen City was analyzed comprehensively from eight aspects, such as the total value of the fishery economy, the total amount of aquatic products, the area of mariculture, mariculture production, marine fishery production, the processing capacity of aquatic products, the working population of marine fishery, and the disaster situation of marine fishery.

2.1. Total value of fishery economy

As shown in **Table 1**, the total value of the marine fishery economy in Jiangmen City in 2022 was 3,320,157 million yuan, an increase of 16.9% compared to 2,839,546 million yuan in 2021. Among them, the fishery (aquatic products), fishery industry, and construction industry all showed significant growth, but the fishery circulation and services industry decreased by 153.35 million yuan. From the perspective of industry proportion composition, the proportion of fishery (aquatic products) and fishery service industry has declined slightly, while the proportion of fishery industry and construction industry has increased. Among them, the proportion of fishery circulation and services industry has shown a downward trend in recent years, from 10.3% before the COVID-19 epidemic to 3.6%, indicating that the impact of the epidemic on the third-party service industry has a strong continuity.

Table 1. Total output value of marine fishery economy

Year	Total output value	Fishery (aquatic products)		Fishery industry and construction industry		Fishery circulation and services industry	
		Total output value	Proportion	Total output value	Proportion	Total output value	Proportion
2020	2591775	1982680	76.5	477011	18.4	132084	5.1
2021	2839546	2228850	78.5	475637	16.8	135059	4.7
2022	3320157	2569725	77.4	630708	19.0	119724	3.6

2.2. Total amount of aquatic products

As shown in **Table 2**, from 2020 to 2022, the total amount of aquatic products in Jiangmen continues to maintain an increasing trend, reaching 847,889 tons in 2022, an increase of about 2% compared with the data in 2021. Among them, the production of marine fishing has decreased by 2,000 tons compared with last year, while the production of marine aquaculture has increased by about 8,000 tons, and the combined proportion of the two is the same as in previous years. Freshwater fishing production remained basically unchanged, and freshwater aquaculture production increased by 10,000 tons. On the whole, freshwater products are still the main supply of aquatic products in Jiangmen City. Statistics show that the area suitable for mariculture in Jiangmen is as high as 18,817 hectares, ranking third in the province. However, the output of mariculture is much lower than that of freshwater aquaculture, indicating that the existing mariculture resources have not been utilized to the maximum extent and there is still a lot of room for improvement.

Table 2. Total amount of aquatic products

Year	Total	Seawater production			Freshwater production		
		Marine fishing production	Mariculture production	Total proportion	Freshwater fishing production	Freshwater aquaculture production	Total proportion
2020	807973	73198	219655	36.25	9642	505478	63.75
2021	830761	67484	236748	36.62	6999	519530	63.38
2022	847889	65468	244112	36.51	6973	529945	63.49

2.3. Mariculture area

As shown in **Table 3**, the mariculture area of Jiangmen City has remained unchanged in the past three years. According to the classification of aquaculture products, the aquaculture area of fish, crustaceans, and shellfish has not changed. This data also indicates that consumers' consumption demand for mariculture products has not changed significantly during the epidemic period, and coupled with the influence of other uncontrollable factors, the management strategy adopted by fishery enterprises is relatively stable and conservative.

In addition, the 18,817 hectares of farming area is mainly concentrated in the two aspects of beach farming and marine farming, of which the beach farming area is 11,960 hectares, accounting for 63.6%. According to the data of the third National Land Survey, Jiangmen has a total of 15,684 hectares of coastal beach area, indicating that more than 3,700 hectares of beach can be developed for farming or other purposes.

Table 3. Mariculture area (classification by product)

Year	Total area	Fish	Crustacea	Shrimp	Crab	Shellfish
2020	18815	2358	6344	5279	1065	9972
2021	18785	760	10960	9064	1895	7054
2022	18817	769	10981	9084	1897	7067

2.4. Mariculture production

As shown in **Table 4**, according to the classification of aquaculture products, the output of mariculture in the past three years has continued to increase, and the output of mariculture in 2022 has reached 244,112 tons, of which the output of fish and crustaceans has increased, especially the output of shrimp has increased by nearly 5,000 tons, and the output of shellfish is the same as last year. From the overall situation of various categories, the production of fish and shellfish is in a state of decline, while the production of crustaceans has increased rapidly, indicating that the market demand for shrimp and crabs is high in the past two years, which is the driving force to promote enterprises to adjust the type of aquaculture.

Table 4. Mariculture production (classification by product)

Year	Total output	Fish	Crustacea	Shrimp	Crab	Shellfish
2020	219655	32087	36716	32556	4160	150852
2021	236748	18639	78622	72389	6233	139487
2022	244112	20247	83873	77188	6685	139992

2.5. Marine fishery production

As shown in **Table 5**, in the past three years, the marine fishing output of Jiangmen has shown a gradual decline. In 2022, the marine fishing output is 65,468 tons, which is reduced by about 1,000 tons compared with 2021. The fishing output of fish and crustaceans is the same as that of last year, and the fishing output of shellfish is mainly declining. Due to the restrictions of epidemic prevention and control measures, the production and operation of fishing enterprises have been greatly affected, and it is believed that the fishing data in 2023 will increase.

Table 5. Marine fishery production (classified by product type)

Year	Fishing production	Fish	Crustacea	Shrimp	Crab	Shellfish	Alga	Cephalopoda	Other
2020	69355	50910	14702	11010	3692	2220	201	400	922
2021	66384	50458	13217	6094	7123	723	137	1761	88
2022	65468	50617	13515	6840	6675	206	99	993	38

2.6. Aquatic product processing capacity

As shown in **Table 6**, in the past three years, the processing capacity of aquatic products in Jiangmen has shown an increasing trend, and the processing capacity of aquatic products in 2022 has increased by 24,000 tons compared with that in 2021. While the number of enterprises has remained unchanged, the processing capacity of aquatic products has been greatly improved, indicating that the overall scale of enterprises is expanding. From the perspective of actual processing output, the total amount of processed aquatic products in the past three years has remained at about 70,000 tons. According to the previous statistical data, the total amount of aquatic products in Jiangmen in 2022 is 847,889 tons, indicating that a large number of aquatic products either directly enter the retail market or are transported to other places for processing. This phenomenon also reflects the current unbalanced state of the development of the fishery industry chain in Jiangmen City. Enterprises attach great importance to aquaculture, but the processing link with the highest added value is relatively weak, which urgently needs to be optimized and improved.

Table 6. Processing capacity of aquatic products in 2020–2022

Year	Aquatic processing enterprises	Aquatic processing capacity (tons/year)	Processing enterprises above the scale	Total amount of aquatic products (tons)	
				Freshwater processing products	Seawater processing products
2020	79	91416	13	20952	52937
2021	82	91643	12	19716	53964
2022	81	115341	9	20135	50924

2.7. Marine fishery working population

As shown in **Table 7**, compared with 2021, the number of marine fishery employees in 2022 has decreased by about 1000, including a decrease of about 600 professional employees and about 300 part-time employees. Overall, the proportion of female employees is about 6.3%, indicating that the production and operation of the entire fishery is mainly dominated by male industry personnel. Among professional practitioners, their work mainly focuses on three aspects: fishing, accounting for about 50%; aquaculture, accounting for about 25%; and other auxiliary work, accounting for about 25%.

Table 7. Marine fishery working population

Year	Marine fishery employees	Professional employees	Part-time employees	Temporary employees	Professional employees		
					Fishing	Cultivation	Other
2020	26871	19937	6271	663	11607	5591	2739
2021	33442	23112	9720	610	11584	5852	5676
2022	32592	22515	9480	597	10619	6181	5715

2.8. Marine and fishery disasters

As shown in **Table 8**, the marine fisheries disasters over the past three years have been escalating annually. The affected aquaculture area in 2022 increased by 65 hectares compared to 2021, with an increase in aquatic product losses of 360 tons, with a loss value reaching 23.476 million yuan. This situation is closely related to the number and severity of typhoons. As a major marine aquaculture area, Taishan City faces several typhoons each year from June to September. Although aquaculture enterprises have made full disaster prevention preparations, there are too many uncontrollable factors in typhoons, resulting in significant losses each time. It is recommended to reduce the extent of losses by taking measures such as purchasing fisheries insurance.

Table 8. Marine fishery disasters from 2020 to 2022

Year	Disaster aquaculture area (ha)	Loss of aquatic products (tons)	Loss of aquatic products (ten thousand yuan)
2020	94	143	1490
2021	121	462	2310
2022	186.52	829	2347.6

3. Analysis of problems in marine fishery development

Combined with the above data analysis, we selected a number of representative enterprises in the marine fishery industry in Jiangmen City for investigation and in-depth understanding of the actual situation of the industry from the production and operation of enterprises, market competition and changes, development prospects, and other aspects, and summarized the main problems existing in the development of marine fishery in Jiangmen City.

3.1. Imbalance structure of the fishery industry

According to the previous analysis, compared with the proportion of the output value of the fishery industry in the whole province and even the whole country, the proportion of the primary industry of marine fishery in Jiangmen is too large, and the proportion of the tertiary industry is too small. The tertiary industry with the highest profit-added value has not been developed, resulting in a serious imbalance in the industrial structure. If the industrial structure is not optimized and upgraded, the development of the output value of the whole industrial chain will be seriously restricted, and it will not be able to achieve high-quality and sustainable development. Relevant policies and measures must be formulated to guide the rapid growth of the fishery tertiary industry [2,3].

3.2. Low productivity of the fishery

Jiangmen City has very rich marine fishery breeding resources and a large number of fishing vessels and equipment, but from the actual output situation, it is not ideal and does not give full play to the effect of the existing basic resources. We must investigate and study to figure out whether it is a financial problem, a technical problem, or a production management problem, and then take targeted improvement measures [4].

3.3. Lack of aquatic product processing link

Aquatic product processing link is the highest value-added link in the whole fishery industry chain. At present, the scale of aquatic product processing enterprises in Jiangmen City is relatively small, lacking large and super large leading enterprises, thus unable to carry out deep processing of aquatic products. It is understood

that many aquatic products are exported to other provinces and cities for deep processing, resulting in a large number of product sales and tax losses. Therefore, government departments should issue relevant policies and measures to encourage and guide the local aquaculture enterprises and processing enterprises to pair up and maximize the completion of the deep processing and sales of aquatic products locally.

3.4. Lack of fishery infrastructure

Limited by the economic investment of the local government, the construction of marine fishery infrastructure in Jiangmen is relatively lagging. The construction of ports, docks, and supporting fishing vessels for maintenance, product inspection and quarantine, cold chain logistics, ultra-low temperature cold storage, and other facilities is not perfect, and the emerging links such as professional aquatic sales, network platform, operation, and promotion are also very short. The lack of basic investment further restricts the rapid development of the fishery economy.

3.5. Unestablished fishery industry cluster

According to the marine fishery enterprises surveyed in this study, there are fewer large enterprises and more small and medium-sized enterprises. In general, there is a lack of leading enterprises with leading position in the industry, and most of them are individual businesses or sole proprietorship enterprises, with high similarity of main business and products and lack of complementarity, so they cannot form effective industrial clusters. The quality of industrial development is poor, and the industrial cluster effect has not yet been reflected.

3.6. Absence of adequate technical support and talent nurturing

On the one hand, there are no university majors and research institutions specializing in marine fishery in Jiangmen area. Secondly, the marine fishery industry in Jiangmen area has not formed a large scale, and its investment in scientific research is generally low, lacking core technology and competitiveness. Most small and medium-sized enterprises cannot introduce high-level marine scientific research and management talents. As a result, the marine fishery economy cannot develop to the level of high quality, high technology, and high efficiency.

4. Optimization strategies for the development of marine fisheries

4.1. Adjusting the industrial structure and vigorously promoting the development of the fishery tertiary industry

The unbalanced industrial structure has become the key factor restricting the development of marine fishery economy in Jiangmen City. While promoting the transformation and upgrading of the primary fishery industry, we should actively guide and promote the healthy development of the tertiary fishery industry, constantly optimize the industrial structure, focus on strengthening the complementary advantages and the coordinated development of marine fishery with tourism and leisure, biomedicine, food manufacturing, and other industries, and expand the development space of marine fishery industry.

4.2. Transforming and upgrading the aquaculture model to improve the production and efficiency of aquaculture

At present, the absolute output of marine aquaculture and fishing industry in Jiangmen City is high, but the output efficiency is poor. With abundant marine resources in advance, it is necessary to transform and upgrade the original production and operation mode, increase the investment in scientific and technological innovation

and application of marine fishery industry, and support enterprises to independently develop and improve advanced technologies in breeding, fishing, processing, and preservation. In order to ensure the sustainable and high-quality development of fishery economy, we should support enterprises to introduce and absorb advanced technology and equipment and develop independent innovation ability [5,6].

4.3. Promoting the development of aquatic processing industry and enhancing the added value of the industrial chain

The deep processing of aquatic products is the link that produces the highest added value in the aquatic industry. At present, although the processing capacity of aquatic products in Jiangmen is still in surplus, it is still in a relatively weak and primary stage on the whole. Therefore, through the adjustment of industrial structure, we should guide enterprises to increase the investment in the processing of aquatic products, improve the production and processing efficiency of aquatic products, and explore and promote the deep processing of aquatic products, to enhance the added value of products and improve the comprehensive development and utilization level of by-products of aquatic products processing [7].

4.4. Strengthening the construction of fishery infrastructure to help the high-quality development

According to the project arrangement of the 14th Five-Year Plan for marine economic development of Jiangmen City, about 7 billion yuan will be invested in rebuilding and building fishery infrastructure in the next five years. Key projects include Guangdong Agricultural Products Processing Demonstration Zone (Jiangmen Taishan), Guangdong-Hong Kong-Macao Greater Bay Area (Jiangmen) Agricultural Products Trading and Circulation Center, Jiangmen Agricultural Products Cold Chain Logistics Advantage Production Zone Industrial Park, Sandi Fishing Port upgrading, Taishan Guanghai Fishing Port upgrading, covering port upgrading, aquatic storage, cold chain distribution, aquatic products circulation and trade, and other links. The completion of the above projects will lay a solid foundation for the high-quality development of the fishery economy in Jiangmen City.

4.5. Strengthening support for enterprise construction and building a first-class marine fishery brand

Jiangmen City has a large number of marine fishery enterprises. After years of development, it has also created a number of aquatic products brands, such as Taishan eel, Taishan Oyster, Taishan green crab, South American white prawn, etc. However, on the whole, there is still a lack of enterprises with a leading position in the industry and famous brands that can be widely recognized. Therefore, government and industry associations should increase the support for the brand construction of key enterprises, build a nationally famous brand of marine fishery, and improve the core competitiveness of Jiangmen marine fishery industry. Building a well-known fishery brand is a systematic work, which not only requires enterprises to enhance their competitiveness but also to strengthen the research on the external market, and produce and sell famous and excellent products that are well received by the market. At the same time, they should make efforts in product marketing, trademark registration, product packaging, and publicity, and gradually establish a unique brand image of the enterprise [8].

4.6. Strengthening the introduction of talents and improving the application level of industrial scientific and technological innovation

Talent is the core and key to high-quality industrial development. Relevant policies and supporting incentives

for talent introduction should be formulated at the government level to ensure that talents are recruited and retained, who can work safely and give full play to their talents. Secondly, we should accelerate the construction of scientific and technological innovation platforms for marine fishery, strengthen the training of scientific and technological personnel for marine fishery, and enhance the participation of scientific and technological personnel in the industrialization of marine fishery. It is also necessary to encourage scientific and technological personnel to actively participate in scientific research and application, improve the application and transformation rate of scientific and technological achievements, enhance the core competitiveness of enterprises and industries, and ensure the sustainable development of the fishery economy.

5. Conclusion

This paper conducted a systematic analysis of the current development status of the marine fisheries industry in Jiangmen City. In conjunction with corporate research, it deeply examines the primary issues present in the growth of the marine fisheries industry. Based on this, targeted optimization measures are proposed from various aspects, such as optimizing the industrial structure, strengthening infrastructure development, establishing fisheries brands, and attracting talent. These recommendations provide valuable insights for the decision-making of the marine fisheries management department in Jiangmen City.

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