

## Analysis of rural environmental pollution treatment status and countermeasures

Meng Qi<sup>1, a</sup>

<sup>1</sup>Law Department of Sichuan Agricultural University, Sichuan, China, 625014

<sup>a</sup>284188214@qq.com

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**Abstract.** With the rapid development of rural economy, rural construction and production level has made great progress, which is heading towards industrialization and urbanization. However, along with the fast economic development, the rural environmental quality is deteriorating. Currently, the rural environmental issues have become increasingly prominent, greatly hindering rural development. Against the backdrop of socialist new countryside construction, rural environmental pollution treatment has been put on the agenda. Efficient treatment countermeasures should be adopted to effectively alleviate the current environmental pollution status.

### Introduction

The root cause of worsening rural pollution should be found out. If environmental pollution remains unsolved, its negative influence will be aggravated in the future, which will, on the one hand, impede rural economic construction progress; on the other hand, do a great harm to physical health of rural residents. To enhance rural ecological environment construction and pollution prevention can ensure safety of agricultural products, create a favorable production and living environment for various rural residents, and maintain sustainable development of rural economy and society.

### Problems facing rural environmental pollution treatment

**Lack of environmental protection awareness.** Livestock pollution, chemical fertilizer and pesticide application, domestic sewage and plastic agricultural film are major sources of rural environmental pollution. During the rural production process, due to lack of environmental protection awareness, environment-polluting factors are often ignored. Rural residents often focus on output of agricultural output but give little care to quality and safety of these agricultural products. Improper application of fertilizers and pesticides fail to efficiently promote growth of crops. Worse still, it gives rise to lots of drug residues, pollutes the surrounding environment and does harm to physical health of residents. Besides, the random discharge of domestic sewage is also a major cause for water contamination in the rural area. Many rural residents lack a good understanding of environmental protection. Coupled with lack of a complete sewage drainage system, domestic rubbish and other rural solid waste cannot be treated in a unified way, but directly discharged to the ground surface, rivers or ditches. Therefore, in order to improve the rural environmental pollution treatment effects, it is necessary to strengthen public and education of environmental protection among rural residents so as to sharpen their awareness of environmental protection and make them better cooperate with the rural environmental pollution treatment [1]. Fig. 1 shows the domestic rubbish treatment situations of a rural area:



Fig. 1 Domestic rubbish treatment situations of a rural area

**Mutual separation between the breeding industry and the planting industry.** As the breeding industry keeps expanding in scale, intensification and professionalization has become an important development direction and trend for it. However, the breeding industry gradually separates itself from the planting industry, thus leading to increase of livestock excrements. The farmyard manure just accounts for a small proportion, and starts separating itself from the coordinated model of planting and breeding. As a result, livestock pollution worsens. During the livestock breeding and the aquaculture process, increasing fertilizers and drugs used, especially refined baits for aquaculture, can easily flow to rivers, causing water pollution. Some rural residents lack a good understanding in this aspect, so they blindly seek production output and break the traditional agricultural pattern. The mutual separation between the breeding industry and the planting industry is unfavorable for the development of respective industry.

**Poor supervision capability.** The supervision capacity of rural environmental pollution calls for further improvement. Environmental monitoring techniques such as air quality monitoring, soil monitoring and water quality monitoring are backward. Technical talents are badly in need. The backward environmental-protection facility construction and the ambiguity of pollutant discharge standards and quality test standards bring great difficulties to environmental pollution treatment [2].

### **Re-thinking on rural environmental pollution treatment**

**Enhance environmental protection publicity and education.** Rural environmental pollution treatment is not only a duty of the environmental protection departments, but also a shared responsibility and obligation of all rural residents. Everyone should contribute his/her share to rural environmental protection. Environmental protection publicity and education is an important part of rural environmental pollution prevention and treatment. The authorities can mobilize rural residents and participate in environmental protection education through Internet, TV, newspapers and other media. In this way, rural residents can improve their awareness of environmental protection, and realize the important significance of environmental protection to their production and life. To enhance environmental protection publicity and science popularization education, encourage rural residents to actively learn knowledge related to ecological environmental protection, learn national environmental protection policies and status of current environmental pollution treatment and create a favorable ecological protection atmosphere can lay a solid mass basis for rural environmental pollution treatment [3].

**Improve the environmental monitoring technical level.** Enhance rural environmental protection facility construction and introduce advanced techniques to improve rural environmental monitoring technical level; realize automatic monitoring, expand monitoring scope and scale to increase accuracy of monitoring results; apply information techniques, network techniques and satellite remote techniques for online monitoring so as to achieve real-time update of environmental monitoring data and send the updated data to environmental protection departments of a higher level, which can adopt targeted treatment countermeasures, enhance environmental pollution early warning and make rural environmental protection more reasonable and scientific.

Clarify rural environmental pollution treatment objectives and responsibilities; urge rural local governments and leaders to carefully perform their duties and attach great importance to environmental protection; build a better environmental monitoring network and clarify the rural environmental monitoring technical route; build a more complete environmental monitoring network; clarify pollutant discharge standards and quality test standards; bring up professional talents and purchase advanced instruments and techniques; get capital support from relevant national departments to comprehensively improve the environmental monitoring technical level.

**Comprehensive improvement of the rural environment.** The husbandry is the major economic industry for villages. Soil and water resources are the foundation to support agricultural development, and an important part of rural environmental protection. If soil resources are polluted, rural development will be directly influenced and crops cannot survive on the polluted soil environment. Water pollution will not only influence the growth of crops, but also threaten drinking water safety of rural residents. The ecological agriculture can be developed so as to enhance the correlation between the breeding industry and the planting industry. Process livestock excrements into fertilizers, and conduct marsh gas treatment of the remaining fertilizers to get fuel energy, reduce the burning of straws and efficiently alleviate the problem of air pollution [4]. Fig. 2 shows the recycling and harmless treatment process of solid waste:

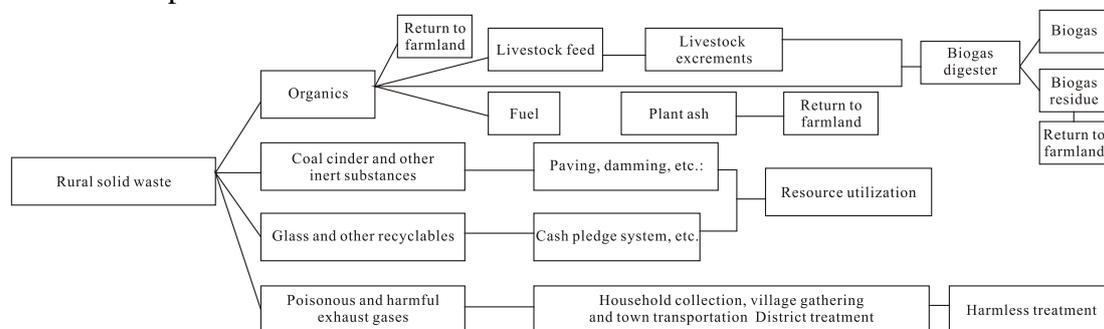


Fig. 2: Solid waste recycling and harmless treatment process

Clear sludge and flottage in rivers, enhance water source protection and discharge industrial waste water after unified treatment of it in the sewage discharge system; concentrate on treating domestic sewage and improve water quality so as to guarantee drinking water safety of rural residents; efficiently treat domestic rubbish, build rubbish treatment stations, classify and recycle rubbish and use it for different purchases according to its characteristics. (See Fig. 3)

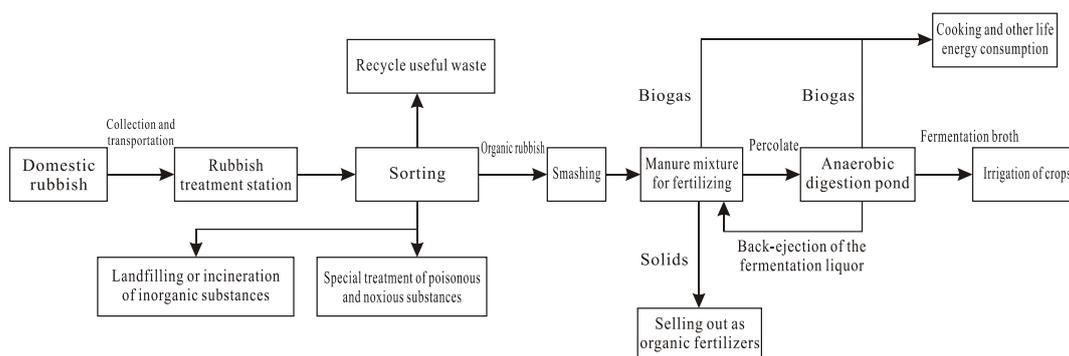


Fig. 3: Domestic rubbish disposal countermeasures

Major rural environmental pollution issues come from industrial pollution, livestock and aquaculture pollution and domestic waste of residents. Rural environmental pollution treatment shall proceed from the following aspects, namely strictly controlling industrial waste discharge, concentrate on handling domestic rubbish and avoiding soil pollution, so as to improve water quality.

## Conclusions

To build a resource-conserving and environmental-friendly society is an important objective of construction of socialist new countryside. Pollution treatment should be on the top agenda. Environmental protection education should be enhanced and the environmental monitoring technical level should be improved so as to achieve comprehensive treatment of the rural environment. Rural residents can work together to contribute their share to the environmental protection undertaking, improve the rural environment quality, create a harmonious, wonderful and safe production and living environment and provide support and guarantee for sustainable development of rural economy, society and agriculture.

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