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Study on the Countermeasure of Rural Environmental Pollution Control System

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***Abstract*—With the development of the economy, environmental pollution has become the focus of people's attention. The treatment of environmental pollution, especially the governance of the rural environment, has become an urgent problem. Based on the viewpoints and methods of system theory, this paper proposes: "Macro control, multiple ideas, construction mechanism according to the analysis of rural environmental pollution system and its structural model, rural environmental pollution control system and its control model, and the complex characteristics of rural environmental pollution control system. , stable and orderly, early warning feedback, the macro-control measures, in order to provide a clear idea for rural environmental pollution control.**

Keywords—rural; environmental pollution; systems; governance; countermeasure

I. The State of Environmental Pollution in Rural Areas and Its Research Status

Along with economic development, the state, society and people pay more and more attention to environmental problems, especially rural environmental pollution has become more and more people's concern. Environmental pollution in rural areas is hidden, difficult to detect, and difficult to clean up. The situation of environmental pollution in rural areas varies from place to place. The government pays different attention to environmental pollution, plus the differences in economic, cultural, geographical conditions and climate between regions. It is difficult to form a systematic governance model, which makes rural environmental pollution more and more a matter of concern and urgent need to be solved.

There are many researches on rural environmental pollution at home and abroad. Rachel. Carson published his book "Silent Spring" in 1962, describing the harm of pesticide preparation to the environment [1]. Van Liere K D (1980) and deeply studying the social causes of environmental pollution in rural areas [2]. Shafik (1994) studied the U-shaped curve of the relationship between economy and environment, that is, environmental pollution can be rapid economic growth at first, with the economic development to a certain extent, environmental pollution will affect the economic growth rate [3]. Ranran Li (2018) in this paper, an early warning framework based on the two modules of prediction and evaluation is proposed. The prediction part is applied to the hybrid optimization model of improved harmony search algorithm and PSO strategy to predict the concentration of air pollutants. At the same time, the evaluation part is applied to the fuzzy comprehensive evaluation model of entropy weight to evaluate the level of air quality, which provides a new idea for environmental pollution assessment and early warning [4]. XinWei (2007) investigated the environmental pollution and its causes in rural settlements [5]. Ping Xiao and Guohua Zhu (2014) studied the defects and shortcomings of the monolithic governance model of the government, and suggested that the government could use the government as a village. The committee takes the participation of villagers, economy, enterprises and social organizations to construct the rural environmental governance system for the main body of comprehensive control of rural environmental pollution [6].

However, there are few achievements in the study of rural environmental pollution by using system theory. For example, Yiming Wu, Libing Zhang (2000) studiedWang the dynamic process of environmental impact factors by using system dynamics and GIS [7]. Yutian Wang (2003) discusses the social environment and social pollution by using complex systems, and thinks that using complex systems can better understand the functions and behaviors of social systems, which is an innovation from the perspective of thinking. To study the problem in greater depth [8]. Lianhai Cao (2010) regarded the rural ecological environment as a system by using systematic thinking, and constructed the index body of rural environment by the Analytic hierarchy process (AHP). The index weight is calculated by principal component analysis (PCA) method, and a five-level grading standard is designed to evaluate it [9].

II. Study on the Complex Characteristic of Rural Environmental Pollution and Its Countermeasure

For the study of rural environmental pollution, we have constructed the rural environmental pollution system and the rural environmental pollution control system from the systematic thinking. The whole system is composed of the pollution subsystems which are interrelated and different from each other. The exchange of material, energy and information among the subsystems has formed the complex characteristics and complex relations of the rural environmental pollution control system. Rural environmental pollution system and rural environmental pollution control system have the complex characteristics of emergence, diversity, stability, openness, chaos, non-linearity, synergy, self-organization and their complex relations. The relationship between these complex characteristics and each complex characteristic determines the

construction and selection of countermeasures for rural environmental pollution control.

A. Analysis on Complex Relationship of Environmental Pollution Control System in Rural Areas

The rural environmental pollution control system is composed of four subsystems which are interrelated and different from each other. The relationship between each subsystem is transitive. The former subsystem provides the precondition for the latter subsystem. Based on the data provided by the former subsystem, a new conclusion is obtained and the conclusion is provided to the next subsystem. Pollution control analysis is the premise and foundation of rural environmental pollution control system, which provides data and information support for the whole system, and pollution control planning is the action plan of rural environmental pollution control system. Pollution control is the core and key of rural environmental pollution control system, and the whole system revolves around the control of rural environmental pollution. Pollution early warning feedback is the alarm of the rural environmental pollution control system. It can provide timely feedback and early warning for the system to reduce the stability of the system entropy maintenance system.

III. Research and Analysis on the Countermeasures of Constructing Rural Environmental Pollution Control System

Through the analysis, construction and research process of rural environmental pollution and treatment in China, we can see that it is a complex system engineering, and the main contradiction of rural environmental pollution and treatment is: pollution control and economic development. Pollution control and environmental resources, pollution control and farmers demand these three sets of contradictions. According to the analysis of the complex characteristics of rural environmental pollution control system, rural environmental pollution system and its structural model, rural environmental pollution control system and its control model, this section puts forward "macro-grasp, multi-thinking, stable and orderly, and build mechanism" by using the system thinking. The strategy of early warning and feedback.

A. Pay Attention to the Emergence of the Whole, Make the MacroPlanning and Design Well at an Early Stage

For the rural environmental pollution treatment, the government should treat the rural environmental pollution control system as a whole, look for a holistic and universal solution, and carry out macro planning and overall design.First of all, environmental pollution is not caused in one day, nor can it be achieved overnight.For the development of environmental pollution control in rural areas, we should consider the situation of the whole environment, and have a deep understanding of the rural environment, economy, policy, law, and farmers' acceptance, so that environmental pollution control can continue to develop in the economy. The people live and work in peace and contentment, the range of social affordability and the controllable range of environmental carrying capacity can be effectively controlled;Secondly, it is necessary to consider the energy conversion process and relationship control between the elements, organizations and systems of environmental pollution control system, so as to make the emergence of the whole system prominent, and promote the rural environmental pollution control can achieve twice the result with half the effort.

B. Grasp the Diversity of Differences, Distinguish the Characteristics of Different Levels, and Make Feasible Plans

There are differences among the complex and diverse individuals of rural environmental pollution. The sources of the diversity are mainly composed of the following aspects: first, the rural economic development in different regions of China is different. The impact of economic development and industrial structure on rural environmental pollution is also different;Secondly, the differences of longitude and latitude, topography and climate in rural areas may cause different pollution conditions.For example, the severe haze weather in Hebei is not only caused by pollution emissions, but also by its topography and climate.Thirdly, different social conditions in different regions also affect the situation of environmental pollution treatment in rural areas. The quality of rural residents and the degree of environmental protection recognition are the factors that affect the environmental pollution treatment.Finally, the government's enforcement of environmental protection policies and the importance of environmental pollution affect the rural environmental pollution control.This requires us to distinguish the levels of rural environmental pollution, to adopt various ways and ideas to control environmental pollution, and to analyze the specific problems of rural environmental pollution in various regions when we carry out the treatment of rural environmental pollution again. Take the difference of "combined boxing", the implementation of diversified ideas of governance.Adopting a single way to control the rural environmental pollution can not only control the environmental pollution, but also waste the people's money and the effect is counterproductive.

C. Keep Open and Stable, Learn to Be Eclectic and Promote Orderly Governance

The process of environmental pollution control in rural areas is open, and it constantly exchanges with the external environment the nature and function of material, energy, information, and functions. It only distinguishes the similarities and differences in the treatment of rural environmental pollution in different regions. According to the changes of environmental pollution, economic development, government support, rural environmental policy, farmers' quality, and so on, the adaptability of environmental pollution control can be absorbed and grasped. So that rural environmental pollution control measures can be adapted to local conditions.Secondly, we should grasp the open degree of the system to make the system stable, harmonious and healthy development. For the development of environmental pollution control in rural areas, the order parameters should grasp the relationship between opening and stability, coordinate the function of pollution control analysis, pollution control planning, pollution control

and pollution feedback warning. To promote the rural environmental pollution control work in a scientific and orderly manner.

D. Guiding Cooperation and Self-organization, Establishing Governance Mechanism and Activating Internalization Function

Every element of environmental pollution control in rural areas, the relationship between each subsystem is complicated and diverse, it is necessary to deal well with the relationship among the economic, environmental and environmental protection organizations and seize the main contradiction, and at the same time actively play the leading role of the order parameter. Grasp the degree of environmental pollution control in rural areas and put forward scientific and reasonable policies and measures;At the same time, the self-creation, self-derivation, self-replication and self-adaptation of rural environmental pollution control system are constantly made to guide the rural environment to realize cooperative self-organization.On this basis, the information of environmental pollution and its treatment is exchanged and processed, which is considered and marked as an important factor affecting the evolution of the system, and the concrete realization method of searching and receiving information in the environment of rural environmental pollution control system is put forward. Then through the internal model and building blocks to construct the rural environmental pollution control system level, finally the macro and micro organic links, so that the rural environmental pollution control system and its environmental interaction. The change of individual becomes the basis of the change of the whole system, the unified investigation, the establishment of the rural environmental pollution control mechanism, and the activation of the internalization function between each element and each subsystem.

E. Focus on Chaos and Nonlinearity, Objective Evaluation and Analysis, Timely Early Warning Feedback

The rural environmental pollution control system is a complex system. It is not difficult to find its chaos and its nonlinearity in the research process, facing the chaos and its nonlinearity of the rural environmental pollution control system. We must solve the problem with the methodology of complex system, treat chaos as chaos, treat nonlinearity as nonlinear, change and develop the rural environmental pollution control system, and observe the situation of rural environmental pollution carefully.In view of the evaluation work of rural environmental pollution, we should constantly improve and cultivate objective and fair environmental protection assessment institutions, and carry out scientific and reasonable design for the evaluation of rural environmental pollution control work. According to the structure and function of each element and subsystem, we can make perfect environmental protection evaluation index and construct a professional rural environmental pollution assessment system. At the same time, we can collect the data by using the existing yearbook statistics, questionnaire and symposia, etc. Then select effective evaluation methods for objective, scientific and reasonable evaluation. Establish feedback early warning mechanism according to evaluation, timely feedback and prediction for abnormal conditions, see through the phenomenon of the development of things Laws, timely grasp the changes of rural environmental pollution and change, with its state adjustment and adjustment.

IV. CONCLUSIONS

For the study of rural environmental pollution, we have constructed the rural environmental pollution system and the rural environmental pollution control system from the perspective of systematic thinking. These two subsystems are interrelated and different. The exchange of material, energy and information among their systems and within the system has formed the complex characteristics and complex relations of the rural environmental pollution control system. This paper mainly elaborates on its complex characteristics and relations, and puts forward corresponding countermeasures according to the complex characteristics and relations among various systems of rural environmental pollution control system.

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