



# Chinese legislation in the exploration of marine mineral resources and its adoption in the Arctic Ocean

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## ABSTRACT

This paper aims to discuss Chinese legislation in the exploration of marine mineral resources and its adoption in the Arctic Ocean. The journey commences by providing comments on the ‘Law of the People's Republic of China on the Exploration and Development of Resources in the Deep Seabed Area’ and to explore Chinese domestic legislation regulating Chinese enterprises' development activities in the Arctic area. Attention also pays to legislation regulating Chinese and foreign enterprises in the exploitation of mineral resources in China's continental shelf with special concern toward the protection of ecological environment. This paper concludes by suggesting that there is a need to further improve Chinese domestic legislation and draw on advanced legislative experience from various States and international law, in order to provide strong domestic legal protection for exploitation activities.

## 1. Introduction

On January 18, 2018, China issued the White Paper on China's Arctic Policies, which is the first White Paper concerning the Arctic Area from the Chinese Government. It emphasised aims, principles and policy advocacy of China's participation of Arctic affairs, among which the exploration and exploitation of mineral resources in the protection of the environment, being most important aspects. In the Arctic Ocean, apart from the exclusive economic zone and continental shelf governed by coastal States, there are also seas and submarine areas belonging to the high seas and the Area. Pursuant to the 1982 United Nations Convention on the Law of the Sea (hereinafter UNCLOS),<sup>1</sup> the coastal State exercises, over the continental shelf, sovereign rights for the purposes of exploring it and exploiting its natural resources, however, other States may participate in the exploration and exploitation, through cooperation with the coastal State. In order to fully participate in the Arctic affairs, specifically mineral exploitation activities of the Arctic Ocean, there is a need for China to improve the relevant domestic legislation, in regulating national enterprises' activities in the Arctic area more efficiently.

Some lessons can be drawn from State practice. Firstly, Chinese enterprises must abide by relevant international environmental laws and regulations of the coastal State, when participating in mineral resource development activities. China's domestic laws must achieve the objective of promoting the fulfilment by Chinese enterprises of their

environmental protection obligations, during overseas investment activities and during cooperation and project construction. Secondly, China's continental shelf is also rich in marine mineral resources and will also attract Chinese and foreign enterprises competing for investment and development. There is, therefore, a need for Chinese domestic legislation to deal with the obligations of marine environmental protection, during the process of mineral exploration.

## 2. Law of the People's Republic of China on the exploration and development of resources in the deep seabed area

Legislative activities concerning mineral resource exploitation in the Area began in April 2013 in China, when the Environment and Resources Committee, State Council proposed to the National People's Congress (hereinafter NPC) Standing Committee, a legislative proposal to regulate activities in the Area [Zhang and Zheng \(2016\)](#). On 26 February 2016, the 19th Meeting of the 12th NPC Standing Committee examined and adopted the, ‘Law of the People's Republic of China on the Exploration and Development of Resources in the Deep Seabed Area’, (hereinafter ‘Deep Seabed Law’), which came into effect on May 1 of the same year. This law is necessary for China to fulfil its obligations as a contracting party to UNCLOS and as a sponsoring State of mineral resources development activities in the region.

The Deep Seabed Law contains seven Chapters and 29 Articles in total and its purpose is, “protecting the marine environment, promoting

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<sup>1</sup> United Nations Convention on the Law of the Sea, opened for signature 10 December 1982, 1833 U.N.T.S. 397 (entered into force 16 November 1994).

the sustainable utilisation of resources in deep seabed areas, and protecting the common interests of mankind.”<sup>2</sup> In its third chapter, the protection of marine environment is specifically prescribed. The applicant shall, before applying to the International Seabed Authority for the exploration and development of resources in deep seabed areas, file an application with the Oceanic Administration of the State Council and submit an exploration and development plan, including the materials to be used, concerning the possible impact of exploration and development activities on the marine environment and an emergency response plan for any potential serious damage to the marine environment.<sup>3</sup> A contractor has an obligation to protect the marine environment,<sup>4</sup> including protecting and preserving rare or fragile ecological systems, as well as the diversity of marine organisms.<sup>5</sup> Contractors should also utilise available advanced technologies and take necessary measures to prevent, reduce and control pollution and other damage caused to the marine environment by activities, in the exploration and development region.<sup>6</sup> Specifically, the Deep Seabed Law regulating the contractor, specifies that, it is necessary to determine the base line of the environment, carry out an environment impact assessment and monitor, record and report the impact of exploration and development activities.<sup>7</sup> Contractors' vessels, facilities and equipment used for the exploration and development activities, as well as logbooks, records and data, may be inspected by the Oceanic Administration of the State Council.<sup>8</sup> Where an accident causing serious damage to the marine environment occurs or may occur, the contractor shall immediately initiate the emergency response plan, issue an alarm, report to the oceanic administration of the State Council and take all feasible and reasonable measures to reduce the damage to the marine environment.<sup>9</sup> Contractors will be faced with relevant penalties, if they violate the provisions of the law and undermine the quality of the marine environment.<sup>10</sup>

The promulgation of the Deep Seabed Law fills a gap in Chinese domestic legislation, standardises the activities of domestic contractors in the Area and is conducive to China's fulfilment of the obligations of sponsoring State (Zhang and Zheng (2016)). Some aspects in the Deep Seabed Law are noteworthy. Firstly, it covers not only the exploration activities of mineral resources in the Area but also development activities, therefore, there is no need to formulate a separate law concerning development activities (COMRA, 2016). Secondly, the law also stipulates that it is the responsibility of the contractor to protect the rare species and the marine biodiversity in the Area (COMRA, 2016).

There are, however, still many deficiencies in the Deep Seabed Law. First of all, the provisions of the law are too simple and can easily lead to implementation difficulties in practice. Relevant management measures are required to be followed up, to assist the implementation of the law (Zhang and Zheng, 2016; Chen, 2017). Currently, the State Oceanic Administration has formulated the Measures for the Administration of

Licensing for the Exploration and Development of Resources in the Deep Seabed Area, to assist the implementation of the Deep Seabed Law (COMRA, 2017a,b). In the future, there is a need to continue to promulgate management measures for environmental investigation and evaluation, in line with the implementation of the Deep Seabed Law.

Secondly, there is a lack of provision in the Deep Seabed Law for motivational measures (Zhang and Zheng, 2016). At present, only Article 28 of the Deep Seabed Law deals with incentive measures, this stipulating that, tax-related issues will be dealt with in accordance with the laws and regulations of China. Such provision is too vague in general (Zhang and Zheng, 2016). The Deep Seabed Law should provide more detailed provision concerning the relevant incentive measures and encourage the contractors to follow the relevant rules, especially the provisions regarding the protection of the marine ecological environment. It is necessary to initiate relevant management measures and adopt policies such as tax relief, government subsidies, government procurement and credit support, to encourage contractors to comply with the relevant laws and regulations (Zhang and Zheng, 2016).

Thirdly, the Deep Seabed Law currently covers only the environmental protection obligations of contractors before and during the exploration and development activities and does not stipulate the environmental protection obligations after the related activities have been completed and indicate the related environmental remediation measures (Zhang and Zheng, 2016). All of the aforementioned are aspects that follow-up legislation should address.

### 3. China's domestic legislation regulating Chinese enterprises' development activities in the Arctic area

As an important stakeholder in the Arctic affairs, China is increasingly involved in Arctic activities and in the construction of the Arctic governance mechanism. Included in the subject matter of the aforementioned is making rational use of the resources of the Arctic and protecting the Arctic's ecological environment, which are major policy proposals for China's participation in the Arctic (The State Council Information Office of the People's Republic of China, 2018). At present, China has started cooperation projects in resource development with Arctic States, such as Russia and Iceland. For example, enterprises such as CNPC and CNPC Marine Engineering Co., Ltd. participated in the Yamal liquefied natural gas project in Russia. Chinese enterprises also participated in the project of deep-water port reconstruction in Archangelsk, the largest city in the Arctic (Guan et al., 2018). In April 2012, China and Iceland signed the 'Framework Agreement between the Government of the People's Republic of China and the Government of the Republic of Iceland on the Arctic Cooperation' and Iceland also allows China National Offshore Oil Corporation Limited (hereinafter CNOOC) to carry out oil exploration operations in Icelandic waters (The State Council Information Office of the People's Republic of China, 2018; Guan et al., 2018). In the White Paper entitled, 'China's Arctic Policy', Chinese government emphasises that it will, 'insist on standardising, managing and supervising the Arctic activities of Chinese citizens, legal persons and other organisations and strive to ensure that the relevant activities are in conformity with international law and respect the relevant laws and regulations on environmental protection, conservation and sustainable use of resources, and effectively strengthen the coordination of China's Arctic foreign policy and affairs' (The State Council Information Office of the People's Republic of China, 2018). It is very important to ensure that the activities of Chinese enterprises conform to the provisions of international law and the domestic laws of coastal States, which is of great significance in protecting the ecological environment, ensuring the safety of investment and establishing China's image as a responsible State (Sun, 2017). China has formulated a series of laws, regulations and departmental normative documents to regulate Chinese enterprises in fulfilling their environmental protection obligations during their overseas investment, cooperation and project construction. The following part will introduce

<sup>2</sup> Law of the People's Republic of China on the Exploration and Development of Resources in the Deep Seabed Area, Article 1.

<sup>3</sup> Law of the People's Republic of China on the Exploration and Development of Resources in the Deep Seabed Area, Article 7(4).

<sup>4</sup> Law of the People's Republic of China on the Exploration and Development of Resources in the Deep Seabed Area, Article 9.

<sup>5</sup> Law of the People's Republic of China on the Exploration and Development of Resources in the Deep Seabed Area, Article 14.

<sup>6</sup> Law of the People's Republic of China on the Exploration and Development of Resources in the Deep Seabed Area, Article 12.

<sup>7</sup> Law of the People's Republic of China on the Exploration and Development of Resources in the Deep Seabed Area, Articles 13, 20.

<sup>8</sup> Law of the People's Republic of China on Exploration and Development of Resources in the Deep Seabed Area, Article 21.

<sup>9</sup> Law of the People's Republic of China on Exploration and Development of Resources in the Deep Seabed Area, Article 11.

<sup>10</sup> Law of the People's Republic of China on Exploration and Development of Resources in the Deep Seabed Area, Article 26.

and analyse these laws, regulations and departmental normative documents, regarding the environmental protection obligations of Chinese enterprises in overseas investment and construction activities.

On March 1, 2017, the revised Regulations regarding the Management of Foreign Contracted Projects came into operation, to regulate construction projects located outside of China, by Chinese enterprises.<sup>11</sup> The Regulations stipulate that, Chinese enterprises must abide by local laws and contractual stipulations, ensure safety in production, protect the ecological environment and promote local economic and social development, when undertaking overseas construction projects.<sup>12</sup>

The Measures for the Bidding Tendering (Bid Negotiation) for the Contracting of Foreign Projects was promulgated by the Ministry of Commerce, the China Banking Regulatory Commission and the China Insurance Regulatory Commission, in December 2011, which came into effect on January 15, 2012 and was revised in 2017. The measures stipulate that, the economic and trade institutions of the Chinese embassy (consulate) in the State where a project is located, shall provide a specific opinion on the application and the factors considered by the commercial organisation shall include the environmental protection matters of the project.<sup>13</sup> In October 2014, the Measures for the Administration of Overseas Investment came into effect. According to the measures, overseas enterprises must abide by the laws and regulations of the local States.<sup>14</sup> The Ministry of Commerce shall, together with other departments, issue environmental protection guidelines to instruct enterprises in environmental protection issues.<sup>15</sup>

The Measures for the Administration of Overseas Investment of Enterprises, issued by the National Development and Reform Commission, came into effect on March 1, 2018. The measures make regulations concerning guidance, approval, filing and supervision of the investment activities of Chinese enterprises in overseas exploration and the development of natural resources.<sup>16</sup> The investment activities of Chinese enterprises must comply with Chinese laws and regulations, relevant policies, the provisions of international treaties concluded or acceded by China and uphold China's national interests and security.<sup>17</sup> In the protection of the ecological environment, the measures merely 'encourage' investors to 'pay attention to environmental protection',<sup>18</sup> with no clear stipulation as to the obligations of the enterprise to comply with the laws and regulations on the protection of the ecological environment, of the local State.

On June 6, 2008, the Ministry of Commerce, the Ministry of Foreign Affairs and the State-owned Assets Supervision and Administration Commission of the State Council, jointly issued the, 'Notice on Further Regulating the Foreign Investment Cooperation of the Chinese Enterprises', stressing the issue of environmental protection, as triggered by foreign investment. The Notice calls on relevant units and enterprises to study and comply with the laws and regulations on China's overseas investment and cooperation and local States' environmental protection legislation, so as to regulate the environmental protection work of enterprises in the process of overseas investment. In particular, central enterprises shall endeavour to set an example to the foreign investment cooperation of Chinese enterprises, as regards

environmental protection. In addition, in accordance with the Notice on Issues concerning the Joint Annual Inspection of Overseas Investment, China enforces an annual inspection system on overseas investments of enterprises and an evaluation of enterprises, including compliance with local laws and regulations and whether there are any environmental problems or disputes, arising from their operations.

On February 18, 2013, the Ministry of Commerce and the Ministry of Environmental Protection released the Guidelines on Environmental Protection for Cooperation with Foreign Investors, in order to regulate the environmental protection work of Chinese enterprises engaged in overseas investment and cooperation and to promote balanced and sustainable development of the economy, society and the environment of the local State.<sup>19</sup> Firstly, enterprises should study and comply with the environmental protection legislation of the local State. In particular, they should apply for environmental permits in accordance with provisions of these laws and local environmental standards, carry out environmental impact assessments and take measures to mitigate any potential negative effects. Enterprises are also obligated to build and operate pollution prevention facilities to discharge wastes, develop hazardous waste management plans, formulate contingency plans for environmental accidents and timeously report to and communicate with relevant government agencies, institutions and the general public, strengthen the protection of biodiversity and carry out ecological restoration.<sup>20</sup> Secondly, enterprises should include plans for environmental protection in their production and business plans, establish environmental rules and regulations within their enterprises, strengthen environmental management in production, carry out cleaner production processes and conduct environmental protection training for employees.<sup>21</sup>

The guidelines also point out that, in order to mitigate the risk of environmental liabilities, enterprises are recommended to conduct due diligence on the environmental pollution and environmental debts that the target enterprise has already caused, before the acquisition.<sup>22</sup> Further, the guidelines encourage enterprises to assess and monitor the environmental baseline of construction sites, before the project starts and monitor any waste discharged by them.<sup>23</sup> Enterprises can also purchase environmental pollution liability insurance, apply for environmental management system certification and product environmental labelling certification, periodically release corporate environmental information, communicate with local environmental protection agencies and social groups and fulfil environmental protection obligations, by adopting environmental standards developed by international organisations and customary rules.<sup>24</sup>

In August 2013, the Trial Measures for Bad Credit Record in Foreign Investment Cooperation and Foreign Trade came into effect. According to the measures, if enterprises cause harm to the local ecological environment in foreign investment, bad credit records will be attached to them. On April 13, 2015, the Ministry of Commerce promulgated the Notice on Promoting Environmental Protection Work for Foreign Investment and Cooperation Enterprises, which set out respective environmental protection obligations that should be fulfilled in the process of enterprises' overseas investment and cooperation for the Ministry of Commerce, local commercial authorities, all business

<sup>11</sup> Regulations on the Management of Foreign Contracted Projects, Article 2.

<sup>12</sup> Regulations on the Management of Foreign Contracted Projects, Articles 4, 10.

<sup>13</sup> Measures for the Bidding Tendering (Bid Negotiation) for the Contracting of Foreign Projects, Article 7.

<sup>14</sup> Measures for the Administration of Overseas Investment, Article 20.

<sup>15</sup> Measures for the Administration of Overseas Investment, Article 27.

<sup>16</sup> Measures for the Administration of Overseas Investment of Enterprises, Article 2.

<sup>17</sup> Measures for the Administration of Overseas Investment of Enterprises, Article 26.

<sup>18</sup> Measures for the Administration of Overseas Investment of Enterprises, Article 41.

<sup>19</sup> Guidelines on Environmental Protection for Cooperation with Foreign Investors, Articles 1, 3, 4.

<sup>20</sup> Guidelines on Environmental Protection for Cooperation with Foreign Investors, Articles 5, 8, 10, 13, 14, 15.

<sup>21</sup> Guidelines on Environmental Protection for Cooperation with Foreign Investors, Articles 6, 7, 16.

<sup>22</sup> Guidelines on Environmental Protection for Cooperation with Foreign Investors, Article 12.

<sup>23</sup> Guidelines on Environmental Protection for Cooperation with Foreign Investors, Article 11.

<sup>24</sup> Guidelines on Environmental Protection for Cooperation with Foreign Investors, Articles 14, 17, 18, 19, 20, 22.

agencies abroad, enterprises and domestic and overseas Chambers of Commerce. The Ministry of Commerce is responsible for providing macro guidance to the environmental protection work of enterprises, gathering environmental protection information and relevant cases and experiences, and punishing enterprises that violate regulations. All local commercial authorities are responsible for supervising and organising enterprises and must learn and observe China's laws and regulations on foreign investment and local environmental protection. Each foreign business agency is responsible for serving and supervising Chinese enterprises and assisting enterprises in communication with local governments, associations and other organisations. The obligations of enterprises are mainly to fulfil the environmental protection obligations stipulated in the Guide for the Environmental Protection of Foreign Investment and Cooperation. Domestic Chambers of Commerce may formulate guidance documents that clarify the environmental protection obligations that their businesses should perform, when investing abroad. Such Chambers on the other hand, may formulate guidance documents that fulfil the obligation of environmental protection, as stated in local laws.

In sum, legal rules in China concerning environmental protection obligations in the overseas investment and construction of national enterprises, can be separated into three levels, namely, administrative regulations, departmental rules and departmental regulative documents. There are only simple stipulations on environmental protection in administrative regulations and departmental rules, which merely provide that enterprises shall observe local laws and contracts, ensure safety in production and protect the environment but there are no detailed rules. Such terms have their limitations in guaranteeing that enterprises will perform their environmental protection obligations comprehensively and efficiently. As to departmental regulatory documents, the Guidelines on Environmental Protection for Cooperation with Foreign Investors and the Notice on Promoting Environmental Protection Work for Foreign Investment and Cooperation Enterprises, have thorough regulations concerning the environmental protection obligations in overseas investment and construction. These documents, however, have low binding force and are unable to apply punishment to enterprises damaging the ecological environment (Han, 2013; Sun, 2017). China should consider establishing specialised laws and regulations, to manage environmental protection problems concerning overseas investment (Sun, 2017). Furthermore, the government and trade associations should, in accordance with collection and guidance of laws and regulations on ecological environmental protection obligations issued by State and industry, provide guidance to enterprises as regards their overseas investment (Sun, 2017; Liu, 2017).

#### 4. Chinese domestic legislation regulating the protection of ecological environment by Chinese and foreign enterprises in the exploitation of mineral resources on China's continental shelf

Marine mineral resources are rich in the Bohai Sea, East China Sea and South China Sea and as with the Arctic Ocean, they offer wide-ranging prospects for the development of marine mineral resources and have attracted many Chinese and foreign companies. In 2017, CNOOC launched 22 open blocks in the South China Sea inviting bidding from foreign companies (COMRA, 2017a,b). Analysis of the legal system of eco-environmental protection as regards the exploitation of mineral resources on the continental shelf of the Arctic Ocean and the broad prospects of Sino-foreign cooperation and foreign investment in the development of mineral resources in the continental shelf of China have revealed that, the State must establish and improve a system to regulate developers, to protect the marine ecological environment. The following part will introduce and analyse eco-environmental protection obligations in Chinese laws that foreign investors must fulfil and the provisions in Chinese laws protecting the marine ecological environment from being damaged by the exploitation of mineral resources on the continental shelf. Finally, legislative proposals will be put forward.

#### 4.1. Foreign investment and cooperation in China should fulfil ecological environmental protection obligations

The Constitution of the People's Republic of China and related foreign investment laws, stipulate the obligation of foreigners to protect the ecological environment. Among the aforementioned, the Constitution, the Law of the People's Republic of China on Sino-Foreign Contractual Joint Ventures and the Law of the People's Republic of China on Foreign-Invested Enterprises stipulate that, Sino-foreign cooperative enterprises and foreign-funded enterprises must abide by Chinese laws and regulations.<sup>25</sup> The result is that, if foreign companies on the Chinese mainland engage in mineral resource development activities, they must observe Chinese laws and regulations concerning marine ecological environment protection. In addition to these laws, the Notice on Strengthening the Environmental Protection Management of Foreign-invested Construction Projects also stipulates the obligation of foreigners to protect the ecological environment. Specifically, foreign companies must comply with all laws and regulations concerning environmental protection in China, including conducting environmental impact assessments. While undertaking project construction, foreign companies must build pollution prevention facilities and accept direction. The waste discharged from construction projects must meet national and local standards.<sup>26</sup>

China's regulations concerning the protection of the ecological environment of foreign businesses, are scattered among various laws and regulations. Only relatively simple provisions can be found in the Constitution, the Law of the People's Republic of China on Sino-Foreign Contractual Joint Ventures and the Law of the People's Republic of China on Foreign Investment Enterprises, for example, 'foreigners should comply with Chinese laws and regulations'. Although the Notice on Strengthening the Management of Environmental Protection for Foreign-invested Construction Projects clearly defines the obligation of foreigners to protect the ecological environment, this notice relates to departmental normative documents and thus, is not legally binding and cannot effectively regulate the behaviour of foreign investors. The current Chinese domestic legal system, thus, lacks a law or regulation that specifies the obligation to protect the ecological environment, in the course of foreign investment. The legislature should issue specific laws or regulations in this regard (Qin, 1999a,b) and adopt them as a guide to build a legal system regarding environmental protection obligations, as concerns foreign investment (Qin, 1999a,b).

#### 4.2. Specific laws protecting the marine ecological environment from being damaged by exploitation of mineral resources on the continental shelf

In respect of the legislation on ecological environmental protection in the development of mineral resources in the continental shelf, it should be firstly mentioned that, the Law of the People's Republic of China on the Exclusive Economic Zone and the Continental Shelf stipulates that, relevant agencies have the right to take measures to protect the marine environment within the exclusive economic zone and the continental shelf.<sup>27</sup> Other relevant rules can be roughly divided into those concerning the prevention and control of marine eco-environmental pollution and that concerning the utilisation of marine resources (Guan, 2011). Both of these laws are based on the principle of territoriality, thus, Chinese and foreign companies engaging in mineral resources development activities on the continental shelf must abide by these legal provisions. The following sections will introduce and

<sup>25</sup> Notice on Enforcing Management on Foreign Investment Construction Projects on Environmental Protection.

<sup>26</sup> Notice on Enforcing Management on Foreign Investment Construction Projects on Environmental Protection.

<sup>27</sup> Law on the Exclusive Economic Zone and the Continental Shelf of the People's Republic of China, Article 10.

analyse these two types of law, regulations and rules.

#### 1. Laws, regulations and rules, concerning prevention of marine ecological pollution

The Law of the People's Republic of China on the Marine Environmental Protection is considered the most influential relating to the subject matter. Apart from this, China has promulgated various regulations and rules such as; the Administrative Regulations of the People's Republic of China on the Prevention and Treatment of the Pollution and Damage to the Marine Environment by Ship, the Administrative Regulation on the Prevention and Treatment of the Pollution and Damage to the Marine Environment by Marine Engineering, the Measures for the Implementation of the Regulation of the People's Republic of China on the Administration of Environmental Protection for Offshore Oil Exploration and Exploitation, the Regulations of the People's Republic of China on the Dumping of Wastes at Sea, the Administrative Provisions of the People's Republic of China on the Prevention and the Control of Marine Environmental Pollution by Vessels and their Operations, the Measures for the Implementation of the Regulation of the People's Republic of China on the Administration of Environmental Protection for Offshore Oil Exploration and Exploitation, etc. Furthermore, there are; the Law of the People's Republic of China on Environmental Impact Assessment, the Measures for the Administration of Environmental Impact Assessment of Construction Projects (for Trial Implementation), the Measures for Public Participation in Environmental Protection, the Law of the People's Republic of China on the Administration of Sea Areas and Administrative Measures for the Management of Coastal Sea Environment Functional Area, which are also applicable to marine ecological environment pollution prevention.

The Marine Environmental Protection Law includes sections on marine ecological environmental protection, the prevention of pollution damage to the marine environment by marine engineering construction projects, prevention and control of pollution damage caused by dumping of waste, to the marine environment, and prevention and control of ships and related operational activities on the marine environment, all of which apply to the exploration and development of marine mineral resources in China's exclusive economic zone and continental shelf. They cover the environment protection obligations in construction, operation, dumping, transportation and other aspects of the marine mineral resources development process.<sup>28</sup> This Law establishes a marine functional zoning system stipulates; cross-regional and inter-agency marine environmental protection cooperation, determines marine environmental quality standards and further requires the use of clean production technologies, the elimination of outdated technologies and facilities and the conduct marine environmental monitoring and observation and formulates pollution accident emergency plans, including oil spillage in oil development activities, by ships and other sources.<sup>29</sup>

Specifically, in the protection of marine ecological environment, this Law stipulates the ecological protection red line system, which applies to key marine ecological function areas, ecologically sensitive areas and vulnerable areas. The ecological protection red line refers to the bottom line of ecological security protection.<sup>30</sup> The specific methods include the establishment of marine nature reserves and marine special protection areas, the implementation of marine ecological protection compensation systems and the implementation of

activities in accordance with the planning of marine zones and the restoration of damaged marine ecosystems.<sup>31</sup> In respect of marine engineering projects, the construction unit must submit an environmental impact report, and the marine administrative department must seek advice from other departments, before approving a report. The construction unit must establish marine environmental protection facilities and sewage and oily mixtures and emissions and industrial waste disposal from offshore oil development activities must be carried out in accordance with the law, etc.<sup>32</sup> In terms of dumping waste, the State Oceanic Administration should establish a special marine dumping area, after soliciting opinions from other departments.<sup>33</sup> The discharge of pollutants, waste, ballast water and rubbish from ships must comply with the provisions of this Law, and anti-pollution facilities should be provided.<sup>34</sup> Ships must comply with relevant laws and regulations, to ensure navigation safety and prevent pollution of the marine environment caused by navigational accidents.<sup>35</sup>

In addition, the Law of the People's Republic of China on Environmental Impact Assessment applies to projects within the sea area under the jurisdiction of China.<sup>36</sup> It stipulates the scope of planning and construction projects which require environmental impact assessment and the contents of any environmental impact assessment. This Law further provides that, the environmental impact assessment process should be incorporated into the opinions of relevant units, experts and the public and a follow-up evaluation should be carried out, after the implementation of the planning or construction project.<sup>37</sup>

Protecting and improving the marine ecological environment is one of the principles that must be considered when China designs and implements functional zoning of sea areas in territorial waters.<sup>38</sup> In accordance with the Law of the People's Republic of China on the Administration of Sea Areas, the holders of the right to use sea areas must remove facilities that will cause damage to the marine environment, after the right to use is terminated.<sup>39</sup> This is the only provision in this Law for holders of the right to use sea areas, to protect the marine environment.

The main purpose of the Administrative Regulations of the People's Republic of China on Prevention and Treatment of the Pollution and Damage to the Marine Environment by Ship is to prevent ship pollution of the sea<sup>40</sup> and the following four aspects are comprehensively regulated: Firstly, the regulation concerns the ship's structure, equipment, instruments, certificates, pollution management system, emergency plans, etc., followed by the emission and collection of ship garbage, various pollutants such as sewage, ballast water, and exhaust. Secondly, there is pollution prevention and control measures that must be taken when vessels conduct operations are listed; added to this are emergency treatments when oil, oily mixtures and other toxic and hazardous

<sup>31</sup> Marine Environment Protection Law of the People's Republic of China, Articles 21, 23, 24, 20.

<sup>32</sup> Marine Environment Protection Law of the People's Republic of China, Articles 47, 48, 51, 52.

<sup>33</sup> Marine Environment Protection Law of the People's Republic of China, Article 57.

<sup>34</sup> Marine Environment Protection Law of the People's Republic of China, Articles 62, 64.

<sup>35</sup> Marine Environment Protection Law of the People's Republic of China, Article 65.

<sup>36</sup> Law of the People's Republic of China on Environmental Impact Assessment, Article 3.

<sup>37</sup> Law of the People's Republic of China on Environmental Impact Assessment, Articles 7, 8.

<sup>38</sup> Law of the People's Republic of China on the Administration of Sea Areas, Articles 2, 11.

<sup>39</sup> Law of the People's Republic of China on the Administration of Sea Areas, Article 29.

<sup>40</sup> Administrative Regulations of the People's Republic of China on Prevention and Treatment of the Pollution and Damage to the Marine Environment by Ship, Article 1.

<sup>28</sup> Marine Environment Protection Law of the People's Republic of China, Article 2.

<sup>29</sup> Marine Environment Protection Law of the People's Republic of China, Articles 7, 8, 9, 10, 13, 14, 18.

<sup>30</sup> Marine Environment Protection Law of the People's Republic of China, Article 3.

substances are leaked from ships. Finally, there is provision for the investigation and compensation of pollution accidents.

In accordance with the Administrative Regulation on the Prevention and Treatment of the Pollution and Damage to the Marine Environment by Marine Engineering, the exploration and development of mineral resources on the continental shelf of China must involve an environmental impact assessment (EIA) relating to the potential impact of development activities on the marine environment and resources, build supporting environmental protection facilities and prepare emergency plans.<sup>41</sup> In the development of seabed metal mineral resources, the plumes caused by mining must be prevented from spreading to other sea areas and causing damage to the marine environment.<sup>42</sup> When developing oil and natural gas prospects, the relevant facilities must be equipped to separate oil and water, treat oily wastewater, recover residual oil and waste oil and crush rubbish.<sup>43</sup> Various pollutants generated during the development of oil and gas resources must also be treated in accordance with the regulations. In addition, every effort must be made that oil spills caused by oil drilling platforms, drilling vessels and oil pipelines be prevented.<sup>44</sup> In order to ensure damage compensation for pollution accidents, developers of offshore oil and gas resources should also purchase insurance against pollution damage.<sup>45</sup>

The Regulation focuses more on the impact of offshore engineering projects on other resources and marine uses. Article 10 of the Regulation stipulates that, prior to the approval of an environmental impact report, the State Oceanic Administration must solicit the opinions of the marine, fishery and military environmental protection agencies. Article 28 specifies the protection of marine living resources; if blasting activities or other operations may adversely affect fishery resources, they must be carried out during the non-oviposition period of economic fish and shrimps. These regulations reflect the requirements of the principles of the ecosystem approach.

The Regulations of the People's Republic of China Concerning Environmental Protection in Offshore Oil Exploration and Exploitation, is mainly aimed at preventing damage of the marine environment caused by offshore oil development activities. According to this Regulation, entities or individuals engaging in offshore oil exploration and development must submit environmental impact reports, formulate contingency plans, hold equipment to protect the marine environment, purchase insurance against pollution damage and accept inspections by the State Oceanic Administration and its dispatched personnel.<sup>46</sup> The Regulation also stipulates the treatment of various pollutants, the requirements of offshore drilling platforms and other equipment, the requirements for the use of chemical dispersants, and further provides that a drilling platform pollution record shall be established.

This Regulation also stipulates the protection of marine living resources during the exploration and development of offshore oil. The environmental impact assessment must contain measurement of the impact of the activities on the natural environment and fishery

resources. In addition, it is prohibited to dispose of scattered industrial waste in fishery waters. In the oviposition, breeding, and fishing seasons of major economic fish and shrimps, blasting operations that damage the fishery resources are not allowed.<sup>47</sup>

The dumping referred to in the Regulations of the People's Republic of China on the Dumping of Wastes at Sea includes, the disposal of waste derived from the development of marine mineral resources but does not include waste generated from the development of offshore oil resources.<sup>48</sup> The regulation classifies waste into three categories: waste that is prohibited from dumping, waste that can be dumped with a special permit and waste that can be dumped with a common permit.<sup>49</sup> Dumping must be supervised by the State Oceanic Administration and its agencies.<sup>50</sup> This Regulation also stipulates that, the dumping area of the sea must be regularly monitored, to prevent its adverse impact on fishery resources.<sup>51</sup>

In 2015, the Ministry of Environmental Protection passed the Measures for the Administration of Environmental Impact Assessment of Construction Projects (for Trial Implementation) and began implementation on January 1, 2016. In accordance with the provisions of this Administrative Measures, three to five years after the construction project has been put into operation, the actual environmental impact and effectiveness of various measures to prevent and control pollution and protect the ecological environment shall be re-evaluated and relevant methods shall be improved.<sup>52</sup> Post-environmental impact assessment can be performed on individual projects or multiple projects that have cumulative impact within the same administrative region.<sup>53</sup>

The Measures for Public Participation in Environmental Protection stipulates ways for citizens, legal persons and other organisations, to participate in environmental protection work. The administrative departments of environmental protection agencies may solicit the opinions and suggestions of the public on relevant environmental protection matters or activities through opinion solicitation, questionnaire survey, the holding of symposia, expert demonstration meetings, or hearings or by any other means. The public may put forward opinions and suggestions to the administrative departments of environmental protection by telephone, letters, faxes, the Internet or any other means.<sup>54</sup>

The Administrative Provisions of the People's Republic of China on the Prevention and Control of Marine Environmental Pollution by Vessels and their Operations are formulated in accordance with the Marine Environment Protection Law of the People's Republic of China, the Administrative Regulations of the People's Republic of China on Prevention and Treatment of the Pollution and Damage to the Marine Environment by Ship and the international treaties signed and ratified by China. Its main purpose is to prevent pollution of the marine environment caused by ships and their operations.<sup>55</sup>

The Measures for the Implementation of the Regulation of the

<sup>41</sup> Administrative Regulation on the Prevention and Treatment of the Pollution and Damage to the Marine Environment by Marine Engineering, Articles 8, 16, 37.

<sup>42</sup> Administrative Regulation on the Prevention and Treatment of the Pollution and Damage to the Marine Environment by Marine Engineering, Article 25.

<sup>43</sup> Administrative Regulation on the Prevention and Treatment of the Pollution and Damage to the Marine Environment by Marine Engineering, Article 26, Chapter IV.

<sup>44</sup> Administrative Regulation on the Prevention and Treatment of the Pollution and Damage to the Marine Environment by Marine Engineering, Article 26.

<sup>45</sup> Administrative Regulation on the Prevention and Treatment of the Pollution and Damage to the Marine Environment by Marine Engineering, Article 27.

<sup>46</sup> Regulations of the People's Republic of China Concerning Environmental Protection in Offshore Oil Exploration and Exploitation, Articles 5, 6, 9, 20.

<sup>47</sup> Regulations of the People's Republic of China Concerning Environmental Protection in Offshore Oil Exploration and Exploitation, Article 5, 12, 13.

<sup>48</sup> Regulations of the People's Republic of China on the Dumping of Wastes at Sea, Articles 2, 3.

<sup>49</sup> Regulations of the People's Republic of China on the Dumping of Wastes at Sea, Article 11.

<sup>50</sup> Regulations of the People's Republic of China on the Dumping of Wastes at Sea, Article 13.

<sup>51</sup> Regulations of the People's Republic of China on the Dumping of Wastes at Sea, Article 16.

<sup>52</sup> Measures for the Administration of Environmental Impact Assessment of Construction Projects (for Trial Implementation), Articles 2, 8.

<sup>53</sup> Measures for the Administration of Environmental Impact Assessment of Construction Projects (for Trial Implementation), Article 9.

<sup>54</sup> Measures for Public Participation in Environmental Protection, Article 4.

<sup>55</sup> Administrative Provisions of the People's Republic of China on the Prevention and Control of Marine Environmental Pollution by Vessels and Their Operations, Article 1.

People's Republic of China on the Administration of Environmental Protection for Offshore Oil Exploration and Exploitation contains relevant stipulations on environmental impact reports, oil spill contingency plans, emergency equipment, discharge of oily sewage, waste disposal, etc. In addition, this Measure also rules that, if the method of conducting offshore oil seismic exploration operations may cause damage to fisheries, the operator must take effective measures to reduce damage to the fishery resources.<sup>56</sup>

The term, coastal sea, means the area in the territorial sea.<sup>57</sup> The main purpose of the Administrative Measures for the Management of Coastal Sea Environment Functional Area is to protect and improve the marine ecological environment in the coastal areas, ensure that the seawater in the functional areas of coastal sea areas meets the corresponding water quality standards and clarify the delineation and management of the functional zones in the coastal sea areas.<sup>58</sup> There are, altogether, four types of functional zone in coastal waters: fisheries and natural reserves, aquaculture and bathing areas, general industrial and scenic tourism areas, as well as port and marine resource development areas.<sup>59</sup> Delineation of these functional areas must integrate the proportion of land and sea, local and global interests, short-term and long-term planning, and economic, social and environmental benefits.<sup>60</sup> The regulations relating to environmental protection in the development of marine mineral resources at sea, state that the quality of seawater should at least be class IV, in the marine resource development and dumping areas.<sup>61</sup> This requires operators to comply with relevant regulations, in order to comply with this Measure, when carrying out related activities.

Prevention and control of marine eco-environmental pollution legislation focuses on regulating various pollution sources and preventing them from polluting the marine environment. There are relatively fewer provisions on the impact of various pollution sources on the marine ecosystems and biodiversity. Although there is a specific section in the Marine Environment Protection Law of the People's Republic of China that stipulates the protection of marine ecology, the protection of marine ecosystems and marine biodiversity is not reflected in other sections, whose focus is still on pollution prevention and control (Guan, 2011). This may lead to inconsistency between pollution prevention and the protection of ecological and biological diversity. Despite the fact that, the Administrative Regulations on the Prevention and Treatment of the Pollution and Damage to the Marine Environment by Marine Engineering, the Measures for the Implementation of the Regulation of the People's Republic of China on the Administration of Environmental Protection for Offshore Oil Exploration and Exploitation, the Regulations of the People's Republic of China on the Dumping of Wastes at Sea and the Measures for the Implementation of the Regulation of the People's Republic of China on the Administration of Environmental Protection for Offshore Oil Exploration and Exploitation, all have provisions for the protection of marine living resources, these regulations mainly deal with the prohibition of blasting and other operations during the spawning period, breeding season and fishing period of major economic fish and shrimps, the treatment of sporadic industrial waste in fishery waters and the prevention of adverse impacts

of dumping areas on fisheries, etc. These activities cover a limited range of activities and are also limited to the protection of fishery resources. The result of the aforementioned is that, these administrative regulations and rules also merely focus on the prevention and control of marine pollution, leaving the protection of marine ecology and biological resources as being insufficient (Guan, 2011).

## 2. Laws, regulations and rules on the utilisation of marine resources

The legislation on the utilisation of marine resources mainly include; the Mineral Resources Law of the People's Republic of China, the Rules for the Implementation of the Mineral Resources Law of the People's Republic of China, the Fisheries Law of the People's Republic of China and the Law of the People's Republic of China on Wildlife Protection, in which are provisions for the protection of the marine environment and marine living resources, during the exploitation of marine mineral resources. In addition, the Regulations of the People's Republic of China on Nature Reserves and the Regulations on the Management of Marine Nature Reserves, stipulate the establishment of marine reserve areas as a means of implementing the ecosystem approach. These two items of legislation are designed to protect the marine ecological environment from any adverse effects of marine mineral resource exploitation.

The Mineral Resources Law of the People's Republic of China applies to the exploration and exploitation of mineral resources, within the sea areas under the jurisdiction of China,<sup>62</sup> with a focus on the utilisation of mineral resources and does not impose further stipulation on environmental protection during the exploration and exploitation of mineral resources. Only Articles 21 and 32 provide for environmental protection in the mineral resource development activities. Article 32 stipulates that, provisions for environmental protection must be observed during mineral resource exploitation activities and operators must prevent such activities from damaging the environment. In addition, materials concerning environmental protection must be provided for approval, at the end of mining enterprise.<sup>63</sup> There is no provision for the protection of ecosystems and biodiversity in this Law.

The Wildlife Protection Law of the People's Republic of China stipulates the protection of precious and endangered aquatic wild animals. The legislative purpose of this Law also includes, 'protecting, developing and reasonably utilising wildlife resources and maintaining ecological balance'.<sup>64</sup> This Law emphasises the principle of concurrent protection and reasonable development and utilisation of wild animal resources.<sup>65</sup> Wildlife protection also includes ensuring its living environment, such as establishing nature reserves.<sup>66</sup> In the aspect of the impact of exploitation of marine mineral resources on aquatic wild creatures, the Law only stipulates that, the construction unit of the project must carry out an environmental impact assessment and the environmental protection department should solicit the opinions of the wildlife administrative department of the same level, when examining and approving a report.<sup>67</sup> In addition, this law stipulates the management of wild animals, including domestication, hunting, transportation and carrying.

Article 2 of the Wildlife Protection Law of the People's Republic of China stipulates that, the protection of aquatic wildlife, other than precious and endangered wild aquatic animals, must be conducted in accordance with the Fisheries Law of the People's Republic of China. The legislative purpose of the Fisheries Law of the People's Republic of China is to strengthen the protection, appreciation, development and

<sup>56</sup> Measures for the Implementation of the Regulation of the People's Republic of China on the Administration of Environmental Protection for Offshore Oil Exploration and Exploitation, Article 5.

<sup>57</sup> Administrative Measures for the Management of Coastal Sea Environment Functional Area, Article 2.

<sup>58</sup> Administrative Measures for the Management of Coastal Sea Environment Functional Area, Article 1.

<sup>59</sup> Administrative Measures for the Management of Coastal Sea Environment Functional Area, Article 2.

<sup>60</sup> Administrative Measures for the Management of Coastal Sea Environment Functional Area, Article 4.

<sup>61</sup> Administrative Measures for the Management of Coastal Sea Environment Functional Area, Article 7.

<sup>62</sup> The Mineral Resources Law of the People's Republic of China, Article 2.

<sup>63</sup> The Mineral Resources Law of the People's Republic of China, Article 21.

<sup>64</sup> The Wildlife Protection Law of the People's Republic of China, Article 1.

<sup>65</sup> The Wildlife Protection Law of the People's Republic of China, Article 4.

<sup>66</sup> The Wildlife Protection Law of the People's Republic of China, Article 10.

<sup>67</sup> The Wildlife Protection Law of the People's Republic of China, Article 12.

reasonable utilisation of fishery resources.<sup>68</sup> It could be viewed from its provisions that, this Law focuses more on the utilisation of fishery resources. Article 35 provides that, in the case of marine exploration and construction operations, if the fishery resources are damaged, the construction unit should initially consult with the fishery administrative department of the government at or above the county level, so as to take measures to reduce the impact on the fishery resources. Article 36 stipulates that, the people's governments, at all levels, should take measures to protect and improve the ecological environment of fishery water areas, as well as prevent and address pollution.

The Rules for the Implementation of the Mineral Resources Law of the People's Republic of China stipulates that, the prospector or miner should take measures to protect the ecological environment after the exploration and exploitation operations or pay in full, the cost of environmental protection.<sup>69</sup> The purpose of the Regulations of the People's Republic of China on Nature Reserves is to protect the natural environment and resources and to establish natural reserves, to protect the natural concentrated areas of representative natural ecosystems and rare and endangered wild animals and plants.<sup>70</sup> It stipulates the establishment criteria, application procedures, responsibilities of management agencies and activities prohibited in nature reserves. The Regulations are a better reflection of the ecosystem approach. For example, Article 4 stipulates that, the planning and development of a nature reserve will be integrated into the wider socio-economic planning and development. Article 5 provides that, the establishment of a nature reserve must take into account economic and social development, simultaneously. Article 14 stipulates, 'proper consideration shall be given to the integrity and suitability of the protected objects and to the needs of local economic construction and production activities and the daily life of local residents while determining the ranges and boundaries of nature reserves', which all reflect the requirements of the ecosystem approach.

The Administrative Measures for Marine Nature Reserves are formulated in accordance with the Regulations of the People's Republic of China on Nature Reserves, to strengthen the construction and management of nature reserves within China's jurisdiction over its sea areas and to protect the marine environment and marine resources.<sup>71</sup> In terms of laws and regulations on the utilisation of marine resources, the Mineral Resources Law of the People's Republic of China focuses on the use of mineral resources. The Rules for the Implementation of the Mineral Resources Law of the People's Republic of China stipulates that, prospectors must take measures to protect the ecological environment after the completion of prospecting, which is the only provision in this Rules referring to the ecological environment. In relating to biological resources, the Fisheries Law of the People's Republic of China stipulates that, when carrying out marine mineral resources development activities, the construction unit must consult with the relevant fisheries administrative department, to prevent such activities from damaging the fishery resources. The law does not, however, specify the details of consultation. The Law of the People's Republic of China on the Protection of Wildlife may also be applied to the protection of biological resources during the development of marine mineral resources but its scope is limited to precious and endangered aquatic wildlife. In the course of the development of marine mineral resources, the constructor must conduct an environmental impact assessment and the environmental protection department must solicit opinions from the wildlife administrative department at the same level, on the environmental impact assessment. The construction of marine nature reserves can

effectively protect marine living resources. The Regulations of the People's Republic of China on Nature Reserves and the Regulations on the Management of Marine Nature Reserves, can be applied in this regard.

## 5. Conclusion

As a proactive actor in Arctic affairs, China is keen to participate in the Arctic affairs, seeking to build the, 'Ice Silk Road', with the Arctic States. China's participation in the Arctic affairs is not only for the development and utilisation of the mineral resources in the Arctic but also for the effective protection of the Arctic eco-environment, the promotion of the development of the Arctic economy and strengthening the use of indigenous knowledge ([The State Council Information Office of the People's Republic of China, 2018](#)). China has rich experiences, advanced technology, abundant capital and vast market demand in the exploration of mineral resources on the continental shelf and development of mineral resources in the Area ([Guan et al., 2018](#)) and has accumulated considerable experiences in marine ecological environment protection during the development of mineral resources. All of this enables it to make further contributions to the development of mineral resources in the Arctic Ocean. The Arctic States may benefit from proactively engaging joint development and exploration activities with China. China, on the other hand, will have the opportunity to learn from the experiences of Arctic States and ultimately achieving win-win situation.

Moreover, when participating in the Arctic affairs, China prioritises scientific research, underscores the importance of environmental protection, rational utilisation, law-based governance and international cooperation ([The State Council Information Office of the People's Republic of China, 2018](#)). In terms of scientific investigation and research, China is actively involved in multi-disciplinary research including Arctic geology, geography, ice and snow, hydrology, meteorology, sea ice, biology, ecology, geophysics and marine chemistry. China encourages the development of environmental-friendly polar technical equipment, encourages the upgrading of equipment in all fields and promotes the technological development of mineral resource exploitation in the Arctic ([The State Council Information Office of the People's Republic of China, 2018](#)). In terms of Arctic environmental governance, China actively participates in research regarding the Arctic environmental baseline and environmental impact ([The State Council Information Office of the People's Republic of China, 2018](#)). In the development of Arctic mineral resources, China encourages domestic companies to participate in the development of Arctic mineral resources through cooperative means and on the premise of protecting the Arctic ecological environment. It also strives to ensure that, the activities under its jurisdiction are in line with the Arctic States' domestic laws and international law, in order not to cause damage to fishing and other biological resources and the ecological environment of the Arctic Ocean ([The State Council Information Office of the People's Republic of China, 2018](#)). There are, however, still deficiencies in Chinese domestic legislation on the development of mineral resources on the continental shelf and within the Area. On the assumption that China is to participate in the exploitation of mineral resources in the Arctic Ocean in the future, in addition to vigorously developing related mining technology and equipment and marine ecological environmental protection technologies, it is also necessary to further improve domestic legislation and draw on advanced legislative experience from various States and international law, in order to provide strong domestic legal protection for exploitation activities.

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<sup>68</sup> Fisheries Law of the People's Republic of China, Article 1.

<sup>69</sup> Rules for the Implementation of the Mineral Resources Law of the People's Republic of China, Articles 20, 34.

<sup>70</sup> Regulations of the People's Republic of China on Nature Reserves, Articles 1, 2.

<sup>71</sup> Administrative Measures for Marine Nature Reserves, Articles 1, 2.



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