

# Path Selection of Fishing Village from Perspective of Ecological Civilization - Empirical Analysis Based On Hainan Province

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**Abstract.** Under the background of the marine ecological environment changes and the upgrading of the National Oceanic strategic positioning, the positioning and development path of marine fishing villages need to re-architecture. Based on the perspective of ecological civilization, this paper obtains information through literature survey, semi-structured interviews, etc., and comes up with the problems of fishing village in Hainan Province from both qualitative and quantitative dimensions. Combined with the fishing village construction experience at home and abroad, two kinds of fisheries management modes of co-operative business and “company + mariculturist” are proposed for future fishing village fisheries development in Hainan Province. The following development path are provided for marine fishing village: grasp ecological resources protection, consolidate the development of a blue background; strengthen technological innovation, promote upgrading and transformation of fishing village; develop leisure fishing to create beautiful fishing village with features; strengthen fisheries personnel training, establish scientific management mechanism.

## Research background

Following that the 2011 “Twelfth Five-Year Plan” first proposed the strategic plan of “promote the development of marine economy”, the state has emphasized the Ocean status. In 2013, “State Council views on promoting the sustained and healthy development of marine fisheries” more directly pointed to “focus on strengthening marine fishery resources and ecological environment protection, enhance the capacity for sustainable development of fisheries.”

Hainan Province is the largest province under the jurisdiction of waters, also has a unique tropical marine environment in China. It has an incumbent responsibility on the exploration of the future development of marine fishing village path. In July 2014, the Hainan Provincial Oceanic and Fishery Department issued a notice about the collection “Hainan beautiful fishing village Construction Reporting” units, proposed to combine the international tourism island, new urbanization, beautiful rural development and fisheries restructuring background, and accelerate the construction of Hainan beautiful fishing village.

On this basis, this paper finds problems through field research, borrows abroad fishing village experience, and discusses the development path choice of the fishing village of Hainan future. With local conditions, it will provide practical countermeasures and suggestions for Hainan beautiful fishing village development goals.

## Research methods

To ensure the comprehensiveness and objectivity of information, this paper collects the first and secondary sources of relevant fishing village construction through literature survey and depth

interviews. And based on the research literature, field research and semi-structured interviews are adopted to investigate and visit Hainan marine fishing village such as Sanlian Village in Haikou City. In terms of the basic situation of individual fishermen, fishery production operations and the infrastructure of their village fishing village, this paper makes depth interviews on marine fishermen, and collects basic conditions of qualitative information in Hainan marine fishing village.

Secondly, in the study of fishermen traditional culture and fishing village social relations right in Hainan Marine fishing village Construction, qualitative analysis such as deductive reasoning is done. On the analysis of fishermen income, fisheries infrastructure, fisheries economic output and other issues that Hainan fishing village construction exists, EXCEL data analysis software is used, and quantitative research data and related statistical analysis and other methods are also used. Qualitative analysis and quantitative description of mathematical statistics are strive to be closely integrated.

### **Status and problems of Hainan marine fishing village**

**Basic situation in Hainan marine fishing village.** According to the 2014 Yearbook of Fishery Statistics, in 2013, Hainan has 385 marine fishing villages, 76,564 households' marine fisheries, marine fisheries population of 393,542, including 258,208 people of traditional marine fishermen. In recent years, the income of fishermen in Hainan has maintained steady growth, which is slightly higher than the national average. Hainan Marine fishing villages are mainly distributed in Lingao County, Danzhou City, Lingshui County, Qionghai City, Wenchang City, etc. The overall layout is centralized but less in the southwest of Hainan Dong Li Autonomous County, Changjiang Li Autonomous County, and Eastern Municipal fishing village. From the perspective of fishing village infrastructure, in response to new socialist countryside construction, Hainan also accelerated agriculture (fishery) infrastructure, currently the fishing village roads and power facilities are relatively perfect, but sanitation facilities, medical facilities, water supply facilities and network communication facilities are yet to be strengthened.

**Problems analysis in Hainan marine fishing village.** The 2014 "China Fisheries Yearbook" Data shows that in 2013, in Hainan Province, the marine fishing in inland fisheries production accounted for 61.11% of total production, and a large proportion of aquatic products. Hainan has a small fishing accounted for 80% of the total fishing, and offshore fishing boats is lack of ability. In addition, the visit finds that except for a few cities and counties such as Qionghai City, Sanya City, Danzhou, etc., fishermen fishing of other cities and counties is concentrated in coastal waters. Take Haikou City for an example, fishermen working range is as far as just over 10 nautical miles. Visibly, due to small fishing boats and other reasons, Hainan marine fisheries production operations is limited in operational capability focusing on offshore fishing, and offshore fishing operations development is lags behind.

In addition, offshore fishing and land-based sources' excessive emissions into the sea makes most of the current marine ecosystem environment in a healthy and unhealthy state, and offshore fishery resources decline is widespread.

The 2013 Hainan fishery economic added value accounted for 7.79 percent of the gross regional product of Hainan Province, which should not be underestimated a part of the economy in Hainan, and has an important role in terms of economic growth. However, compared with Guangdong, Shandong and other developed areas of fisheries, Hainan fishery is still at a low level, which mainly denotes that irrational industrial structure in the fishery, secondary and tertiary industries of fisheries industry and construction, fisheries circulation and other services account are low. Three industrial structure ratio in Hainan fishery is 87.5: 10.1: 2.4. Among them, recreational fisheries that

set recreation, tourism, culture, food and beverage and other industries as whole combined with first industries to increase the income of fishermen and fishing economic development as the ultimate goal are behind, and the proportion of economic output is low, service and the level of service is poor.

In the aspect of fisheries infrastructure, Hainan has only a national aquatic original seed field, four coastal fishing ports, and two national aquatic germplasm protected areas. And Hainan fishing port exists present phenomenon of disrepair, and it is often affected by typhoons, invasion of the tide, wind, poor anti-wave capacity. For the fishing ports that have been built, the most facilities are not complete, which cannot meet the standard of national central fishing and first-class fishing port. Secondly, mostly fishing boats that has been built in Hainan are only for supplement supply, exchange of catch, so fishing port economic zone has not yet formed.

The scientific and technological strength of Hainan fishery is insufficient, mainly shows: less Fisheries Extension agencies; extreme lack of extension workers and partially staffing fails within the real job; low education level and technical level of fisheries scientists, lack of talent; less technology promotion funds.

The 2010--2014 Fisheries Statistical Yearbook data analysis shows that per capita net income of fishermen showed a rising trend under the influence of the recession and national policies in coastal fishery resources in nearly five years, but disposable income gap is widening compared with urban residents per capita. Further, since the national fisheries subsidies are usually transferred to ordinary fishermen by captain, wealth gap is widening, and the overall level of income is low within fishermen. Hainan fishermen in come phenomenon is about the same with the national. The Hainan fishermen questionnaire results show that Hainan fishermen present low level of education, and fishery labor tends to the phenomenon of aging.

The interview found that the network communications services of Hainan fishing village are not perfect, mainly for the lack of Fisheries public information service. By the end of 2013, in Hainan Province, there are only two sites offering public information services to promote aquaculture, 7 hotline service. There is currently no specific information service platform for fishing village. Secondly, the external communications facilities of fishing village are inadequate, the Internet and other new media coverage is low. According to the content of “2014 Internet Development State Report in Hainan Province”, by the end of December in 2014, Hainan netizens have reached 4.21 million, which accounted for only 19.7% of Internet users in rural areas.

### **Domestic and foreign experience in the construction of marine fishing village**

Marine resources development level of foreign countries and domestic coastal fishing province is relatively high, most of which combine first fisheries industry and the tertiary industry to complete transformation and upgrading of the industrial structure of fisheries, laying foundation for fisheries development, the construction of a fishing village, fishermen income and playing a catalytic role. Take Shandong leisure fishing village, Fujian Water fishing village, Japanese fishing village and American fishing village based on recreational fisheries for example to card summary literature results in Table 1, to offer experience for the future development and construction of Hainan Marine fishing village.

Table 1 List of domestic and foreign experience in the construction of marine fishing village

			Construction experience	
Shandong leisure fishing	1	Efforts to develop tourism, fishing, clamming, fresh goods, shopping and experience fishing with entertainment as the main content of the recreational fishery		
	2	Develop transport infrastructure		

village	3	Construct domestic first-class sea-related research and teaching institutions, develop marine research power
	4	Develop three-dimensional ecological farming road with both economic and environmental benefits
Fujian Water fishing village	1	Government-led, introduce a plurality of policy advice, support new form of tourism development and fisheries
	2	Mining and package “water fishing village” tourism resources and elements, highlight the main resource characteristics and personality of recreational fisheries, create tourism brand and tourism boutique
Japanese fishing village	1	Nation proposes “charming fishing village construction” program; lead fusion of the first, second and tertiary industries, form complete industrial chain with production, processing, sales and service as whole
	2	Encourage women to participate in fisheries-related work, such as fishing technical guidance, teaching cooking, aquatic products processing and so on
	3	Focus on the development of future-oriented industries, use marine to conduct advanced research, establish tourism park in the Institute, study Marine Therapy and make deep ocean water research
	4	Encourage people to engage in agriculture, forestry and fisheries, provide legal protection and economic subsidies, attract young people in the fishery, provide professional training
American fishing village based on recreational fisheries	1	Government and civil society organizations cooperate to strengthen the management of recreational fisheries, conserve fisheries resources to maintain the sound development of recreational fisheries.
	2	Administration and industries management are complementary, emphasize planning, environmental protection, and the legitimate interests of fisheries practitioners and consumers

## Ocean fishing village development model and development path

**Recreational fisheries management mode selection.** Hainan is located in Island, surrounded by the sea with many fishing villages. In the development of recreational fisheries, we can learn from the success stories in the construction of marine fishing village. Two kinds of fisheries management modes of co-operative business and “company + mariculturist” are proposed for future fishing village fisheries development in Hainan Province.

Farmers (fishermen) professional cooperative is an economic entity. In this mode, the fishermen are members and the cooperative takes the enterprise management externally, and provides services to members internally, such as the provision of expertise and sales channels. Hainan fishermen have lower knowledge level, and the rendering aging. Cooperatives can be set up by local governments or village. This small organization facilitates communication with fishermen, and calls fishermen to join. According to the actual circumstances of fishermen to develop appropriate price classification standard and unified management, the income will be distributed in proportion to the fishing households. And in the growing development of fisheries cooperatives, we may establish cooperation with other companies, to draw funds, then nurture to make fishing village construction perfect, so as to build brand characteristics and promote development.

Company + mariculturist mode can maximize the integration of government resources and private capital, which is fit for the development of recreational fisheries fishing village with a certain foundation. In this mode, the local government initiates the establishment of more casual

fishing village Management Company, to support recreational fisheries and norms, and fish farmers carry out a full range of business activities of guidance, and to develop relevant management system with the content of security, marketing, tour guides and complaints. Some villagers enjoy equity shares and participate in management as a representative. Its advantage is regarding the fishing village as a whole to attract tourists, organizations unify tourist with arrangements for food, lodging, and other activities. According to the uniform requirements of company, fishermen are responsible for tourists and achieve earnings and dividends.

**Ocean fishing village path selection.** Ecological resources are inexhaustible power source of economic development. Therefore, to grasp ecological protection resources and consolidate the development of a blue background is the top priority of fishing village development. Specifically, we need to strengthen the fishery supervision and law enforcement, strict implement fishery resources system of protected areas, make closed seasons and fishing area systems and other systems to achieve the purpose of controlling the amount of offshore fishing. We should formulate scientific and rational planning and utilization of fishery resources, improve fishing permit system and the fishing quota system, orderly and rational utilize fishery resources, go eco-friendly road of sustainable development.

**A. Strengthen fisheries personnel training and establish scientific management mechanism**

Fisheries personnel training will inject new life into the development of marine fishing village. The Government should increase the province's universities and research institutes related to capital investment, to attract research talent in the fishing village of fisheries research and development, develop research and innovation team with leaders or experts and professors as the core discipline and strong competitiveness. Secondly, we must form a scientific management system with complementary administration and industries management. From the internal management and external administrative supervision of the industry together, we should standardize the behavior of fishermen, enhance service quality and service capabilities in fishing villages.

Industry restructuring and upgrading of ocean fishing village is the only way for future development. First, the features of marine fishing village should be reconstructed. It addition to its traditional economic production functions and political functions, it should also achieve social management and services, and cultural heritage features. Therefore, industrial restructuring and upgrading of ocean fishing village needs to match, constitute poles between new science and technology, Internet technology and traditional fisheries, complete integration of fishing village primary, secondary and tertiary industries in the process of interaction to form complete industrial chain with production, processing, sales and service as whole. To take the "Internet +" in the east, at the same time of perfecting fishing village infrastructure construction, we should build public information service platform of fishing, to build wisdom ocean fishing village and wisdom marine fisheries.

The opportunity and unique tropical resources of Hainan international tourism is land offers a wealth of resources to create the background for featured beautiful fishing village. And in the interpretation of the connotation of the beautiful fishing village, in addition to a collection of tourism, recreational fishing, beautiful fresh food, specialty shopping and fishing style experience, etc., we should also dig the cultural characteristic score of local fishing village, such as Hainan Limiao culture, heat culture, Nanyang style, etc., to avoid the homogenization of fishing village construction. To enhance the attractiveness and competitiveness to the fishing village, branding and quality construction is needed, which requires that the quality of tourism services match natural tourism and cultural resources. It need to rely on tripartite cooperation of government departments, tourism industry associations and fisheries industry associations for common strengthening.

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