

Development of Mineral Resources in the International Seabed Area and China's Solution

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Abstract

The international seabed area has mineral resources such as polymetallic nodules, cobalt-rich nodules and polymetallic sulphides, but they have not been exploited for technical reasons. At present, most countries are ready to exploit after completing exploration work, but a look at the legislation of each country and the current development status of seabed resources will reveal that there is still an imperfect legal system, a defective development system and inequality caused by the uneven development of technology in each country. In this regard, China should start from the three aspects of law, investment and technology, from before, during and after the whole process of supervision. Under the strategy of marine destiny community, we will promote the process of developing mineral resources in international seabed area in China.

Keywords

Mineral Resources in the International Seabed Area; Deep-sea Exploration and Exploitation; Parallel Exploitation System.

1. Introduction

The international seabed area is rich in mineral resources and has great economic, political and strategic value. All countries hope to get more shares of the resources therein, and several countries have already signed contracts with the International Seabed Authority for development. In the report of the 19th National Congress, the strategic goal of building a strong ocean state is proposed, and the development of regional resources will be one of the important steps. This paper will first analyze the significance of the development of mineral resources in the international seabed area to clarify its importance; then introduce the current status of relevant legislation and the development status of each country, and identify problems from it; and finally propose China's development plan for the mineral resources in the area according to China's situation.

2. Significance of the Development of Mineral Resources in The International Seabed Area

According to Article 1(1) of the United Nations Convention on the Law of the Sea, "'Area' means the seabed and ocean floor and subsoil thereof beyond the limits of national jurisdiction." Most of the mineral resources currently exploited and acquired by mankind come from land, and in fact the Challenger Expedition aboard the British three-masted warship HMS Challenger, the first scientific expedition to explore the world's oceans and seabed, discovered the existence of polymetallic nodules on the seabed from 1872 to 1876. But at that time, due to the limitation of technology, it was impossible to mine a large area of the sea. Subsequently there has been a great effort to develop undersea technology, and with the growth in demand for various

biological and mineral resources, more and more attention has been paid to the undersea area. The economic value of the seafloor gradually became apparent after the invention of trestle drilling and dredging and mining techniques. 1947 saw the invention of floating drilling rigs by the oil industry and the rapid development of the offshore industry thereafter. At present, the three main categories of deep-sea mineral resources known to be detected on the seafloor are polymetallic nodules, complex nodules and polymetallic sulfides.

The rich mineral resources in the seabed represent not only economic value, but also strategic value. Judging from the development of the Russian-Ukrainian war so far, oil and gas reserves are very important for a country. The oil reserves in the international seabed area are about 135 billion tons, natural gas reserves amount to 1.4 billion cubic meters, and gas hydrate (commonly known as "combustible ice") reserves in the ocean account for 98% of the global reserves, which is a huge wealth. At present, the focus of countries on the ocean is shifting from the stage of understanding exploration to the stage of exploitation and development. The development of the oceans by all countries is extremely demanding on a country's technology, and the strength of the marine economic industry and marine science and technology is also the basis for the composition of contemporary maritime rights. In the final analysis, the right to the sea is a right to effectively control the sea by using various technical means, and to develop and utilize it on this basis.

3. The Current Status of The Development of Mineral Resources in The International Seabed Area

The legislation of 37 countries is currently available through the official website of the International Seabed Authority. The International Seabed Authority has entered into 15-year contracts with 22 contractors for exploration for polymetallic nodules, polymetallic sulphides and cobalt-rich ferromanganese crusts in the international seabed area. For polymetallic nodules, the authorized exploration area allocated to each contractor is 75,000 square kilometers. For polymetallic sulphides, the authorized exploration area allocated to each contractor is 10,000 square kilometers, consisting of 100 blocks. Each block does not exceed 100 square kilometers. For cobalt-rich ferromanganese crusts, the authorized exploration area allocated to each contractor is 3,000 square kilometers, consisting of 150 blocks. Each block is not to exceed 20 km².

The international community had a very long discussion on the rational exploitation of the resources of the Area, culminating in the adoption of the United Nations Convention on the Law of the Sea and the Agreement on the Implementation of Part XI of the United Nations Convention on the Law of the Sea, which established the framework for exploitation in the Area and the principle of the common heritage of mankind as the basic principle of exploitation. framework and the principle of the common heritage of mankind as the basic principle of exploitation. At the third session of the UN General Assembly, one of the main issues of the negotiations was who should develop the resources of the Area, and there were three main views on this: the first was a "single development system", i.e. the Authority should exercise the right to manage the resources of the Area on behalf of all mankind and decide when and how to develop the resources of the Area. This idea is supported by developing countries and the Group of 77, but developed countries are strongly opposed to it. The developed countries have already invested a lot in the first stage based on their technical and financial advantages. Moreover, this idea does not take into account the strategic significance of regional resources and is too idealistic. The second one is international registration and license system. International registration means that the development subject will report the area and time of the developed area to the Sea Administration; international license system means that the Sea Administration is recognized to enjoy the exclusive management right over the regional

resources, and the Sea Administration will issue the license to the qualified development subject. The proponents of this proposition are mainly developed countries. Due to the unsynchronized technological development, the rule is obviously favorable to developed countries and contrary to the principle of common heritage of mankind, which is also opposed by developing countries. The third one is the parallel development system currently in use. That is, for the resources of the international seabed area, they can be exploited either by the Enterprise of the International Seabed Authority on behalf of mankind or by public and private enterprises of the States Parties. This is achieved by the applicant providing two sites of equal value to the Authority after exploration of a mineral area in the area, and the Authority selecting one as a "reserved area" and the other as a "contract area" to be developed under contract with the applicant. This is a transitional state of affairs from the status quo to eventual unitary exploitation, a concession by the major maritime powers and an aid to developing countries in accessing seabed resources.

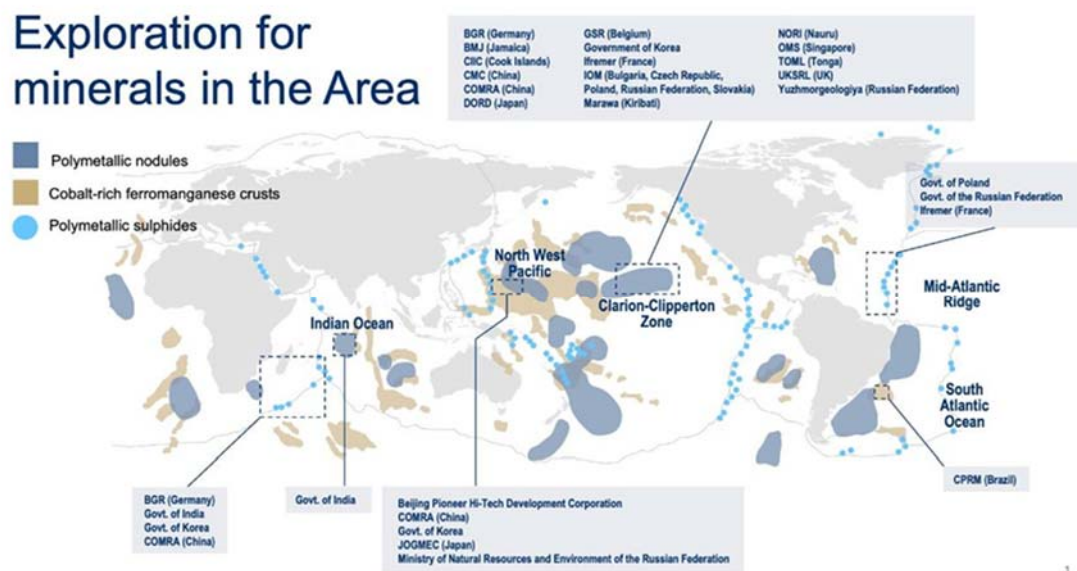


Figure 1. Status of mineral resources exploration in the region (Figure from International Seabed Authority)

There are about 181 coastal countries and regions in the world, and nearly half of them have already claimed 200 nautical miles of outer continental shelf, and it is estimated that about 30 million square kilometers of outer continental shelf will be assigned to the countries concerned in the future, which will have a great impact on regional mineral exploitation applications. In addition, the original intention of the parallel development system was to achieve a balance in the utilization of resources by developed and developing countries based on the principle of common heritage of mankind, but in practice many problems have arisen. The first is the current provision of fewer mineable areas, with only polymetallic nodules, polymetallic sulphides and cobalt-rich ferromanganese crusts. The second is the provision on reserved areas, where the reserved areas for polymetallic sulphides and cobalt-rich ferromanganese crusts can be replaced by offering equity, which will result in fewer reserved areas and will be detrimental to subsequent development. Therefore, the current development system has many shortcomings, especially to the disadvantage of developing countries. For developing countries, new solutions need to be proposed as early as possible to make better use of the remaining exploitable resources.

4. China's Participation in the Development of Mineral Resources in the International Seabed Area

In 2019, Beijing Herald High Technology Development Company signed an exploration contract for polymetallic nodules with the International Seabed Authority in Beijing, which is the third contractor of China's international seabed exploration contract mining areas after China Ocean Mineral Resources Research and Development Association and China Minmetals Group Co. So far, a total of three enterprises in China have signed mining rights with the Seabed Authority for a total of five areas. China's exploration and development of the ocean started late, and there are still many shortcomings in the development technology and development system. We should continue to improve on the basis of the existing achievements and enhance the ocean discourse through the following aspects

4.1. Develop a system of pre-approval, supervision and post-approval for development

China has been continuously working on legislation related to the marine sector, adopting the Marine Environmental Protection Law of the People's Republic of China in 1982, issuing the Rules of the Mineral Resources Law of the People's Republic of China in 1994, amending the Mineral Resources Law of the People's Republic of China in 1996, promulgating the Regulations on the Prevention and Treatment of Pollution and Damage to the Marine Environment by Marine Engineering in 2010, and adopting the Law of the People's Republic of China on the Exploration and Development of Resources in the Deep Seabed Area in 2016, and enacting domestic laws, regulations and administrative measures related to activities in the Area in 2018. In 2016, the Law of the People's Republic of China on Exploration and Development of Resources in the Deep Seabed Area was adopted, and in 2018, domestic laws, regulations and administrative measures related to activities in the Area were formulated. Guided by the community of maritime destiny, China, as a responsible power, has always strictly fulfilled its obligations for rational exploitation and environmental protection. In order to better participate in the development and management of the oceans in the future, China needs not only to participate deeply in the international legislation on the marine environment, but also to actively improve the domestic legislation on the marine environment.

At the level of international legislation, on the one hand, the parallel exploitation system should be improved. In view of the limited exploitation area and the reduction of reserved areas revealed by the parallel development system, we should continue to explore ways to promote the exploration and development of marine resources and share technology in developed countries while ensuring that developing countries enjoy certain exploitable resources under the goal of the benefit-sharing system for seabed resources development, so as to break the current dilemma of unbalanced utilization of resources between developed and developing countries. Developed and developing countries are only classified in a certain way, but all in all, they live together on the same earth and enjoy the gifts of nature together, so they should work together and use them rationally. On the other hand, we should deal with the issue between exploitation and environmental protection. Nature has a limited capacity, and unlimited abuse will only lead to natural repercussions. It is necessary to reach a consensus on environmental protection among countries based on the current technological development, and the standard should be compatible with the current human technological development, not an unattainable goal. And it is also necessary to deal with the relationship between the environment of the seabed area and the environmental protection of other countries, such as BBNJ. China should actively express the Chinese position, provide Chinese solutions and Chinese wisdom in the international legislation process. At the domestic legislation level, on the basis of the existing Law on Exploration and Development of Resources in the Deep Seabed Area, supplement the

legislation on the whole process of prior approval, supervision in the process and recourse afterwards. The system design should improve the environmental damage assessment procedures, regulate the collection and determination of environmental baselines, improve the environmental monitoring management system, and adopt preventive measures and best environmental practices. In terms of ex ante approval, a permit system can be used to review the qualifications, assessment programs and emergency plans of subjects applying for exploration and exploitation of seabed resources. Ex-ante supervision means to track the process of activities carried out by the subject who has obtained the permit, and monitor whether he/she acts according to the provided plan, needs help in case of emergency, etc. Post-facto follow-up means to establish in advance the law that defines who should be responsible for any damage caused by an accident in the process of exploitation. Based on the previous licensing and tracking, this part of the attribution of responsibility should be clear, mainly to clarify the issue of responsibility.

4.2. Domestic applications and foreign investments go hand in hand

Many foreign investors can be found in the development contracts of the international seabed area. The main laws for foreign investment in China to participate in exploration and development of regional resources are the Law of the People's Republic of China on Exploration and Development of Resources in Deep Seabed Areas, the Law of the People's Republic of China on Foreign Investment, and the Special Administrative Measures for Foreign Investment Access (Negative List). According to these laws, foreign contractors can engage in exploration and development activities under the guarantee of China. However, currently there are only three entities in China that can participate in the cooperation, namely Minmetals Group, China Ocean Mineral Resources Research and Development Association and Beijing Pioneer High Technology Development Company, and no private contractors including foreign-invested enterprises are involved yet. China, as the host country and the sponsoring country, should set up a corresponding licensing, supervision and accountability system based on the "fair and equitable treatment" in international law. As mentioned earlier, full participation in the monitoring process ensures the safety of the activity and fulfills the obligations of the sponsoring country. Fair and equitable treatment requires the host country to publish these standards in a timely manner after they are established, providing a basis for predictable risk to the investing country.

China should pay more attention to environmental protection issues when it is an investor country. China has a long way to go to catch up with some developed countries in terms of environmental protection due to the difference in time between technological development and the awakening of environmental protection awareness. However, the International Seabed Authority and the host country may pay much attention to this, and the host country as a guarantor country may take non-discriminatory management for the environment, and has the right to terminate the guarantee and make the investor's preliminary payment all in vain, and it is very difficult to get compensation for such denial, which will bring very serious losses to the investor. In order to ensure the smooth implementation of the investment, Chinese enterprises should actively participate in and strictly comply with the obligations of environmental protection in the development of mineral resources in the international seabed area, and pay more attention to the part of environmental protection in the investment contract to avoid damaging the environment of the seabed area as much as possible.

4.3. Increase efforts to research and develop technologies

Since 1996, the Authority has legislated for each of the three major resource categories, including the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area, the Regulations on Prospecting and Exploration for Polymetallic Sulphides in the Area, and the Regulations on Prospecting and Exploration for Cobalt-rich Ferromanganese Crusts in the Area.

"Regulations on prospecting and exploration for cobalt-rich ferromanganese crusts in the Area. With the common goal of protecting and sustainably using the oceans, the Authority's approvals for sponsoring States will become more stringent. Due to historical and technological constraints, China is a late starter in deep sea mining. However, based on the current technology sharing opportunities and scientific development, China should seize the opportunity to catch up as soon as possible. Change the previous view that the deep sea is out of reach, increase the investment of human and financial resources in ocean exploration and development, and explore and develop the deep sea in a scientific way. Specifically, we can start from the following aspects.

First, in the field of deep-sea exploration and development technology should strengthen the implementation of the concept of environmental protection, and simultaneously improve the level of development technology and scientific awareness. From the beginning of the fires in Australia, human beings should be aware that this is the alarm bell sounded by the nature. For many years, humans have been taking from nature in exchange for their own progress, but unrestricted demands will eventually lead to nature's repercussions. Countries are becoming aware of this and are taking measures to mitigate the greenhouse effect by proposing carbon peaking and carbon neutral targets. In the case of the oceans, we need to establish the concept of environmental protection from the very beginning of development, so as to minimize the possible negative effects of the development process.

Second, we will respond to the United Nations General Assembly's Decade of Ocean Science for Sustainable Development (the Decade) and work together to realize the vision of "Building the Science We Need, Building the Ocean We Want." "The goal of the Decade is to "drive transformative scientific solutions for sustainable development that connect people and the ocean. Under this goal, we will launch a deep-

sea ecosystem and biodiversity exploration program and build a long-term viable deep-sea observation and monitoring system. Third, vigorously develop and train talents for international ocean governance. We will improve our technology in terms of management and technology for our situation, and conduct ocean exploration and development more effectively. Establish and improve the cooperation and sharing mechanism of deep-sea public platform, and encourage more enterprises with sufficient capital and technology to participate in deep sea development.

China's resource reserves of copper, nickel and manganese are low, and cobalt resources are also very scarce, while consumption can reach 40%. Up to now, China has obtained the exploration rights of five seabed mining areas, if these areas can be effectively developed, it will greatly make up for the lack of scarce resources in China and ease the crisis of resource tension. Under the strategic goal of marine community of destiny, China should actively participate in the formulation of international marine rules and continuously improve its own capacity to actively participate in marine construction. Under the goals of promoting sustainable use of the ocean, protecting biodiversity and promoting good governance of the deep sea, we will strive to promote high-quality development of the deep-sea business from all aspects.

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