

Deficiencies and Improvements in International Cooperation on Yellow Sea Pollution Prevention and Control

Rulin Li^{1, a}

¹School of law, Anhui University of Finance and Economics, Bengbu 233000, China

^a1357219414@qq.com

Abstract

The excessive development and utilization of humans have caused marine pollution, and the marine environment is facing increasing threats. The Yellow Sea is a semi enclosed sea area, and its protection requires the joint efforts of coastal countries. Due to the different environmental demands of different countries, there are currently problems in international cooperation and prevention, such as the lack of integrated emergency systems, the dispersion of technological resources, and the lack of sound warning institutions. Therefore, it is necessary for each country to establish a unified marine protection concept, deepen the exchange and cooperation of Yellow Sea pollution control technology, and establish a sound Yellow Sea pollution supervision and warning mechanism to form a comprehensive protection of the Yellow Sea.

Keywords

Yellow Sea, international cooperation, Ocean Community with a Shared Future.

1. Question Raising

On August 16, 2021, NASA satellite captured a set of satellite images of the Yellow Sea in China. From the images, it can be clearly seen that a large area of the Yellow Sea has turned green, and based on historical data, this situation has been happening for many years. The organisms that cause the ocean to turn green are *Enteromorpha prolifera*. The cultivation of seaweed in the southern Yellow Sea provides conditions for the proliferation of *Enteromorpha prolifera*. The large-scale reproduction of *Enteromorpha prolifera* consumes a large amount of oxygen, and can also cause hypoxia and death of fish, shrimp, and shellfish, leading to eutrophication of the seawater. After their death, they will produce an unpleasant odor, which will seriously affect the production and life of coastal residents.

The issue of *Enteromorpha prolifera* is only one aspect of ocean pollution. Land-based pollutants such as industrial and domestic sewage, pollutants discharged from ships, pollution from offshore oil exploration and development, pollution from manual dumping of waste, and unreasonable marine engineering construction and development are all causes of ocean pollution. The Yellow Sea, located in the western Pacific Ocean between China and the Korean Peninsula, is a typical semi enclosed marginal sea in the western Pacific Ocean, International cooperation is urgently needed to solve the pollution problem in the Yellow Sea.

2. Problems in International Cooperation and Prevention in The Yellow Sea Region

2.1. Different countries have different demands for marine environmental protection

A unified framework for the prevention and control of Yellow Sea pollution plays a decisive role in the governance of Yellow Sea pollution. However, in reality, there are significant differences

in cultural traditions, economic development levels, and ideological values among countries, and it is difficult for countries to form a universally recognized convention due to mutual interests considerations. As a developing country, China adheres to the principle of "common but differentiated responsibilities" between developing and developed countries, and always adheres to the red line in the formulation of marine environmental policies and marine development. But South Korea believes that China has a large population, severe industrial waste emissions, and relatively backward pollutant purification technology, and should bear more responsibility for marine pollution. And South Korea has always wanted to take a leading position in the Northwest Pacific Ocean cooperation, committed to establishing a formal regional environmental cooperation institution; North Korea's focus is on national security and economic development, with relatively little attention paid to marine environmental protection; China has proposed the concept of a "community with a shared future for the ocean", elevating the protection of the marine environment to the level of all humanity, advocating that all countries share responsibilities and achievements. ^[1]Due to the differences in these concepts, countries have not yet reached a consensus on the protection of their common maritime areas.

2.2. Lack of emergency mechanisms for international cooperation in marine protection

As a part of the East Asian sea area, the protection and development of the Yellow Sea are mainly based on long-term cooperation plans, such as the "East Asian Sea Plan", which comprehensively manages the coastal zone, mainly manages conventional marine pollution problems, improves common marine pollution problems on a daily basis, and lacks emergency cooperation mechanisms at different levels. There is no specific emergency response plan among countries in East Asia, and forums and conferences around the marine environment mainly exchange information such as marine monitoring data. ^[2]In June 2011, a serious oil spill occurred in the Penglai 19 # 3 oil field in the Bohai Bay jointly developed by China National Offshore Engineering Corporation. The exchange of information between the two countries was not timely, and the United States falsely reported the degree of pollution, resulting in the spread of pollution. Additionally, emergency response mechanisms were not prepared in advance, resulting in serious consequences. ^[3]Countries are striving to develop their own marine mining technologies, but the lack of emergency mechanisms makes it difficult to integrate and use these technologies and information in a timely manner when necessary, making it difficult to control marine pollution in a timely manner.

2.3. Lack of comprehensive pollution warning institutions

The Yellow Sea, as a crossing sea area, has a large sea area and is difficult to monitor. Due to the current lack of environmental pollution warning and information sharing functions in the Yellow Sea, even with basic cooperation among countries, it still appears powerless in responding to emergency warning and emergency response. This will not only deepen the pollution level in the Yellow Sea, but may even cause maritime accidents. It is urgent to explore a complete and efficient monitoring and warning mechanism for Yellow Sea pollution.

3. Suggestions for Solving International Cooperation Prevention and Control Problems in The Yellow Sea Region

3.1. Each country establishes a unified concept of marine protection

Marine resources are a gift from nature, and humans must work together to protect them while demanding from nature. The concept of "a community with a shared future for mankind" encompasses the principles of "common, shared, negotiated, and built together", which are consistent with the goals of global security, win-win development, and peace pursued internationally. It has become the core value of global governance, and the protection of the

marine field should also be the same. [4]Therefore, in the negotiation process, countries in the Yellow Sea should be good at utilizing the characteristics of "soft law" to establish a unified consensus on the prevention and control framework of Yellow Sea pollution.

3.2. Deepen the exchange and cooperation of pollution control technologies in the Yellow Sea

To completely solve the pollution problem in the Yellow Sea, high-end pollution treatment technologies are irreplaceable. Due to the lack of high-end pollution control technology and targeted and efficient pollution prevention and control plans, the pollution situation in the Yellow Sea area is becoming increasingly severe. Therefore, it is necessary to explore mechanisms and plans for deepening the exchange of marine pollution control technologies between China and other coastal countries while keeping state secrets confidential.

3.3. Establish a comprehensive monitoring and warning mechanism for Yellow Sea pollution

The marine supervision and early warning mechanism refers to the comprehensive and accurate evaluation and monitoring of the marine environment through data collection, processing, and analysis. When the data indicators exceed the standards, an alarm message is issued, so that relevant units and personnel can take timely measures to avoid or reduce the harm caused by marine pollution. The joint participation of coastal countries in the Yellow Sea, with diversified data and comprehensive solutions, can better detect changes in the marine environment and avoid shifting responsibility when problems occur. [5]

4. Further Discussion and Prospects

As a semi enclosed sea area, the Yellow Sea has abundant marine resources, great development and utilization value, and contains enormous wealth. It is closely related to the production and life of people in coastal countries, and countries have an obligation to contribute to the pollution control of the Yellow Sea. According to the principle of intergenerational fairness, we also have an obligation to protect the ecological environment of the Yellow Sea and maintain its biodiversity for future generations. As a responsible major country, China has always been committed to collaborating with other countries to protect the marine environment. With the increasing voice of China in the construction of the marine governance system, China will continue to provide China's wisdom and solutions for the development of the marine ecological environment. The construction of the Marine Life Movement Community is also of great value and significance for China to accelerate the construction of a maritime power.

Acknowledgments

This work is supported by Anhui University of Finance and Economics Graduate Research Innovation Project: Study on the International Cooperation Mechanism for the Prevention and Control of Pollution in the Yellow Sea (Project approval number: ACYC2021102)

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