

# Analysis of Existing Problems and Treatment Methods of Urban Environmental Monitoring

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**Abstract:** With the rapid development of the city, the concept of ecological environment has been integrated into everyone's heart. In the new era, people also have higher requirements for the quality of living environment. However, at this stage, with the development of urbanization and industrialization, the problem of environmental pollution has become more and more serious. Therefore, we must do a good job in urban environmental monitoring, pay attention to the protection of urban environment, design and implement effective governance methods, so as to improve the quality of environmental governance. This article analyzes the problems in urban environmental monitoring, and formulates reasonable treatment methods and suggestions.

**Key words:** Urban environmental monitoring, problems, governance methods, analysis.

## 1. Introduction

If we want to promote the better development of the city and increase the attraction of the city, we must pay attention to the work of the urban ecological environment and improve the overall quality of the urban environment. There are many problems in urban environmental monitoring, which must be solved now. Urban environmental protection has become the key to social development, and the results of environmental monitoring are the scientific basis for environmental decision-making. Therefore, we must pay attention to urban environmental monitoring, find out the problems found in monitoring, and then formulate relevant governance methods to solve them, so as to avoid environmental problems becoming more serious, effectively improve the quality of urban environmental governance, meet people's needs for urban environment, and build a green city, so as to promote the better development of society.

## 2. Significance of Improving the Technical Level of Environmental Monitoring

### 2.1 Improving Environmental Monitoring Technology Can Better Provide Inspection Function for Environmental Protection

Environmental monitoring can clarify the types and contents of pollutants in the environment. After clarifying these pollution sources, we can suit the remedy to the case and effectively solve such problems. In addition, environmental monitoring can check whether the environmental protection work of each factory is in place. Heavy industry, especially steel, chemical industry, construction and other fields will cause certain pollution in the process of production and operation [1]. China has made clear provisions on the discharge of pollutants, and the units that violate this provision will be punished. Judging whether each unit meets this requirement is realized through environmental monitoring.

### 2.2 Improving Environmental Monitoring Technology Can Better Serve Urban Environmental Planning

Economic and social development and environmental

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protection go hand in hand. Economic and social development cannot be at the expense of the environment. However, in the process of economic and social development, the urban environment will inevitably be affected to a certain extent. In the face of environmental pollution, it is impossible to give up food for choking and give up economic construction completely. Instead, we should promote environmental protection and balance the relationship between economy and environment. From the development of national environmental protection legislation and environmental protection work in recent years, the state attaches great importance to environmental protection in policy, which requires full efforts in urban environmental planning, so as to achieve the purpose of coordinated development of environment and economy.

### *2.3 Conducive to Promoting the Development of Science and Technology*

Science and technology are the primary productive forces, and social progress cannot be separated from the support of science and technology. Some scientific researches are often based on environmental monitoring, such as environmental background value investigation in natural resource investigation, pollution source investigation in environmental monitoring and environmental capacity research, etc. Through such research, we can have a more comprehensive understanding of environmental protection and feed back scientific research, so as to promote environmental protection to a higher level [2].

## **3. Methods of Urban Environmental Monitoring**

### *3.1 Fixed Point Environmental Monitoring Method*

The use of fixed-point environmental monitoring method can determine the actual situation of pollutants. This method is mainly used for reasonable monitoring in some seriously polluted areas. The

fixed-point environmental monitoring method can understand the transmission speed and situation of pollutants in all aspects, and quickly find out the pollution source. The monitoring information can provide a basis for environmental protection and treatment in the future.

### *3.2 Research Environmental Monitoring Methods*

The use of research-based environmental monitoring methods can explore the situation of pollutants. However, the standard of this method is relatively strict, the standardization is high, and there needs to be unity. This can ensure the smooth development of environmental governance and ensure the governance effect [3]. This monitoring method is mainly applied to the research work to explore the monitoring technology and environmental quality, and can provide a basis for the research of environmental problems.

### *3.3 Supervisory Environmental Monitoring Methods*

The supervisory environmental monitoring method mainly monitors the discharge of pollutants, and analyzes the monitored data information using relevant equipment and methods, to accurately understand the actual situation of some pollutants. This monitoring method is mainly to check the pollution sources in the environment, such as checking the development trend of pollutants in the urban environment and regularly checking the emission of pollution sources. It can play a preventive role and is a very necessary monitoring method.

## **4. Problems in Urban Environmental Monitoring**

### *4.1 The Level of Urban Environmental Monitoring Is Not High at This Stage*

With the gradual acceleration of urbanization, the amount of urban pollutants has gradually increased. However, for the current level of urban environmental monitoring, especially at the county level, the strength

is weak, so it is impossible to conduct all-round research on the pollutants in the city, and there are not enough resources to use the most reasonable methods in the treatment, unable to deal with various urban pollutants in time. If there is serious pollution in the city and there is a lack of reasonable treatment methods, it will lead to the inability to respond quickly to environmental pollution and lose the first opportunity. In this case, we must pay attention to the pre-design of environmental pollution control methods and formulate reasonable methods to deal with pollutants. In addition, when monitoring the urban environment, there are still some limitations, which cannot effectively control the large-area environmental monitoring.

#### *4.2 The Structure of Urban Environmental Monitoring Is Not Comprehensive Enough*

Because the economic conditions of small cities were relatively poor in the past, they all paid more attention to economic development and did not pay enough attention to environmental protection, which led to more and more serious environmental problems in cities [4]. The work of urban environmental monitoring has only been paid attention to in recent years, and the system has not been improved, so the resources cannot meet the corresponding standards when monitoring the urban environment. The monitoring equipment and personnel allocation are not compatible with the urban volume, so it is impossible to monitor the urban environment in all aspects. On the other hand, although we have begun to pay attention to urban environmental monitoring and governance, we have not designed a reasonable environmental governance plan, and the monitoring area is not wide enough, which makes the urban environmental governance unable to develop well.

#### *4.3 The Industrialization System Has Not Been Optimized*

Among many small cities, the choice of industrialization is narrow. The development direction

of industrialization of government departments is lack of foresight. Even many cities have not formulated relevant systems up to now, and have not done a comprehensive treatment when dealing with urban environmental pollutants. The industrialization of many regions has not been developed in combination with the actual design situation. It is not easy to attract investment, so it is easy to make concessions in site selection. Moreover, there is a more serious situation, that is, the situation that should be dealt with during the implementation. In addition, there is also a lack of appropriate localization regulations in terms of operation [5]. Such regulations mainly appear in first tier cities and have not been improved in other cities. The lack of relevant normative content will easily lead to problems, increase the burden of the local government and affect the development of the city.

## **5. Treatment Methods of Problems in Urban Environmental Monitoring**

### *5.1 Optimize Urban Environmental Monitoring System and Governance Methods*

In urban work, environmental monitoring is a very important work. It can scientifically judge environmental problems and is the “eye” of environmental protection. Therefore, the urban ecological environment department must pay attention to the optimization of the monitoring system, learn from foreign environmental monitoring and treatment technologies and systems, learn from each other, so as to optimize its own work content, optimize the treatment methods and equipment, give full play to the role of urban environmental monitoring, timely understand the pollution status and protect the urban environment from damage. In addition, when optimizing the monitoring system and governance methods, we must optimize them in combination with the environmental situation and development needs of the city, constantly update and introduce some advanced equipment for environmental

governance, constantly find and improve the problems in governance, and establish monitoring and governance methods that meet the needs of urban environmental development, ensure the quality of monitoring data and the effect of environmental governance.

### *5.2 Urban Environmental Monitoring and Governance Must Be Reasonable*

In the urban environmental monitoring and governance work, whether it is the governance technology or the monitoring work content, it must be developed stably and improved pertinently, so that the monitoring work and technical reserve can meet the development needs. Rationality means to formulate relevant efficient and feasible monitoring and treatment methods in combination with the situation of all pollutants and harmful substances in the city. Urban environmental monitoring must classify the hazardous, non-hazardous and those that need to be monitored, establish its own database, and replace the comprehensive standards with the characteristics of pollutants, so as to better study the monitoring results and make the monitoring more scientific and reasonable. At the same time, it is also necessary to carry out real-time monitoring of the actual situation of various pollutants in the environmental monitoring objectives, and increase the layout of automatic monitoring equipment, so that we can understand the actual situation of pollutants at any time, so as to feed back the quality of urban environment and form an early warning mechanism [6]. After monitoring the results, we must find the source of the problem and improve the environmental treatment technology to make it more reasonable according to the actual situation and relevant theoretical knowledge. Finally, it is also necessary to evaluate and summarize the monitoring work and governance work in all aspects, to lay a foundation for future work and provide knowledge reserves for the follow-up work.

### *5.3 Use Reasonable Monitoring and Treatment Methods for Sudden Urban Environmental Problems*

In the urban environment, if there is a sudden environmental pollution, we need to use the corresponding methods to deal with it according to the change of the situation. At this stage, in the emergency work of urban environmental accidents, the preparation of urban ecological environment departments is still insufficient. Therefore, in the future development, the ecological and environmental department must pay attention to this content, formulate emergency plans for various environmental protection work, and expect the treatment effect for sudden urban environmental problems. We must not only make reasonable use of environmental monitoring and governance methods, but also need to constantly improve the professional ability of staff. Standard sampling methods and emergency means need to be used when formulating emergency treatment plans. When selecting treatment methods, they must be targeted. In case of sudden environmental pollution problems, we can find reasonable methods to deal with them in time. For all possible problems, we can formulate corresponding emergency treatment plans, so as to ensure that the ecological environment department can have response methods in case of emergencies and minimize the harm of environmental pollution.

### *5.4 Vigorously Promote the Urban Environmental Monitoring System of Animal Networking*

In this era of the outbreak of the Internet of things, we connect all kinds of objects in our life through sensors according to the requirements of human production and operation, to realize human monitoring of urban environmental index. Environmental monitoring refers to the calculation and supervision of various environmental indicators in a specific area. It is also an important means to study environmental pollution at present. To study the urban environment, we need to observe and analyze the city, people and

environment as a whole, and apply the Internet of things, big data and cloud computing technology to improve the level of environmental management. In addition to the environmental perception data collection function, that is, the perception of environmental elements becomes more convenient, while accelerating the collection and transmission of information, enriching the methods of data storage and data analysis, it can also cover a wider range, and create a unified common management data platform for comprehensive analysis in combination with other big data such as economy, production, life and business, bring more perfect decision support to environmental management. The improvement and promotion of Internet of things technology will escort the historic cause of environmental monitoring. The scientific application of Internet of things technology can monitor a variety of environmental attribute parameters that have an impact on human beings and the environment. After analyzing and summarizing the environmental pollution, according to the regional specificity, the monitoring points are arranged at the necessary positions, and a variety of sensors are installed according to the actual production needs, such as temperature and humidity, CO concentration, SO<sub>2</sub>, etc.. Then the data information collected by the monitoring points is submitted to the environmental monitoring and Analysis Center. These data are finally reflected to people in different forms according to people actual production needs. To sum up, the combination of environmental monitoring system and Internet of things technology is so urgent.

The design of urban environment monitoring system based on Internet of things combines sensor technology, ZigBee technology and 4G technology to monitor the urban environment. Firstly, the hardware part of urban environmental monitoring is built, and a variety of sensors are used to perceive the environmental data. After the establishment of ZigBee wireless sensor network, the environmental data collected by the sensors can be transmitted to the

coordinator node. After the data are converted by the gateway, it can be transmitted to the computer and mobile phone interface in 4G network communication. Finally, you can view the real-time data of urban environmental monitoring at any time.

### *5.5 Strengthen the Establishment of Urban Emergency Monitoring System*

#### *5.5.1 Improve the Accuracy of Data Collection and Processing*

During the construction of urban environmental emergency monitoring system, the accuracy of data collection and processing should be improved, and the level of software and hardware should be improved. At this time, fast protocol needs to be used to realize compression, transmission and processing. The main function of this protocol is to process, store and transmit the collected corresponding data and information, to effectively ensure the accuracy, stability and effectiveness of environmental monitoring data. This way can effectively process the data information, provide visual data processing results for relevant departments, improve the efficiency of data transmission, improve the accuracy of information, and effectively provide the basis for the implementation of environmental monitoring system.

#### *5.5.2 Promote the Application of Wireless Environmental Monitoring*

Wireless environmental monitoring can fundamentally solve the problem of data transmission and communication. SMS and GPRS (General Packet Radio Service) technology need to be widely used in the development of wireless environmental monitoring technology. This can realize the long-distance transmission of environmental monitoring data and information, to realize the analysis and detection of pollution sources, to provide real-time and effective data for environmental monitoring, ensure that the environmental monitoring work is timelier and ensure the smooth development of environmental monitoring work.

### 5.5.3 Give Full Play to the Overall Advantages of Remote Environmental Monitoring

With the development of networking in China, in the process of environmental monitoring, remote control and operation can be realized through public network, which can reduce the investment cost. The monitoring system is reliable, and the embedded system can be used to manage the environmental monitoring system well. The use of the system is no longer limited, it is mainly a digital sensor based on temperature and humidity, which can realize the control of dispersed and long-distance pollutants, and then provide accurate data for the research of pollutants.

## 6. Conclusion

In urban environmental monitoring, environmental monitoring and governance methods belong to the important content of environmental protection, and play a key role in environmental protection. Environmental monitoring is an important prerequisite for scientifically formulating environmental governance policies. Therefore, people must combine the current situation of society, do a good job in urban environmental monitoring, form an environmental monitoring and early warning mechanism, and formulate reasonable environmental governance methods. Only through scientific and feasible methods

can we effectively improve the quality of urban environment, to promote the better development of the city.

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