

Rural garbage problems and solution

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Abstract

Based on the fact that there is a large number of agricultural population in China and that we are in the period of agricultural transition, and rural garbage problems are one of the most serious. To come up with a possible solution for this national condition, this article takes the Zhengding county for example in seeking solutions.

Keyword

Current situation;perniciousness;3R principle

1. Rural garbage collection and treating processes in comparison to cities' and its shortcomings.

In Shi Jiazhuang city Zheng Ding county' nearby villages, it is not difficult to find that the villages lack of environmental sanitation facilities, and we can see trash and all kinds of garbage by the river and in the fields. Even if there is a trash can or a place for garbage to pile up, rural residents will habitually dump garbage everywhere accounting for convenience. To some extent, it is a widespread phenomenon to see streets and houses surrounded by garbage.

At the same time, with the development of crop farming and breeding industry, there will be more excrement and straw. 'As is estimated, now the amount of excrement of all the rural residents is 2.6×10^9 tons, and the total amount of excrement of livestock in rural areas is 2.7×10^9 tons. The amount of straw is about 0.7×10^9 tons'. [1] Over 90 percent of rubbish can be dealt with in cities, while only 50 percent can be dealt with in rural areas. Rural areas have much lower ability and a more serious current situation than cities.

According to whether the garbage is useful or not, the garbage can be divided into recyclable garbage and unrecyclable garbage. Recyclable garbage refers to the ones that can be reused again, such as stationary, waste furniture, home appliances, cloth, some metal articles for use. 'Unrecyclable garbage refers to the garbage difficult to dissolve in natural conditions and cannot be used for secondary decomposition, ranking waste battery, cosmetics and plastic products first'[2].Secondly, the garbage can be divided into harmful garbage and non-harmful garbage according to the influence on the environment. Harmful garbage refer to the garbage that can do

harm to human health or the natural environment, including expired drugs, pesticides, abandoned modulator tube. Non-harmful rubbish mostly consists of compostable rubbish, which can dissolve and be made into fertilizer, such as vegetable leaves, fur and leftovers etc, and it also include crop straw, branches and flowers.

According to data, the average amount per rural person per day's garbage is 0.86 kilograms, the quantity of refuse is nearly 0.3 billion tons nationwide, 30 percent of which is caused by rural residents' throwing rubbish at will. 'In the past 10 years, our country's agricultural acreage decreased from 0.128 billion hectares to 0.122 billion hectares, and 133 thousand were wasted because of stacking, refuse landfill accounts for 50 thousand hectares'[3]. The wrong doing of dealing with rural rubbish leads to serious resource problem.

In some developed areas in China, their current situation of refuse disposal is quite the opposite, they have established scientific management mechanism. They can unitively put the collection, transportation and treating processes into effort. The typical one is the integrative pattern of household collection, village concentration, transportation in town, and centralized processing in county.

Even though there are common points between rural household waste and urban household waste. Rural household waste has its specificity. The specific comparison between rural garbage and urban garbage is followed.

The comparison between rural household garbage and urban household garbage: 'The amount of urban household garbage is larger than that of rural household garbage, and even though rural household garbage increases more slowly than urban household garbage, rural household garbage appears more dispersive, thus making it difficult to collect'[4]. Urban household garbage mostly consists of inorganic substance, food waste of organic refuse and scrap accounting for the most, while rural household garbage mostly consists of organic refuse, more inorganic refuse, but less scrap. What's more, urban household garbage needs to be recycled more often, because rural household garbage can be dissolved in the fields, which is what most rural residents often do. The result of rural household garbage is that it often pollutes the environment which is less controlled than that of urban household garbage.

With the development of garbage treating processes, we certainly have made several achievements. 'In Lin Cang city, 95.94 percent of the 960 villages have had effective ways to collect

and deal with rubbish. Of the 7544 communities, 7418 communities established scientific system of garbage collection and transportation, 3422 communities can set up sanitary landfill.[5]’ However, there are still many difficulties:

Firstly, rural garbage enters the city and increases the burden of urban garbage disposal. Much rural garbage was transported to city landfill, others are burned at the edge of the city, which has forced some cities to set up new facilities. ‘For instance, In Guangxi Zhuang Autonomous Region, over 90 percent of all the villages have the ability to collect and transport garbage, while some cities’ landfill cannot support the need to deal with garbage, so the government plans to set up 138 landfills before 2020. In Hebei province Qianan city, the government has established nine landfills since 2009, and in the past eight years, four landfills have been used up.’[6]

Secondly, the governments lack of money to keep the garbage treating processes in good condition, the system which has been set up is difficult to be put into effect. ‘The area of He Bei province Qian xi city are 1439 square kilometers, and there are 200 thousand rural residents.’[7] Because there is not enough money, workers do not work actively and some facilities are not repaired in time. Some landfills that have been established cannot work nowadays.

Thirdly, the rules and regulations are not perfect. ‘The 《Law of the People’s Republic of China on Prevention and Control of Environmental pollution by Solid Waste》 in 1995 focuses on urban garbage disposal, without putting rural garbage in the whole garbage management system.’[8] Although the one revised in 2005 increases some points on how to deal with straw and excrement and asked the government to pay attention to rural garbage, our country still does not have a law that concentrates on it.

2. Environmental pollution and damage caused by disorderly and littering garbage.

Through the investigation to Zhengding County and its nearby countryside, it was found that this disorderly and littering garbage had a great influence on the lives of villagers. The specific aspects are :

1)Pollute the natural environment of the countryside and affect on the appearance of the village. The garbage dumps that are not handled by special personnel caused large-scale odors of mosquito breeding and decay, because of a large variety of garbage, long stacking time, and almost no environmental protection measures and anti-seepage measures.

2)The toxic substances from the garbage are immersed in the farmland, causing damage to the

farmland. Large areas of farmland environment is very scarce due to the garbage dumps in the countryside. Because there are many heavy metal elements in the garbage, some of them cause damage to the land, such as copper, chromium, nickel and other elements. At the same time, the garbage also contains many harmful compounds, the characteristics of some are toxic, they can erode crops directly. Rural garbage pollutes the soil seriously in rural China and affects the quality of many fine soils.

3) Toxic substances and garbage itself enter into the water, causing pollution to the river. Rivers are treated as waste sites for waste water and domestic garbage. The garbage thrown away by people has accumulated in rivers and ponds for many years, and even caused the phenomenon of flies and rodents, which not only pollute the environment, bring various infectious diseases and toxic bacteria easily, but also causes disasters to kill aquatic organisms like fish in the river. On the one hand, some substances in the garbage are dissolved in water, which reduces the solubility of free oxygen in the water, resulting in the death of fish. On the other hand, toxic substances can also pose a huge threat to fish. In the long run, garbage has caused a lot of pollution and damage to rivers and groundwater in rural areas. Moreover, if there is a place where rivers flow, there will be rural residents who put garbage in it, and the water quality and future development of the river are worrying.

4) It will pollute the air environment. The dumping garbage center in rural areas will also pollute the air quality of rural areas anytime and anywhere, especially in the garbage dumps and some nitrogen oxides and sulfur oxides will also be discharged into the air, they will affect the living environment of rural residents.

5) Threat to the physical health of rural residents. The unreasonable stacking treatment of rural garbage seems to be far away from people's health, but in fact it is subtly becoming the invisible killer of rural residents' health. Including the enrichment of toxic substances, and toxic substances enter into the fish body through garbage, they even finally enter the body of the human through the food chain and gradually accumulate, eventually causing disease and even death. In addition, mosquitoes and rodents can cause infectious disease and make rural residents feel miserable.

三. The specific solution towards rural garbage problems.

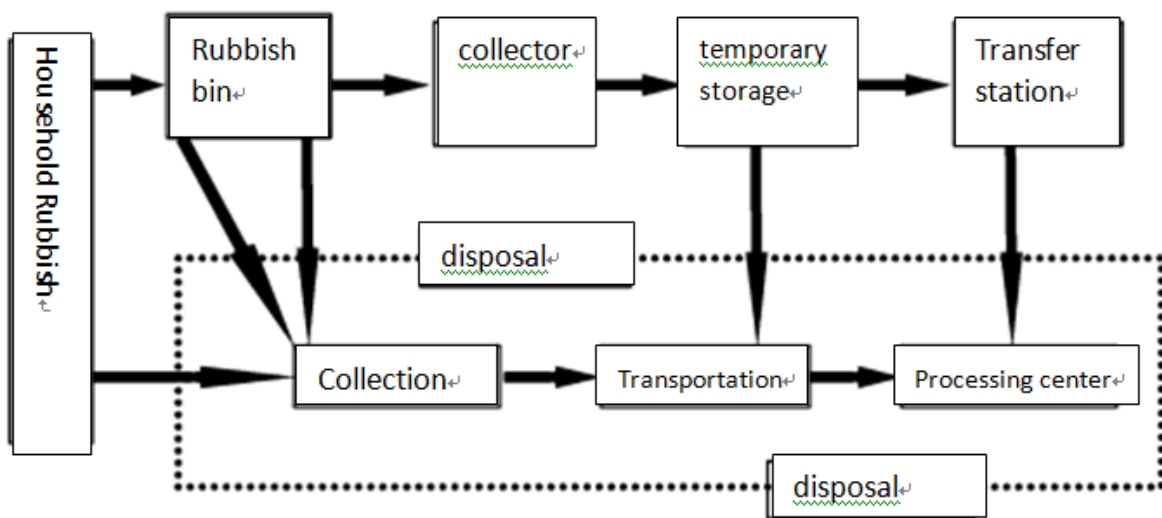
As far as the current status of rural waste is concerned, the improvement of rural waste can be achieved from the following points:

1) Increase the number of rural garbage cans. In the process of field visits, it can be found that the

number of garbage bins in rural areas is small and the distribution is extremely uneven. In most cases, the garbage bins are concentrated in rural areas relative to the bustling market. There are a few trash cans near residents' homes. Moreover, the location of the trash should be more reasonable. For example, it should be placed next to the main road in rural areas, and about 4 to 5 farm households should share a garbage bin, which is suitable for the needs of rural residents.

2) Arrange someone to recycle rubbish regularly. There should be a special person collecting garbage every three to five days, mainly dealing with the garbage bin next to the rural main road, and sending it to a fixed location for disposal. In addition, arrange a worker to recycle domestic waste. Rural residents could accept it because of the value of some domestic waste, thereby reducing the phenomenon of littering.

3) Enhance the awareness of garbage classification and environmental protection among rural residents through regular garbage collection. Because of the fixed garbage bins and regular garbage collection education, people could obtain garbage classification knowledge and carry out. In the specific classification situation, rural residents know what kind of garbage has the value of recycling, what kind of garbage doesn't, what kind of garbage is harmful to the environment and people health, and what kind of garbage does not. In the process of regularly classifying rural residents to hand over garbage, they actually join in the process of environmental protection.



[9]

4) Government should devote more resources to rural garbage disposal. ‘《Yanzhao Metropolis Daily》 once reported that Shi Jiazhuang tried to collect a domestic waste treatment fee, the government

expected to collect 10 million yuan a year but ended up collecting 3.78million yuan, 2.67million yuan, 2.27 million yuan and 2.33million yuan over four years'[10], far from being enough. No wonder there is always garbage waiting to be disposed. So the government should devote more money to pay for it.

5) The garbage disposal facilities should be improved. 'According to the Second National Agricultural Census, of all the 0.6million villages, only 15.8 percent can deal with the rubbish concentrately, 1.6 percent have the facilities to deal with the excrements of livestock without much harm, 33.5 percent have biogas digester.'[11] Lacking facilities has decreased the ability to deal with rubbish.

6) Choosing the correct garbage to be burned. The calorific value of garbage determines whether the garbage can be burned at an economic cost. 'According to Li Ying's research on the calorific value of rural household garbage, when the calorific value of rural household garbage is lower than 3350kJ/kg, the combustion is not self-sustaining. However, unrecyclable garbage like textile fabrics and plastic's calorific value is quite high, it can reach 12200 kJ/kg,'[12] accumulating then burning them will be a good idea.

Conclusion

The rural areas represented by Zhengding County have problems in the classification of wastes. However, with the development of China's ecological civilization and the new country construction, the rural garbage problem will be effectively solved in the future. The rural area of China will be more beautiful.

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Reference

- [1] Wang Jun: Present Situation and Improvement Solutions of Waste Classification Problems in the Rural Area of China. Accessed 1 June 2019.
- [2] Wang Jun: Present Situation and Improvement Solutions of Waste Classification Problems in the Rural Area of China. Accessed 3 June 2019.
- [3] Liu Jie: The current situation and solution of rural household garbage. Accessed 7 June 2019.
- [4] Guan Dongxing, Qiu Cheng: Preliminary Research of the Situation and Countermeasures of Pollution of Rural Domestic Garbage. Accessed 9 June 2019.
- [5] The website of Lin Cang's building and construction authority.
Available from : <http://www.lincang.gov.cn/lcsrcmzf/14997/index.html> Accessed 10 June 2019.
- [6] Dong Xuhui, Jia Xiaomei, Chen Ying, Wang Yanan: To solve the rural household garbage problem by classifying and reducing the amount. Accessed 12 June 2019.
- [7] Dong Xuhui, Jia Xiaomei, Chen Ying, Wang Yanan: To solve the rural household garbage problem by classifying and reducing the amount. Accessed 13 June 2019.
- [8] Shang Xiaobo, Zhang Chaosheng, Rong Hongwei, Zhang Kefang, Zhang Yingmin, Li Kaimin, Cai Meifang: China's rural household garbage problem and solutions. Accessed 15 June 2019.
- [9] Zhao Jingwei, Zhao Rui, He Yanfang, Wang sen, An Qinqin: Rural Domestic Garbage Processing Pattern Based on the Principle of 3 R. Accessed 23 June 2019.
- [10] Geng Yanli, Wang Baodao, Li Sufeng, Li Fengshan, Gao Xiaoxia: Rural garbage problem in the new socialist countryside construction. Accessed 30 June 2019.
- [11] Liu Jie: The current situation and solution of rural household garbage. Accessed 1 July 2019.
- [12] Qiao Qicheng, Gu Weibing, Hua Hairong, Shi Yifei, Yin Honghua: Rural household rubbish's current situation in Nan Tong city and its solution. Accessed 2 July 2019.