Research on Existing Problems and Solutions in Soil Environmental Monitoring

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Abstract: Soil resources are the foundation of agricultural development. However, with the continuous deepening of economic construction in recent years, soil resources have been polluted to varying degrees, which is very unfavorable to the implementation of sustainable development strategies. Therefore, it is necessary to do a good job in monitoring the soil environment, find out the pollution problems in time, and then solve them in a targeted manner. However, from the current actual situation, there are still certain problems in soil environmental monitoring, which have affected the quality of soil environmental monitoring. Based on this, this article starts with the importance of soil environmental monitoring, first analyzes the problems in soil environmental monitoring, and then explores measures to improve the quality of soil environmental monitoring, hoping to provide a certain reference for the improvement of soil environmental monitoring in my country.

1. Introduction

Due to the neglect of environmental protection in economic development, the problem of soil resource pollution has become more and more serious in recent years, which not only causes greater pressure on the ecological environment, but also affects people's health. Therefore, it is necessary to discover the problem of soil pollution in time and take specific protective measures to reduce the degree of soil pollution. In the protection of soil resources, soil environmental monitoring is an important measure. It can detect changes in various substances in soil resources in a timely manner, so as to analyze whether the soil is polluted, and at the same time provide a decision-making basis for subsequent soil governance and protection. However, there are still certain problems in the current soil environmental monitoring, which affects the quality of soil environmental monitoring. The corresponding monitoring results have low reference value and cannot accurately reflect the actual soil conditions. Therefore, it is necessary to pay attention to quality control in soil environmental monitoring, discover the existing problems in time, and then make targeted improvements to lay the foundation for the quality assurance of soil environmental monitoring [1].

2. The Importance of Soil Environmental Monitoring

Soil environmental monitoring is to effectively protect soil resources and allow relevant departments to understand the status and problems of soil. Judging from the current actual situation, after soil resource pollution, not only the follow-up treatment is very complicated, but also a lot of manpower and material resources need to be invested. In addition, soil resources are the foundation of agricultural development. If soil resources are polluted, it will not only cause the problem of reduced production, but also may lead to harmful substances in crops, threatening people's health. It can be seen that soil environmental monitoring is very important in the protection of soil resources. Through soil environmental monitoring, prevention can be achieved. When pollution signs appear, pollution sources can be controlled to avoid the continuous deterioration of pollution, and it can also improve the safety of crops [2].

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3. Problems in Soil Environmental Monitoring

3.1 Incomplete Laws and Regulations

Soil environmental monitoring is a systematic project, which involves the joint collaboration of multiple departments, so it needs sound laws and regulations to provide support. However, judging from the actual situation in my country, the current laws on soil environmental monitoring are not perfect, and the corresponding division of responsibilities and rights needs to be clarified. This has led to resistance in the development of many tasks and cannot be implemented in specific applications. Of course, this is also related to the shorter time for the development of soil environmental monitoring. Many legal details have not been clarified, making it impossible for relevant departments to start work.

Due to the imperfect laws and regulations, there are certain problems in the soil environmental monitoring system. The identification process of many pollutants can no longer meet actual needs, and the corresponding emission standards need to be updated. For example, petroleum hydrocarbons and anti-toxic phenols have not been introduced into the soil environmental monitoring system and standards, which has affected the effectiveness of soil environmental monitoring.

3.2 Insufficient Funds

Soil environment monitoring requires advanced equipment and instruments to more accurately reflect the current status of the soil environment. Most of the corresponding equipment and instruments are expensive. The soil environment monitoring agencies in many places lack modern equipment, which affects the final monitoring results. . For example, the detection of some harmful substances in the soil requires the use of high-precision instruments. If there is no configuration, the accuracy of the measurement results will be reduced. Essentially, the lack of various equipment and instruments is due to insufficient funds. The government has relatively little investment in this area, so the soil environment monitoring department cannot purchase and update equipment [3].

3.3 Soil Environment Monitoring Technology Needs to Be Improved

There are many high-end technologies for soil environmental monitoring, which can provide strong support for the development of daily monitoring work. However, judging from the actual situation in my country, the technical application of soil environmental monitoring is still relatively narrow, and the overall technical system needs to be improved. In many cases, the monitoring results are not representative. In addition, there is still a problem of improper application of technology in soil environment monitoring. Some instruments and equipment are cash enough, but there are problems with the corresponding use methods. This not only causes a waste of resources, but also affects the accuracy of the monitoring results, which cannot accurately reflect various parameters of soil.

With the continuous improvement of soil environmental monitoring technology, various modern technologies such as 3S technology and Internet technology have been integrated into it, which not only reduces the difficulty of soil environmental monitoring, but also effectively improves the accuracy of monitoring results. However, in specific applications, a reasonable choice must be made, and the most appropriate soil environmental monitoring technology should be selected according to actual needs, so as to effectively improve the quality of soil environmental monitoring.

3.4 Insufficient High-Level Talent Pool

Soil environment monitoring is more complicated, and a variety of modern technologies are applied to it, so higher requirements are placed on practitioners. Judging from the current actual situation, there is still a large gap in the high-level talents of soil environmental testing, and the overall team building is not perfect, so it cannot effectively meet the actual needs. Of course, soil environmental monitoring also requires the experience reserves of practitioners, but there are many shortcomings in the training of talents in relevant departments, which also affect the quality of soil

environmental monitoring to a certain extent. The development of soil environmental monitoring in our country is relatively short, and the talent training of major universities is constantly improving. Therefore, there is a corresponding high-level talent gap in the society [4].

3.5 Lack of Overall Planning

At present, my country's soil environment monitoring system has taken shape, but it lacks unified planning and management, and has not formed a clear standard, so the degree of standardization is relatively low. There are certain differences in soil environmental monitoring standards and procedures between regions, and it is impossible to coordinate management.

The current support for soil environmental monitoring is relatively low, far inferior to water environmental monitoring and atmospheric environmental monitoring. Therefore, in the current soil environmental monitoring, there is still a problem of insufficient pollutant summary. Some water environmental monitoring technologies have not been applied Soil environment monitoring.

4. Measures to Improve the Quality of Soil Environmental Monitoring

It can be seen from the above analysis that there are still many problems in the current soil environment monitoring, which have a direct impact on the quality of the monitoring, and the effect of soil environment monitoring cannot be effectively brought into play. Therefore, in order to effectively protect soil resources, it is necessary to improve the problems of soil environmental monitoring, mainly from the following aspects.

4.1 Improvement of Laws and Regulations

Soil environment monitoring is more complicated, and the authority of the law is needed to ensure the smooth development of various tasks. Therefore, in light of the current actual situation, the state should improve the laws and regulations of soil environmental testing in a targeted manner, clarify the responsibilities and rights of different departments, and at the same time refine the indicators of various tasks to establish a complete soil environmental monitoring system. In addition, the laws and regulations on soil environmental monitoring should be enforced more severely, and illegal behaviors should be dealt with seriously, and people's awareness should be strengthened to avoid the problem of affecting the quality of soil environmental monitoring due to human factors.

The improvement of soil environmental monitoring laws and regulations can learn from the experience of western developed countries, clarify various detailed rules, and form a unified standard, so that overall planning can be made to lay the foundation for improving the quality of soil environmental monitoring. Judging from the current actual situation, soil environmental monitoring laws should also strengthen supervision, supervise the processes and results of various work, form a complete system, and effectively play the role of soil environmental monitoring [5].

4.2 Increase Capital Investment

Soil environment monitoring requires all kinds of advanced instruments and equipment. Therefore, relevant departments must increase capital investment to avoid the problem of inability to configure equipment due to insufficient funds. In this regard, local governments should refine expenditures and increase support for equipment purchase and maintenance. In addition, a special fund for soil environmental monitoring can also be established to reduce financial pressure and ensure the smooth development of various tasks.

Environmental monitoring is not lack of profitability. In order to ensure the diversification of funds, the soil environmental monitoring department can also be open to the society and provide environmental soil monitoring services for social enterprises or individuals based on social needs, and at the same time collect corresponding remuneration. In this way, not only can the source of funds be increased, but also the utilization rate of the equipment can be effectively improved. In addition, the use of market-oriented models can also effectively train employees and enrich their experience.

4.3 Reasonable Application of Soil Environmental Monitoring Technology

Soil environment monitoring technology should be selected reasonably. On the one hand, modern technology can be integrated into it, and on the other hand, innovation can be combined with actual needs, so that it can effectively meet the different needs of various places. Especially for the current high-speed network, soil environmental monitoring can be closely integrated with network technology to establish a real-time monitoring system, fundamentally change the process of soil environmental monitoring, and further enhance the early warning capabilities of soil environmental monitoring.

In soil environmental monitoring, GPS technology, GIS technology and RS technology play an important role, which can effectively improve the efficiency of soil environmental monitoring and increase the coverage of soil environmental monitoring. Therefore, it is necessary to continuously increase the support for technical research and development in the subsequent soil environment testing, and establish an information-based soil environment monitoring system to create a dynamic and online soil environment monitoring system.

4.4 Improve the Ability of Staff

Soil environment monitoring has high requirements for the staff's ability, so training should be carried out in line with the development of the times, and various lectures should be held regularly to improve the staff's business ability. First of all, when recruiting personnel, it is necessary to raise requirements and strictly control to ensure that recruiters can meet the needs of follow-up work. Secondly, regular training is required in daily work to analyze the problems in the work and clarify the direction of improvement. Of course, the corresponding training needs to include the use and maintenance of equipment, so that the staff can grow into unique talents.

The soil environment monitoring mostly uses modern instruments and equipment, so in order to promote the growth of staff, we can also cooperate with universities to conduct technology research and development. In addition, the corresponding positions also allow university students to practice internships to promote theory and practice the combination. Of course, talents can also be found in cooperation with universities, and at the same time, excellent talents can be retained with the help of salary and benefits to lay the foundation for the development of soil environmental testing and quality assurance.

4.5 Overall Development

Overall development is conducive to the establishment of unified standards, the integration of resource universities, and the improvement of the quality of soil environmental monitoring. In this regard, we must first create a technology-integrated system that includes quality evaluation and monitoring methods to form a unified development, so as to avoid the quality of soil environmental monitoring caused by regional differences.

In order to achieve overall development, we can learn from the experience of western developed countries to a certain extent, plan in stages, continuously expand new working mechanisms, strengthen quality control, and continue to promote the improvement of soil environmental monitoring. Of course, the government must increase support in this regard, clarify the understanding of the importance of soil environmental monitoring, and provide corresponding technical, policy, and financial support to lay the foundation for the improvement of soil environmental monitoring. For example, soil environmental monitoring should be placed on the same status as water area monitoring and atmospheric environmental monitoring to enhance the awareness of relevant personnel, so as to promote the overall development of soil environmental monitoring [6].

5. Conclusion

Soil environment monitoring plays an important role in the protection of soil resources. It not only reduces the damage to the ecological environment, but also benefits people's health. Judging

from the current actual situation, there are still certain problems in soil environmental monitoring in my country, which are mainly manifested in imperfect laws and regulations, insufficient funds, improper technology application, lack of high-end talents and insufficient overall planning. In response to these problems, this article proposes five measures to improve laws and regulations, increase capital investment, rational application of soil environmental monitoring technology, improve staff capabilities, and coordinate development. It is hoped that this can provide certain reference opinions for the improvement and perfection of soil environmental monitoring in my country.

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