

Consideration on Legal Situation of Mine Ecological Restoration in China

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Abstract. Mine ecological restoration system is the guarantee of restoration practice and management. In the past half century, China's mining geological environment protection and restoration management system and land reclamation system have been established and continuously improved, but the current relevant legal system still has some defects, such as: no special legislation, implementations of ecological restoration settlement mechanism, two-in-one scheme compilation and reporting system, mining geological environment restoration fund system are not smooth, and the binding force of legal responsibility is insufficient. In view of these problems, the revision of Mineral Resources Law, Regulations on Land Reclamation and Provisions on the Protection of the Geological Environment in Mines has become a practical necessity. In the revision, mine ecological restoration system can be constructed from the aspects of preparation and implementation supervision of mine ecological protection and restoration scheme, management of mine ecological restoration fund, ecological background investigation and monitoring, lifelong responsibility investigation, joint punishment and so on.

Keywords: mine ecological restoration; mine geological environment; land reclamation; laws and regulations; system.

The exploitation of mineral resources will inevitably cause disturbance to the ecological environment. As an important producer and consumer of mineral resources, China has continuously improved its relevant laws, regulations and institutional policies in recent years. The improvement of relevant laws and regulations on mine ecological restoration in China has provided system basis for promoting mine ecological restoration and contributed to global environmental protection. But there are still some defects. By further revising the law, it can gradually create a good legal environment, and provide a more effective guarantee for the ecological protection and restoration of mines.

1. History of Mine Ecological Restoration Legal System

The legislation in the field of mine ecological restoration in China began in the late 1980s. On January 1, 1989, the Provisions on Land Reclamation came into effect. It put forward the principle of 'people who destroys should reclaim', marking that China's land reclamation work began to move towards the legal track. After that, the former Ministry of Land and Resources (MLR) and other seven ministries jointly issued the Notice on Strengthening the Land Reclamation Management of Production and Construction Projects, which included land reclamation in the mining licensing and land use approval procedures. The former Ministry of Finance, the MLR, and the State Administration of Environmental Protection issued the Guiding Opinions on Gradually Establishing the Responsibility Mechanism for Environmental Governance and Ecological Restoration in Mines, requiring that from 2006 new and producing mining enterprises shall formulate schemes for the protection and comprehensive governance of the mine ecological environment, and pay the deposit for the restoration of the mine environmental governance. The following year, the MLR issued the Notice on Organizing the Compilation and Review of Land Reclamation Scheme and the Code for the Preparation of Mine Environmental Protection and Comprehensive Management Scheme, respectively, to further standardize the compilation and report of the two schemes. In 2009, the Regulations on the Protection of the Geological Environment in Mines was issued. It made comprehensive provisions on the prevention, treatment

and restoration of ground collapse, ground cracks, collapses, landslides, aquifer damage, and topographic and geomorphic landscape damage caused by mineral resources exploration and mining activities. By then, China had formed a legal guarantee system composed of land reclamation and mine geological environment management.

In 2011, the State Council promulgated and implemented the Regulations on Land Reclamation, which, on the basis of a comprehensive summary of the effectiveness and experience of the implementation of the Provisions on Land Reclamation, improved the design of the land reclamation system and established a complete and unified land reclamation restraint mechanism, incentive mechanism and supervision mechanism with the purpose of implementing the basic national policy of cultivated land protection. In December 2012, the MLR issued the Measures for the Implementation of Land Reclamation Regulations to ensure the effective implementation of land reclamation. For the reclamation of abandoned mines left over by history, the MLR issued the Notice on the Pilot Work of the Reclamation and Utilization of Abandoned Industrial and Mining Land and the Management Measures for the Pilot reclamation and Utilization of Abandoned Industrial and Mining Land left over by History in 2012 and 2015 respectively, linking the reclamation of abandoned historical land to the construction land index. This policy has effectively promoted the reclamation of abandoned mines left over from history. In terms of mining geological environment governance, in 2016, five ministries including the MLR issued the Guiding Opinions on Strengthening the Protection and Comprehensive Management of Mining geological Environment, making it clear that it is necessary to build a mechanism for the participation of the government, enterprises and society, and form a new situation of restoration and comprehensive management as soon as possible in which 'new and old problems' are solved. In 2017, the former General Office of the MLR issued the Notice on the Compilation and Reporting of Mining Geological Environment Protection and Land Reclamation Schemes. Since then, the system of combining the compilation and reporting of mine geological environment protection and restoration scheme and land reclamation scheme for mining enterprises has been implemented. In the same year, the Ministry of Finance, the MLR, and the former Ministry of Environmental Protection jointly issued the Guiding Opinions on Canceling the Deposit for Mining Geological Environment Governance and Restoration and Establishing the Mine Geological Environment Governance and Restoration Fund, clearly canceling the deposit system and raising capital for governance and restoration in the form of fund. In 2019, the Ministry of Natural Resources (MNR) revised the Measures for the Implementation of the Regulations on Land Reclamation and the Provisions on the Protection of the Geological Environment of Mines, mainly involving the compilation of scheme and the fund. Since 2011, China's mining ecological restoration laws and regulations system has been continuously improved.

2. Effect and Existing Problems of Mine Ecological Restoration Legal System

With the continuous promotion of the legal construction of mine ecological restoration in China, the principle of 'prevention first, prevention and control combined, people who develop should protect, people who damage should govern, people who invest could be benefited' has been clarified, and a series of systems have been established, including the mine geological environment investigation and evaluation system, the mine geological environment protection planning system, the mine geological environment protection and land reclamation scheme compilation and reporting system, and the mine geological environment management and restoration fund system, etc. The system is relatively sound, providing good guidance and binding force in the specific operation of responsibility implementation, system implementation, law enforcement penalties and other links. However, with the continuous development of China's economy and society, some of the contents have not met the needs of current management, resulting in the implementation of the current system is not smooth enough, and there is inconsistency or conflict with the actual work. (1) The mechanism of ecological restoration account settlement is not running smoothly. In order to solve

the problem of insufficient capital for ecological restoration of abandoned mines left over from history, the MNR issued the Opinions on Exploring the Use of Market-oriented Ways to Promote Ecological Restoration of Mines in 2019, proposing a number of incentive policies to attract social funds. However, due to the low degree of market economic activity in the geographical location of the mine, the complex topography and distribution of the mine, the illegal land use procedures in the early stage, and the uneven connection between departments, the relevant policies of the 'Opinions' failed to really play an incentive effect in the implementation process in some areas[1,2]. (2)The implementation of mine geological environment protection and land reclamation scheme compilation and reporting system is not in place. At present, the mine geological environment protection and land reclamation scheme is the requirement for mining license. Most mining enterprises only prepare the scheme to obtain mining right certificate, which leads to the low quality of the scheme preparation formality. (3) The reform of the fund system, while reducing the burden on enterprises and releasing funds stuck in pressure, has eliminated an important starting point for the competent department of natural resources to supervise the ecological restoration of mining enterprises. It is difficult to supervise the mine geological environment restoration and management fund, and there is a lack of supporting supervision means at present. (4) Enterprise illegal cost is too low. The maximum penalty for failing to prepare mine geological environment protection and land reclamation schemes, complete treatment before closing the pit, or withdraw the mine geological environment treatment and restoration fund as required is only 30,000 yuan.

The Mineral Resources Law and the Implementation Rules of the Mineral Resources Law, as the basic laws governing the development of mineral resources, do not have relevant provisions for the ecological restoration of mines, which is the biggest legal obstacle to the construction of a mine ecological restoration system in China. Although the Environmental Protection Law, Land Management Law, Coal Law and other laws are involved, their relevant provisions are not enough to support or guide the construction of a perfect mine ecological restoration system. At present, the revision of the Mineral Resources Law is in the stage of soliciting opinions. On the basis of the revision, the task of gradually establishing a perfect mine ecological restoration system is still very arduous.

3. Main Ideas of Revision of Mining Ecological Restoration Law and Regulation

3.1 Necessity of Revision

3.1.1 Implement the Requirements for Strengthening Ecological Progress in the Development and Utilization of Mineral Resources

China has experienced a period of rapid economic development, and a large number of engineering construction and resource development have disturbed the natural ecosystem, resulting in ground collapse, ground cracks, collapse, landslide, aquifer damage, land damage, topographic landscape damage, animal and plant habitat damage and other mining ecological problems, making it faced with a large task of mine ecological restoration. At present, China has turned to the stage of high-quality development, and it is urgent to solve the problem of historical ecological debt.

The Central Committee of the Communist Party of China (CPC) attaches great importance to the construction of ecological civilization in the development and utilization of mineral resources. It also attaches great importance to the transformation of government functions, deepening the reform of streamlining administration and delegating powers, and optimizing services. In the Overall Scheme for the Reform of the Ecological Civilization System issued by the CPC Central Committee and The State Council, it is clearly stated that, to build an ecological civilization, we must establish a systematic and complete ecological civilization system, implement the strictest source protection system, damage compensation system, and accountability system, improve the environmental governance and ecological restoration system, and protect the ecological environment with the

system. In the Opinions of the CPC Central Committee and The State Council on Accelerating the Construction of Ecological Civilization, it is pointed out that we should adhere to the basic policy of ‘giving priority to conservation, protection and natural recovery’ and improve the system construction of ecological civilization. In terms of improving the system of ecological civilization, we should speed up the establishment of a systematic and complete system of ecological civilization institutions, to guide, regulate and restrict all kinds of activities in the development, utilization and protection of natural resources, so as to protect the ecological environment with institutions. We will comprehensively clear up the contents of existing laws and regulations that are incompatible with accelerating ecological progress, and strengthen the connection between laws and regulations. We will study and formulate laws and regulations on soil environmental protection, and revise the Land Administration Law, the Energy Conservation Law, the Circular Economy Promotion Law, the Mineral Resources Law, the Forestry Law, and the Grassland Law. The Decision of the Central Committee of the Communist Party of China on Several Major Issues Concerning Upholding and Improving the Socialist System with Chinese Characteristics to Promote the Modernization of the National Governance System and Governance Capacity, adopted at the Fourth Plenary Session of the 19th CPC Central Committee, clearly states that it is necessary to ‘improve the ecological and environmental protection system of source prevention, process control, damage compensation, and accountability’, ‘improve the ecological protection and restoration system’, ‘strictly enforce the responsibility system of ecological and environmental protection’, and ‘strictly implement the subject responsibility of enterprises and the supervision responsibility of government’.

3.1.2 Comprehensively Promotion on the Rule of Law in the Field of Mine Ecological Restoration

The Fourth Plenary Session of the 18th CPC Central Committee put forward the policy of comprehensively promoting the rule of law, and pointed out that ‘to use a strict legal system to protect the ecological environment, to accelerate the establishment of an ecological civilization legal system that effectively restricts development behaviors, to promote green development, circular development, and low-carbon development, to strengthen the legal responsibility of producers for environmental protection, and significantly increase the cost of violating the law, and to promote the construction of ecological civilization by establishing and improving the legal system for the property rights of natural resources, improving the legal system for the development and protection of territorial space, enacting and improving laws and regulations on ecological compensation, prevention and control of soil, water and air pollution, and marine ecological environment protection.

The first task of building ecological civilization is to improve the ecological legal system. It is necessary to strengthen the legislation on the protection and restoration of the ecological environment in mines, adhere to the principles of justice, fairness and openness throughout the legislative process, adhere to the simultaneous enactment, reform, abolition and interpretation, and enhance the timeliness, systematic, pertinence and effectiveness of the laws and regulations, so that laws and regulations on the management of the ecological environment in mines achieve perfection, implementation mechanisms of them achieve improvement, and all fields and links of mine ecological environment management have laws to follow.

3.1.3 Reform of Mining Right System

At present, in order to implement the decisions and arrangements of the CPC and the State Council on the reform of the mining rights transfer system and the oil and gas system, deepen the reform of ‘delegating, managing, and servicing’, give full play to the decisive role of the market in resource allocation and better play the role of the government, in the Opinions on Several Matters Concerning the Promotion of Mineral Resource Management Reform (Trial Implementation) issued by the MNR, it is clearly required to strengthen the preparatory work for the transfer of mining rights, restrict exploration to avoid the ecological protection red line and other prohibited areas in accordance with the law, do a good job in connecting with the approval items such as land use, sea

use, forest use and grass use so as to carry out normal exploration and mining work after the transfer of mining rights, and carry out the net ore transfer of sand and gravel and actively promote the net ore transfer of other minerals. Therefore, according to the system design of net ore transfer, the design of mining rights transfer contract and registration system has changed. When promoting the net ore transfer of mining rights, the current mine geological environment protection and land reclamation work also needs improvement and adjustment of the supervision system accordingly, and strengthening the supervision before and after the event, so that it meets the needs of the reform.

3.1.4 Problems Existing in the Practice of Supervision and Management of Mine Ecological Restoration

There are some problems in the practice of supervision and management of mine ecological restoration, which expose the mismatch between system design and practice.

The scheme of mine geological environment protection and land reclamation is an important key to supervise mine owners to fulfill the responsibility and obligation of mine ecological restoration, but the effect of it is not obvious. According to the Notice on the Preparation and Report of Mine Geological Environment Protection and Land reclamation Scheme, the scheme should be prepared on the basis of mine geological environment and mining area land reclamation survey and mineral resources development and utilization scheme or mine mining design. However, from the actual situation, the ecological restoration project arrangement of the scheme is often inconsistent with the actual situation of the mine, which greatly reduces the effect of the scheme as a basis for the competent department of natural resources to supervise whether the owner of the mine ecological restoration responsibility is fulfilled.

The management measures for mining geological environment restoration fund formulated by provinces vary in content, depth and management methods. In terms of the scope of fund use, some provinces included land reclamation in the scope of fund expenditure, while some provinces have not included it in the scope. At present, there is no uniform and clear requirement for this in the regulations of the ministry.

3.1.5 Take the Revision of the *Mineral Resources Law* as an Opportunity to Strengthen the Legal Effect of the Mine Ecological Restoration System

Since the introduction of the Provisions on the Protection of Mining Geological Environment in 2009, it has been amended three times, and it has clarified the principle of 'prevention first, prevention and control combination, people who develop should protect, people who damage should manage, people who invest could be benefited'. It has also gradually established the mine geological environment investigation and evaluation system, the mine geological environment protection planning system, the mine geological environment protection and land reclamation scheme compilation system, the mine geological environment restoration fund system, the supervision system, etc., to form a constantly improving mine geological environment protection system. The current revision of the Mineral Resources Law will set up a special chapter for the ecological restoration of mining areas, which is of great significance to the ecological restoration of mines, marking the beginning of special legislation on it. On the basis of the revision of the above law, to build a systematic and complete legal and regulatory system of mine ecological restoration by conducting the revision of relevant laws, regulations and departmental rules, can quickly strengthen the legal effect of mine ecological restoration system.

3.1.6 Various Localities Have Formed Experience in the Practice of Supervision and Management of Mine Ecological Restoration

In recent years, according to the Regulations on Land Reclamation, the Measures for the Implementation of the Regulations on Land Reclamation and the Provisions on the Protection of Geological Environment in Mines, local natural resources authorities have formed some good experiences in the process of promoting the implementation of them. For example, some provinces

have strengthened the monitoring and supervision and increased the punishment of illegal costs for mining owners who do not fulfill the responsibility of mine ecological restoration; some provinces have incorporated mine ecological restoration monitoring into the integrated natural resources management platform in combination with the needs of natural resource management; some provinces implement a combination of daily supervision and on-site verification, and integrate the 'double-random and one-public' inspection method into the supervision and management work; some provinces have also linked the punishment for non-performance of land reclamation and ecological restoration obligations with the abnormal list of mining owners, combined with the mining owners' exploration and mining information publicity system, and the list of serious violations, constantly increasing the cost of violations of laws and regulations for non-performance of mining owners' responsibilities. These experience practices provide reference for improving the system.

3.2 Main Ideas

Guided by the ecology civilization thought, the goal is to prevent and repair geological environment damage, land damage and ecological system damage in the whole chain of mineral resources exploitation, to ensure ecological security, improve the ecological quality of mining areas, improve resource utilization efficiency, and promote the construction of green mines. The core is to establish a restoration work mechanism that is coordinated with the reform of the mineral resources management system to strictly prevent the source of ecological problems in mining areas, strictly manage the process, severely punish the damage, and investigate the responsibility. To establish a system for ecological restoration in mining areas by revising the Mineral Resources Law. On this basis, to establish sound mining area ecological investigation and evaluation system, mining area space use planning and control system, compilation system for mine ecological restoration schemes, mining ecological environment protection fund system, mining area ecological compensation system, diversified investment mechanism, mining area ecological damage accountability system, public participation system, etc., by revising comprehensively the Regulations on Land Reclamation and Provisions on the Protection of Geological Environment in Mines, and then to form of a systematic and complete mining area ecological restoration laws and regulations system.

4. Specific Suggestions

4.1 Accelerating the Legislation of Ecological Restoration in Mines

In accordance with the requirements of 'building ecological civilization needs establishment of systematic and complete ecological civilization system', it is necessary to focus on building a systematic and complete legal system including clear responsibility mechanism, diversified investment mechanism, effective compensation mechanism, and strict regulatory mechanism, so as to ensure the realization of preventing from the origin, process control, and post evaluation, and comprehensively strengthen protection and restoration management in the whole process of mineral resources exploitation and utilization.

First of all, we need to accelerate the revision of the Mineral Resources Law which is the fundamental law of mining management, such as supplement and strengthen relevant content of mine ecological protection and restoration, clarify the legal connotation and basic requirements of mine ecological restoration [3], establish a system for ecological restoration in mining areas to clarify responsibilities. Secondly, to integrate the mining land reclamation related provisions in the Regulations on Land Reclamation to set up a special chapter, and to coordinate regulations on geological environment management and land reclamation of mines, to form the Provisions on Mine Ecological Restoration on the basis of the original Provisions on Mine Geological Environment Protection [4]. Thirdly, relevant ecological restoration management and technical standards in line with above laws and regulations need to be formulated, for example, technical

standards for local investigation of ecology and resources, technical standards for the selection of reference ecosystem, technical standards for the selection of restoration mode, and evaluation standards for the implementation effect[5].

4.2 Improving Mine Ecological Restoration Systems

In order to promote the efficient development of mine ecological restoration, the mine ecological restoration system should be clearly strengthened in laws and regulations to improve the legal effect of its implementation. Main recommendations are:

First, the compilation and implementation supervision system of mine ecological restoration scheme should be perfected. We should stipulate the preparation and quality review of the scheme in law, improve the scientific nature and rationality of the scheme, strictly control its quality, and supervise its implementation.

Second, great efforts have to be made to build economic constraint mechanism of mine ecological protection and restoration, especially to improve the fund system. Besides the supervision method of 'double-random and one-public' for fund evaluation and use, it is suggested to establish a hierarchical control mechanism. According to the situation and risk level of fund evaluation and obligations implementation, mining enterprises are classified. This differentiated supervision may urge mining enterprises to implement their responsibilities more efficiently. In addition, because the mine ecological restoration project tends to be implemented as a whole, the restoration fund should also be managed and used as a whole. It is suggested that the cost of land reclamation should be gradually included in the unified management and use of the fund, giving full play to the advantages of capital integration. At the same time, it should be clarified in mining legislation that if mining enterprises' funds are frozen because of debt disputes or declaration of bankruptcy, the fund account should be given priority as the ecological environment damage compensation funds, for the redemption of ecological debt. It is also suggested to establish an alternative restoration and fund recovery system. Mining enterprises can entrust third-party institutions to complete ecological restoration obligations alternatively. If the mining enterprises do not perform their obligations according to the provisions, and funds in their accounts are not sufficient to cover the ecological restoration costs, the government has the right to recover the balance costs from the mining owners.

Third, mine ecological restoration reference system background survey system needs to be established. We should carry out strict and normative original ecological background investigation, assessment and registration before mining, select appropriate reference system for restoration, define stage objectives and long-term objectives, and formulate measurable evaluation indexes of restoration effect [6].

Fourth, the mine ecological restoration monitoring and reporting system must be strengthened. To establish and improve the dynamic monitoring and evaluating system of mine ecological change and restoration progress, we need to further raise the coverage of monitoring network, and setup mining enterprises monitoring system for regularly tracking and evaluating the development trajectory of ecological system in recovery in line with the reference system, to support the adaptive adjustment of restoration work. We also need to enhance the monitoring report institution to form continuous and real monitoring data report and normalized summary analysis system, so as to provide basic data support for mine ecological restoration supervision [7].

Fifth, it is necessary to set-up lifelong accountability system to strictly prosecute the liability. To mining right owners who fail to fulfill their restoration obligations, they shall be severely punished for their evasion and investigated lifelong. It should be clear that mining right owner is the subject of the mine ecological restoration obligation. If it commits a commercial act, whether or not the legal obligation is transferred shall be legally supported.

Sixth, the mine ecological restoration joint disciplinary system should be established. We should enforce the warning mechanism on basis of the abnormal list of mining rights holders, and establish joint disciplinary mechanism by coordinating with national credit information platform. Those who

refuse to perform their obligations in the abnormal list ought to be included in the list of untrustworthy executed person.

Seventh, an assessment system for regulatory authorities is needed. It is necessary to clarify the legal liabilities for various illegal acts of relevant departments and persons responsible for supervising the ecological restoration of mines. The supervision and assessment of subordinate mining rights holder from its superior units within mining enterprises are also encouraged to be included in it.

Eighth, all systems above call for more strong regulatory enforcement capacity. It needs to combine the supervision and management with the public verification of exploration and mining information of mining rights holders, the law enforcement of mineral resources, the superintendence of natural resources and the central environmental protection supervision, and use advanced technical means such as satellite films and the great data, so as to improve the professional level and coverage of law enforcement, and promote the ability of law enforcement of natural resources departments at all administrative levels.

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