

# Problems and Countermeasures of Ecological Environmental Monitoring Quality under the New Situation

Xiaofeng Yao

Datong Ecological Environmental Monitoring Center, Datong, 037002 Shanxi, China

**Keywords:** New situation, Ecological environment monitoring, Monitoring quality

**Abstract:** In the work of ecological environment protection, ecological environment monitoring is important link, which can help us accurately and timely grasp the overall situation and change trend of ecological environment quality and environmental pollution, help the government and relevant management departments to carry out environmental protection and ecological environment quality improvement according to local conditions, and is of great significance to promote the sustainable development of environmental protection in China, The key to environmental monitoring is to the quality of ecological environment monitoring. In this paper, the main factors affecting the ecological environment monitoring are combined to analyze the current ecological environment monitoring quality problems and propose useful countermeasures.

## 1. Introduction

At present, with the progress of China's economic level and the improvement of people's production and living standards, the problem of environmental pollution is still relatively serious. At the 18th National Congress of the Communist Party of China, the construction of ecological civilization was incorporated into the overall layout of the cause of socialism with Chinese characteristics. It was formally expanded into the "five in one" of economic construction, political construction, cultural construction, social construction and ecological civilization. The construction of ecological civilization was given a prominent position, and efforts were made to build a beautiful China and achieve the sustainable development of the Chinese nation. The work of ecological environment protection in China has a long way to go, and environmental monitoring, as a basic work in environmental protection, can help us accurately and timely grasp the overall situation and change trend of ecological environment quality and environmental pollution, help the government and relevant management departments to carry out environmental protection and ecological environment quality improvement work according to local conditions, and correctly coordinate economic development and ecological environment The relationship between man and the natural environment is of great significance for promoting the sustainable development of environmental protection in China. Therefore, in order to better protect the ecological environment, environmental monitoring is a very important link, and ensuring the quality of ecological environmental monitoring is the key to environmental monitoring.

## 2. The Importance of Ecological Environment Monitoring in the New Situation

### 2.1 Provide Basis for the Establishment of Environmental Pollution Prevention Mechanism

Ecological environment monitoring refers to the process of obtaining environmental quality and pollution data and information by using chemical, physical, biological and other technical means to carry out monitoring activities such as investigation and analysis of environmental quality and pollution emissions for environmental factors such as water and wastewater, ambient air and waste gas, soil, noise, solid waste, etc. Ecological environment monitoring is an important means to master the environmental quality status and development trend, is the basis for scientific management of the environment and environmental law enforcement and supervision, and is an essential basic work for environmental protection. In practice, it is often called "the eyes and ears of

environmental protection”. Through environmental monitoring, determine whether the environmental quality in the region conforms to the relevant national standards, and then judge the type, degree and scope of pollution, find out the causes of pollution, analyze the pollution sources, pollution paths, pollution distribution, predict pollution changes and diffusion trends, etc., timely and comprehensively understand the environmental pollution status, comprehensively reflect the environmental quality level, and provide scientific basis for environmental management, Make it possible to formulate reasonable protection strategies and solutions for the local environment, and establish a relatively complete pollution prevention mechanism in water environment, atmospheric environment, soil environment, noise environment, etc. At the same time, it can also evaluate the implementation effect of prevention and control measures and methods to ensure the smooth implementation of environmental management.

Environmental monitoring is mainly manifested in water pollution control, air pollution control, noise pollution control and soil pollution control, and a relatively complete governance mechanism is established. When monitoring water quality, it can quickly obtain the basic information of the monitored water body, improve the rationality, authenticity, objectivity and accuracy of the data, and can be used as an important reference for water source control. In general, the assessment analysis method is used to analyze the basic content, composition type, pollution degree, etc. of water source pollutants, so as to develop an effective environmental pollution prevention mechanism. In the work of air pollution monitoring, many cities have serious smog problems. Such weather is easy to affect driving, and also affects people's physical and mental health. For air pollution monitoring, it is necessary to define the basic content of air pollutants, conduct scientific and accurate calculations, obtain more accurate and objective data, and define its technical indicators. At the same time, scientific detection methods should be used to analyze the changes of indicators in the air, systematically analyze the trend of pollution diffusion, and provide an important basis for the subsequent development of environmental protection programs. In the process of noise monitoring, professional instruments can be used to monitor the noise situation in important areas to obtain more accurate data, thus providing a useful basis for the establishment of noise standard prevention mechanism. In the process of monitoring soil pollution, soil pollution in many regions is serious, mainly including industrial pollution, agricultural pollution and domestic pollution. Some regions have affected people's lives. Therefore, in the actual monitoring, the content of soil pollutants in the monitored region should be clarified, so as to find out the pollution sources and causes, and establish a more useful prevention and control mechanism.

## **2.2 Promote More Coordination between Economic Development and Ecological Environment**

Economic development is inseparable from the environment, and a good ecological environment is the basis for economic development. It has guided us to unswervingly follow the path of civilized development featuring development in production, prosperity in life and sound ecology. At present, China's ecological civilization construction is still facing many contradictions and challenges. In terms of ecological environment protection, we need to keep the tangible and intangible boundaries of human activities, limit the unreasonable behavior of human beings' excessive use of nature, so as to truly build a harmonious symbiotic relationship between man and nature and achieve sustainable development. In order to implement the sustainable development strategy, the environmental impact assessment system implemented in China is to analyze, predict and assess the possible environmental impact after the implementation of planning and construction projects, and propose countermeasures and measures to prevent or mitigate adverse environmental impacts. Scientific environmental assessment comes from practical and reliable environmental monitoring. According to the analysis, research, judgment, prediction and evaluation of environmental monitoring data in different regions, different environmental conditions, different seasons and different categories, the environmental functional performance of a certain region is reasonably planned, which provides a scientific basis for the overall planning layout of urban and rural areas and the site selection of construction projects, and prevents environmental damage and

economic losses that are difficult to eliminate due to layout and site selection errors. Moreover, the development of green economy based on environmental protection requires enterprises to improve efficiency, develop clean technologies, update and replace products and raw materials harmful to the environment, and achieve environmental and resource protection and effective management. An important task of environmental monitoring is to monitor the pollution discharge of enterprises and understand the pollution status of enterprises in time. Enterprises can conduct material accounting according to the input, output and emission of raw materials, understand the utilization efficiency of raw materials and energy utilization rate. With the analysis of these data, enterprises can put forward effective improvement plans, reduce the generation of pollutants, achieve cleaner production, improve resource utilization efficiency, and create new benefits for enterprises. Do a good job in ecological environment monitoring, continuously optimize monitoring technology, improve the overall level of environmental monitoring, timely and comprehensively reflect the environmental quality, provide effective decision-making basis for solving the contradiction between economic development and ecological environment, promote the relationship between economic development and ecological environment to be more coordinated, and further implement and improve the sustainable development strategy, so as to realize the modernization of harmonious coexistence between man and nature.

### **2.3 Early Warning and Control of Sudden Pollution Events**

In the process of industrial development, sudden environmental pollution events occur frequently. If major environmental pollution problems occur, the scope of influence will also expand, thus causing greater economic losses. Strengthening ecological environment monitoring and mastering environmental quality and pollution changes can not only find pollution problems in time, eliminate hidden dangers, and play a certain role in early warning of sudden pollution accidents, but also reduce the probability of sudden pollution events to a certain extent, reduce the level of sudden pollution events, shorten the time for emergency disposal, and achieve the purpose of effectively preventing sudden environmental pollution events. In addition, in the process of handling pollution emergencies, we can also determine the source of pollutants through environmental monitoring results, understand the composition, pollution degree and diffusion range of pollutants, and provide scientific basis for effective control of pollution and solving pollution accidents.

## **3. Main Quality Problems of Ecological Environment Monitoring in the New Situation**

### **3.1 Insufficient Quality Assurance Capability**

Ecological environment monitoring involves many links such as monitoring point layout, sample collection, analysis and testing, data processing, etc. The quality of personnel, instruments and equipment, analysis methods, detection reagents, and environmental conditions are the main guarantee factors affecting the monitoring quality. In combination with the actual situation, during the ecological environment monitoring in some regions of China, the problem of insufficient quality assurance capacity is obvious, which is mainly manifested in a series of problems, such as the operating environment can not fully meet the conditions, the experimental instruments and equipment are backward, new technologies and methods can not be promoted, and the working capacity is relatively lacking. This will easily reduce the basic quality of monitoring work, and it is also difficult to meet the corresponding technical specifications and standards, It is easy to have the problem of low data accuracy, resulting in a significant reduction in the quality of monitoring work.

### **3.2 The Quality Evaluation System is Not Perfect**

At present, the quality evaluation system of ecological environment monitoring in China is not perfect, which leads to a large discount in the quality of ecological environment monitoring. In 2017, the Certification and Accreditation Administration of the People's Republic of China issued the General Requirements for Inspection and Testing Institutions on the Evaluation of the Qualification Accreditation Ability of Inspection and Testing Institutions, and based on this, the

Supplementary Requirements for the Evaluation of Ecological Environment Monitoring Institutions for the Qualification Accreditation of Inspection and Testing Institutions was formulated for the particularity of ecological environment monitoring institutions, which put forward requirements for institutions, personnel, site environment, equipment and facilities, management system, etc. To ensure the authenticity, objectivity and accuracy of the monitoring results. However, a relatively perfect evaluation system has not been established, so it is difficult to carry out a systematic comprehensive evaluation by means of scientific means. At the same time, the evaluation system is also relatively limited. It only quantifies the content of the evaluation indicators and does not comprehensively consider the evaluation work. Therefore, the analysis data is relatively one-sided, lacking a global perspective and accuracy, which is not conducive to the improvement of the monitoring quality evaluation effect.

### **3.3 Relatively Weak Quality Management System**

In the work field related to ecological environment monitoring, a unified and perfect quality management system has not been established, which is specifically shown in the two aspects of ecological environment monitoring quality supervision and management and quality assurance system. On the one hand, in the internal quality management work, the monitoring organization needs to carry out special internal control work. However, due to the lack of awareness of each link of environmental monitoring work, different understanding depth and perspective, and excessive emphasis on business content and application technology, the monitoring organization has neglected the quality control link, resulting in a series of problems in the quality supervision. In the external supervision work, as executors, market supervision departments, certification and accreditation departments, etc., it is very easy to find that the number of professional supervisors is relatively small and they lack sufficient professional knowledge of environmental monitoring and supervision, which makes it difficult to effectively guarantee the effect of external quality supervision, and there is no relatively unified and clear regulatory work system. Therefore, it is difficult to implement the quality supervision work in detail. On the other hand, the quality assurance system is not perfect. From the development in recent years, environmental monitoring quality management has begun to attach importance to the evaluation of social credit of monitoring institutions. After the reform of the monitoring service market, testing institutions have gradually emerged, which has played a certain role in promoting social and economic development. However, the current monitoring market is not mature, lacks a relatively perfect quality assurance system, benefits driven, human intervention and other impacts, resulting in varying degrees of deviation in monitoring data, which is not conducive to ensuring the authenticity, objectivity and accuracy of data.

## **4. Countermeasures for Optimizing the Quality of Ecological Environment Monitoring under the New Situation**

### **4.1 Improve the Quality Assurance Ability of Ecological Environment Monitoring**

The quality assurance capability of ecological environment monitoring can play a decisive role in the quality of monitoring work, and relevant departments need to implement specific work to comprehensively improve the quality assurance capability of ecological environment. First, it should be recognized that environmental monitoring has high requirements for professionalism, and there are relatively many factors that affect the quality of environmental monitoring work. It is necessary to ensure that the personnel of relevant institutions have high professional quality, master the corresponding professional technology, and minimize the impact of subjective factors on the quality of environmental monitoring. In specific work, professional skills training should be carried out regularly for relevant technical personnel, requiring them to master basic theoretical knowledge, skillfully use practical skills, and comprehensively improve their work quality, so as to effectively control monitoring quality technology. In addition, relevant staff should be guided to actively learn the management system, laws and regulations related to environmental monitoring, so that

everything is based on compliance with laws and regulations, to avoid autonomous behavior, and to reduce the probability of environmental monitoring quality problems as much as possible. Second, relevant administrative departments should speed up the formulation of special access systems, comprehensively improve the professional skills of internal personnel, and actively learn new technologies and standards, so as to ensure that new technologies can play a relatively good role in environmental monitoring. Third, for the construction of quality assurance capability, we should constantly research and develop relatively new and efficient detection technologies, advanced instruments, equipment and auxiliary facilities, and make full use of foreign advanced experience to constantly enrich the technical elements of environmental monitoring, so as to promote the effective improvement of environmental monitoring quality in the new situation as far as possible.

#### **4.2 Improve the Quality Evaluation System of Ecological Environment Monitoring**

In the process of monitoring quality management, it is very important to establish a relatively perfect evaluation system. It is also necessary to set relatively reasonable evaluation indicators to systematically, comprehensively and deeply evaluate the quality of environmental monitoring work, so as to promote the high-quality development of environmental monitoring work. First, the process of ecological environment monitoring is relatively complex, involving many links, each of which is interrelated and interacts with each other. In the system of improving quality evaluation, special quality evaluation indicators should be set for the whole process of monitoring, and different links and procedures should be systematically and comprehensively evaluated to fully understand the different problems in each link and take more effective countermeasures, Realize effective control over the whole quality link. Second, for specific quality evaluation, relevant technical guidance, specifications and technical standards should be fully implemented, a more complete indicator system should be established, and the quality of the whole process of monitoring should be systematically monitored and evaluated to ensure the accuracy of monitoring results and promote more systematic management of relevant monitoring quality.

#### **4.3 Improve the Quality Management System of Ecological Environment Monitoring**

To ensure the quality of ecological environment monitoring, we should pay attention to the effective improvement of its management system, strengthen the standardization and restraint of the system, and comprehensively strengthen the management of ecological environment monitoring quality. First, we should further improve the relevant quality supervision work system, take internal supervision as the most important work, and external supervision as the auxiliary work. Internal supervision and external supervision should be combined and mutually promoted to achieve the purpose of strengthening the supervision effect. In the specific supervision system, the corresponding requirements shall be specified. The monitoring organization shall arrange personnel with strong professional ability to conduct in-depth investigation of internal monitoring activities, establish internal supervision mode, create a special data management platform, and use high-quality network software technology to comprehensively supervise and record all information and data involved in the monitoring process, in combination with modern supervision and management professional theories and basic methods, To ensure that the whole process can be fully supervised and the follow-up is conducive to tracing. In the process of formulating the supervision system, it is also necessary to define the basic requirements for external supervision, build a relatively high quality external supervision team, innovate supervision methods, conduct random inspection, cross inspection, etc., engage in every link before, during and after the event, carry out supervision and management, define relevant national environmental monitoring standards, and further optimize the work of external supervision. Second, we should further improve the management system related to quality assurance. In the quality assurance system, on the one hand, the punishment standards and requirements should be further clarified, fraud is strictly prohibited, and the quality assurance system should be improved. Among them, we should make up for a series of loopholes in the previous regulatory system, formulate more professional punishment measures, basic rules, etc., and form a certain binding role in the specific implementation process. On the other hand, the influence of various internal factors of the monitoring organization should be

eliminated to the greatest extent, and a special management system should be developed from the horizontal and vertical as a constraint to minimize a series of problems such as obvious deviation of monitoring results and substandard monitoring quality. Relevant responsibility mechanisms shall be established to define the departments and posts responsible for monitoring quality. In case of quality problems, the responsibility can be assigned to individuals to improve the sense of responsibility and sense of honor and disgrace of staff, which is an effective guarantee for improving the quality of environmental monitoring. Third, we need to improve the whole process quality control mechanism. Among them, the whole process of environmental monitoring should be systematically managed from the overall perspective, and the corresponding management system should be improved from the aspects of technology application, management procedures, and quality assurance, and the testing organization should be required to implement it in daily work. Standardize the report format and record format as much as possible, which is more conducive to the effective management and quality evaluation of monitoring results, and further improve the quality control of environmental monitoring, so as to enable it to adapt to the development needs of the current new situation.

## **5. Conclusion**

As the basic work of ecological environment protection, ecological environment monitoring plays a particularly important role, and ensuring the quality of environmental monitoring is the key to do a good job of ecological environment monitoring. At present, there are still a series of problems in the quality of ecological environment monitoring in China, such as relatively insufficient guarantee capacity, imperfect evaluation system, and imperfect management system, which will affect the management and control of monitoring quality to varying degrees. In order to improve the quality of environmental monitoring, first of all, through improving the professional quality of monitoring personnel, developing and improving monitoring technology, instruments and equipment, the internal security and external security are combined to improve the quality assurance capability; Secondly, establish a relatively perfect quality evaluation system, set reasonable and comprehensive evaluation indicators, and systematically supervise and evaluate the quality of the whole monitoring process, so as to promote more systematic management of the quality of environmental monitoring; Finally, the supervision system and management system should be further improved to achieve the combination of internal supervision and external supervision, clarify the punishment standards and requirements, improve the post responsibility mechanism, develop a relatively perfect quality control system from the overall perspective, from the aspects of technology application, management procedures, and quality assurance, and do a good job in the supervision and quality control of the whole process to ensure the quality of environmental monitoring, Better adapt to the development needs of the new situation.

## **References**

- [1] Shan Ming'e Problems and Countermeasures in the Quality Management of Ecological Environment Monitoring [J] Photogeography, 2021 (000-014).
- [2] Ren Huihui Problems and Countermeasures of Ecological Environment Monitoring Quality under the New Situation [J] Petroleum and petrochemical materials procurement, 2022 (000-008).
- [3] Su Tong Research on the quality of ecological environment monitoring under the new situation [J] Leather Production and Environmental Protection Technology, 2022 (003-008).
- [4] Su Qian Study on the Importance of Environmental Monitoring in Ecological Environment Protection and Countermeasures [J] Love, Marriage and Family, 2022 (10): 2.
- [5] Sun Tong Status and role of environmental monitoring in society [J] Technology Entrepreneur, 2013 (222).