

# Research on Exploration and Development of Mine Geological Resources and Protection Countermeasures from the Perspective of Precision Poverty Alleviation

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**Abstract:** Some areas of Liaoning Province have a long history of mining mineral resources. These mineral resources are widely distributed and have huge resources. However, in some areas, the ecological environment tends to deteriorate due to the continuous development of mineral resources. In some areas, mineral resources cannot be fully developed due to factors such as regional economic level. Based on the investigation of precision poverty alleviation units in Liaoning Province, this paper selects the exploration and development of mine geological resources in some parts of the province and studies the protection countermeasures. Through the research, the measures to be taken for local resources in each region are pointed out, and the current geological resources of mines in various regions are pointed out a new way to explore, develop and protect.

## 1. Introduction

On October 26, 2015, General Secretary Xi Jinping emphasized the need to “adhere to precise poverty alleviation” and “resolutely prevent intergenerational transmission of poverty”. At the same time, the Fifth Plenary Session of the 18th CPC Central Committee emphasized that poverty alleviation of the rural poor is the most difficult task in building a well-off society in an all-round way. It is necessary to implement precise poverty alleviation and accurate poverty alleviation to ensure that the poor are all out of poverty on schedule. At this stage, the Party Central Committee with Comrade Xi Jinping as the core firmly grasps the stage characteristics of China's development, firmly grasps the people's longing for a better life, and puts forward the basic strategy of precise poverty alleviation in the battle against poverty and prosperity. This basic strategy is not only a realistic response to the requirements of the development of the times, but also a practice of sharing the concept of development. This paper is based on the perspective of accurate poverty alleviation to study the exploration, development and protection of geological resources in Liaoning Province.

Liaoning Province has abundant geological resources of mines. According to statistics, as of the end of 2016, Liaoning is in the northern margin of the Pacific Rim. The geological and mineralization conditions are superior and the mineral resources are abundant. 110 kinds of minerals have been discovered, of which proven reserves have been obtained. There are 66 species and 672 mineral deposits. Among the 45 major minerals that have a major impact on the national economy, Liaoning Province has 36 species of 620 mineral deposits. The magnesite in Liaoning is an advantageous mineral in the world. It has excellent texture and shallow burial. The amount of ore reserves is 2.56 billion tons, accounting for 85.6% and 25% of China and the world respectively. Minerals with advantages in China are also available. 6 kinds of boron, iron, diamond, talc, jade, petroleum, etc., with 56.4% (boron), 24.0% (iron ore), 51.4% (diamond), 20.1% (talc), 7.9% of China's resources. (Petroleum), among which, boron ore, iron ore and diamond rank first in China, talc and jade rank second in China, and oil ranks fourth in China. The minerals with comparative advantages are mainly coal, coalbed methane, natural gas, manganese, molybdenum, gold, silver, flux limestone, metallurgical dolomite, metallurgical quartzite, wollastonite, quartz quartz, perlite, refractory clay. There are 16 kinds of limestone and zeolite for cement.

In September 2017, the Ministry of Land and Resources's reply to the Liaoning Provincial Mineral Resources Master Plan (2016-2020) pointed out that it is necessary to upgrade the basic public welfare geological survey service level and serve the agricultural modernization development. Strengthen the supervision of key mining areas such as Anben mining area, Fuxin mining area and Shenyang mining area, and standardize the order of mineral resources development and utilization. Adhere to the first ecological protection, vigorously promote green exploration and green mine construction, strengthen the restoration of mine geological environment and land reclamation, and accelerate the transformation of mining development. Promote international cooperation in mining, deepen the reform of mineral resources management, and enhance the vitality of mining development.

In this paper, the survey area of Liaoning Province's precision poverty alleviation units is selected to analyze the exploration and protection of mine geological resources in various regions, and to explain the current situation and prospects of the region, to draw measures for local resources in each region.

## **2. The Research Status**

At present, there are many mining counties in poverty alleviation areas in Liaoning Province. In some areas, the long-term exploitation of various mineral resources has caused a variety of environmental problems in mine geology. At the same time, some regions cannot make mineral resources due to economic and technological conditions. Development; there are also some excellent township areas, rich in mineral resources and have been focused on development and construction. In this paper, three typical examples are selected, and the status quo problems faced by the three townships are analyzed.

Take the example of Wofenggou Township, Fuxin City, Liaoning Province. The town of Wofenggou is a half-mountain and hilly area, with the east and the west low, and the Wofenggou River runs through the township. There are abundant mineral resources in the township, coal, silica and phyllite have been discovered and developed.

Despite the rich mineral resources, due to geological problems, the town of Wofenggou has suffered from severe droughts in recent years, which has seriously affected the production and life of the people of the township. Nearly one-third of the land has been closed for years, and the drought has led to a decline in per capita income. In response to this situation, the township party committee and the township government should base themselves on the reality of their hometown, take industrial adjustment as a breakthrough, and pay close attention to disaster relief and self-rescue efforts, and strive to minimize the losses caused by disasters. At present, the township government has fully implemented the economic development plan to build a "10,000 mu grape township" as the leading industry. At the same time, the people of the township will be led to do a good job in disaster relief and self-rescue, using the digging square pond, repairing the grape pipe irrigation project; playing irrigation wells; drinking water wells for humans and animals; repairing reservoirs and other means. The whole town is invested in the work of preventing drought and protecting the ecological environment. It is expected that through the efforts of the township government, the ecological environment of the town of Wofenggou will continue to improve. After the ecological environment has stabilized, the development of mineral resources can be rationally carried out in the town of Wofenggou, thus promoting the steady growth of the rural economy.

The mineral resources are also enriched in Lingyuan, Chaoyang City, Liaoning Province. There are more than 50 proven mineral deposits in Lingyuan. The reserves of limestone, bentonite, iron and gold are high and the grade is high. The proven reserves of limestone are 60 million tons. The reserves are 2.91 million tons, the proven reserves of bentonite are 7 million tons, the reserves are 207,000 tons, the reserves of iron reserves are 2.8 million tons, the reserves of gold are 780,000 tons, and the reserves of coal resources are 1.3 million tons. These rich mineral resources are extremely abundant. The value of large-scale industrial development.

However, the current situation is not optimistic. There are still cases in which mineral resources are still not used in Lingyuan City. The mineral resources that have been developed and utilized include coal, iron, gold, perlite, bentonite, fluorite, limestone, barite, dolomite, silica, and marble.

The mineral resources that have not yet been developed still exist: the iron ore mine of 140 million tons of reserves in the town of Gengmenzi. According to the analysis, this resource can become the reserve resource base of Lingyuan Iron and Steel Group. The quartzite reserves in Liuzhangzi Township and Shijiaji Town are nearly 100 million tons. According to the survey, this resource can be used as the main raw material for glass. At the same time, the limestone in Sanjiazi Township, the Liufang Marble in Dawangzhangzi Township and the proven reserves of 170 million tons of silica have not yet been exploited on a large scale. The ferromanganese resources of Wulanbai, Siguanyingzi and Wafangdian have good development prospects. From the example of Lingyuan City, it is not difficult to find that local governments should continuously increase their exploration efforts and vigorously develop mineral resources under the premise of protecting the environment. At the same time, reasonable planning should be made for each mineral resource to avoid waste of resources, loss of manpower, material resources and financial resources, but fail to make full use of resources.

Different from the other two examples, the Kuandian area in Dandong City, Liaoning Province is rich in resources and has great potential for development and utilization. Kuandian has complex geological structures, good metallogenic conditions and abundant mineral resources. There are 57 kinds of proven minerals with a reserve of more than 800 million tons. 28 kinds have been developed and utilized, and the reserves available for mining are 570 million tons. Mainly boron, magnesium, silicon, iron, lead, zinc, copper, gold, molybdenum, coal, limestone, talc, basalt, calcite and so on. Among them, the reserves of boron ore are more than 40% of the country, and the output is more than 60% of the country. For the Kuandian area, Liaoning Province should increase investment in technology and capital to make full use of the mineral resources of Kuandian. At the same time, the Kuandian area can be set up as an excellent demonstration area and vigorously promoted, to appeal to other township areas to focus on the exploration and protection of regional mining geological resources.

### **3. The Research Conclusion**

The terrain of Liaoning Province is generally from north to south, tilting from the east to the west to the middle. The mountainous hills are divided into east and west hatchbacks, descending toward the central plains, and are horseshoe-shaped to the Bohai Sea. Liaodong and western Liaoning are mountainous hills; the central part is the Liaohe Plain; and the western Bohai Sea is a narrow coastal plain. Good geological conditions have spawned rich mineral resources. Although the economic conditions are backward in some poverty-stricken areas in Liaoning Province under the current situation, there are still some poor areas with promising ecological environment prospects, and some poor areas also have relatively dominant industries. direction. If these areas can adhere to the exploration, development and efficient use of regional geological resources under the premise of protecting the ecological environment, it can greatly promote the steady development of the local economy and promote the continuous economic growth of Liaoning Province. Promote the improvement of the national economic level.

At the same time, for the township areas with rich mineral resources in Liaoning Province, we should create innovative ways of development that belong to the region according to regional characteristics. In combination with the strategy of ensuring poverty alleviation, we will do a good job in poverty alleviation and vigorously develop local industries, to help poor towns and villages to achieve poverty alleviation.

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