



Discussion on the Way to Break the Situation of Resource Utilization of Chinese Rural Construction Waste

Junwei Zhang^{a*}, Shuai Liu^b, Yixuan Ge^c, Yvhai Miao^d, Yvhao Liu^c

City Institute, Dalian University of Technology, Da Lian, Liao Ning, China

^{a*}z1554246293@163.com; ^bsdyx11618@mail.dlut.edu.cn;
^c22199076081@qq.com; ^d3495600253@qq.com;
^e43072559613@qq.com

Abstract. With the rapid advancement of China's new rural construction and urbanization, the scale of our infrastructure has developed to an unprecedented situation, and the people's material standard of living has reached a previously unheard of height. But at the same time we enjoy the convenience, the countryside is also plagued by construction waste discharge disorder with the improvement of rural housing to bring some negative impacts seriously affect our ecological environment. Only a good ecological environment country can come true high-quality development.

Keywords: Public Management, Public Service, Recycling of Construction Waste

1 Introduction

This dissertation is based on the various chaos caused by the current resource utilization of rural construction waste in China, and proposes solutions to the various phenomena encountered in reality.

2 First, the source of rural construction waste and the current situation

The transfer of construction waste generated by individual villagers' alteration, new construction, extension, decoration, renovation of houses and urbanization infrastructure construction is the main source of construction waste in the countryside. According to the data of the Ministry of Housing and Construction, China's annual production of construction waste from 2019 to 2022 is still on the rise as a whole, and it is expected that China's annual production of construction waste will be maintained at more than 2.2 billion tons after 2023. So we urgently need to build more construction waste disposal centers to relieve the pressure of construction waste on our ecological environment.

© The Author(s) 2023

H. Kassim et al. (eds.), *Proceedings of the 2023 8th International Conference on Modern Management and Education Technology (MMET 2023)*, Advances in Social Science, Education and Humanities Research 798, https://doi.org/10.2991/978-2-38476-146-3_6

3 Second, the disposal of construction waste in the countryside has problems in the following aspects

3.1 The concept of resourceful and harmless treatment of construction waste is not in place.

The lack of suitable construction waste storage point leads to rural construction waste directly pushed into the arable land or river serious pollution of the ecological environment. For example, in Xinfu District, Xinzhou, Shentou Village, construction waste clogging the river, the ancestors rely on the survival of the irrigated farmland of the Taojin River has been film, cement blocks, stones, bricks and other construction waste landfill, and along the field paths and see a piece of open land filled with garbage. Construction waste such as construction glue, steel wires, nails, paints, glass and so on can damage the fertility of the soil to a certain extent and also pollute water sources. Unreasonable discharge of construction waste has seriously polluted the rural environment, affecting the health of the villagers. Paint, asphalt and other substances released polycyclic aromatic hydrocarbons will contaminate the soil; construction waste dumping process of garbage leachate will be contaminated on the surrounding water bodies, once you drink this contaminated water, the villagers will be irreversible damage to the body; because of the large amount of construction waste lack of management and no place to put, the countryside building less and less usable land use costs will be higher and higher.

At present, the processing capacity of the countryside for construction waste is far behind the processing capacity of the city, and at the same time, the countryside lacks an effective mechanism for the treatment of construction waste, and the residents' concept of the resourceful and harmless treatment of construction waste is not in place, and the relevant concepts have not been constructed yet, and the mechanism of the countryside for the treatment of construction waste is still out of sight and out of mind as long as it is not piled up in the own house, plus the lack of effective preventive supervision, Resourcefulness, harmless treatment awareness. And the province's construction waste resource treatment is still in its infancy, the overall construction waste resource rate is low and the pressure to deal with it is also increasing year by year, there is still a need for policy support and technology research and development.

3.2 There is a lack of reasonable planning from the construction of rural infrastructure to the management of construction waste.

Whether it is the demolition of unauthorized buildings occupying collective land privately, or the buildings left behind by the people relocated from mountainous areas, or the construction waste generated by the construction of resettlement communities, a variety of factors have led to the generation of construction waste in the countryside. Most of the villagers always lack planning when they remodel their houses or build a new house to their satisfaction, and most of the housing projects are full of randomness, while the lack of construction waste discharge sites and the lack of a unified construction waste discharge time bring about confusion in the management of construction

waste in the countryside.^[1] Problems include, but are not limited to, the difficulty of setting up a construction waste treatment plant, the lack of support from the villagers which makes it difficult to put the policy into practice, and the lack of detailed classification of construction waste and production waste due to living habits which makes it difficult for the quality of construction waste in the countryside to be comparable with that of construction waste in the city and makes the market less competitive, and so on. In summary, the above factors have led to the rural construction waste in the collection, classification, market competition, market operation and other aspects are facing problems.

3.3 The development of construction waste enterprises has reached a bottleneck.

Most of the relevant enterprises are to produce aggregate or brick-making as the main revenue project, the enterprise on the one hand deliberately pain over the collection of garbage to earn garbage disposal fees, on the other hand, can also be generated through the sale of garbage resource treatment of products such as engineering slag can be piled mountain landscaping, greening planting, soil restoration, etc.; plastics, metals, etc., can be directly classified recycling; and concrete, crushed brick dregs can be secondary processing become recycled aggregates and other recycled products, and the relevant enterprises have the corresponding government subsidies.^[2] Everything looks good, but in the actual daily production and operation of the enterprise is still facing a lot of problems, like an invisible rope restricting the development of construction waste resource utilization enterprises bound to the survival of construction waste resource utilization enterprises. Xiamen Zhenbang Shunhe Construction Waste and Soil Resources Renewal Disposal Co., Ltd. for example, it is understood that the company's main revenue business for the production of sand and gravel as raw materials for the engineering residue, the design capacity of 550 tons for the whole of Fujian Province's largest enterprises, but in fact, the company's actual amount of construction waste disposal of up to 25 tons of extremely inefficient utilization of production capacity. From point to point, construction waste resource utilization enterprises around the country if there is no financial subsidies and policy support, in fact, are losing money, very few can rely on their own in the market level of business.^[3]

4 Third, strengthen the rural construction waste management to find a solution.

4.1 Ensure the standardization and standardization of construction waste management system in villages, and introduce the advanced management mode of other regions into villages.

According to the distribution of the village reasonable construction of temporary construction waste dumps to improve the efficiency of the temporary construction waste dumps or by the relevant departments regularly collected and transported to a special

construction waste treatment site, to solve the problem of difficult to collect and classify construction waste in the countryside.^[4] Establish a perfect rural construction waste management system, strengthen the promotion of the concept of "green mountains are golden mountains", so that this concept is carried out in everyone's heart, and strengthen the villagers' sense of identity for the utilization of rural construction waste resources. It is recommended that the township government also unite with multiple departments to continue to carry out the relevant construction waste illegal disposal behavior, promote the implementation of various types of special work in order to completely realize the construction waste resourcefulness, environmental friendliness, reduced disposal as the goal. Comprehensively promote the construction of beautiful villages, so that the Peach Blossom Garden no longer exists only in the ancient books.

4.2 Multi-sectoral coordination of governance, to promote "building a beautiful countryside, sharing a better life".

In order to improve the living environment in the countryside, we insist on the "people-oriented" approach to realize the people's aspirations for a better life from paper to reality. All departments should work together to manage the construction waste generated in the countryside to reduce the generation of construction waste at the source, and improve the laws, regulations and the policy system on the management of construction waste in the countryside as soon as possible. Cohesion of the strength of all relevant departments to improve the management of the countryside for the relevant matters and investment. Under the premise of giving full consideration to the interests of farmers, it is difficult to solve the problems of classification, transportation and resource utilization of construction waste in the countryside. The province's relevant policies and local actual conditions to strengthen the promotion of rural construction waste resource utilization related to the landing of agricultural policies to introduce specific implementable programs. For example, the township as a unit to build a reasonable management of rural construction waste platform. With morality and law, the behavior of discharging construction waste is bound, and the management of construction waste in the countryside is regarded as the key content of the assessment of rural construction. It is suggested that all kinds of projects in the countryside should require the bidding companies to refer to the "Liaoning Province Green Building Regulations" and "Green Site Evaluation Standards", etc. to carry out green construction as much as possible and minimize the damage to the surrounding environment. Change the traditional concept of engineering in the countryside.

4.3 Tread out a countryside construction waste resource utilization of the broken road.

Rural construction waste is not a waste product, but is placed in the wrong location of the treasure resources, the government should support and encourage the development of construction waste resource utilization related enterprises.^[5] The government should support the development of enterprises related to the resource utilization of construction waste. For example the Fujian Provincial Government proposes to cultivate at least

ten enterprises with an annual processing capacity of 1 million tons of construction waste resource utilization, and actively guide the state-owned enterprises to participate in the investment, construction and operation of related industries, and cultivate the development of enterprises related to the resource utilization of construction waste.^[6] Expand the share of green building materials, recycled building materials in the market, support enterprises to develop higher than the national and industry standards of quality control; promotion of recycled products; in government projects such as highways, infrastructure construction, sponge city construction and other government participation in the investment of the project to give priority to the use of green building materials will be included in the relevant enterprises in the Eco-environmental supervision of the positive list, to give a certain amount of subsidies to reduce tax and other policy support. Construction waste arbitrarily piled up to occupy a large number of broad land damage to the ecological environment, a great deal of scenery, but if the waste will be recycled construction waste heap such as engineering slag can be used to pile up the mountain landscaping; non-renewable construction waste waste soil can be backfilled, reclamation and other ways to carry out afforestation to reduce the degree of ecological damage caused by the construction project.^[7]

4.4 Learn from the relevant experience of developed countries.

Such as the United States through legislation from the source to curb the production of construction waste, prompting the public to take the initiative to seek ways of resource utilization of construction waste.^[8] In recent years, the U.S. Home Builders Association has begun to promote a kind of walls made of recycled aluminum alloy building materials and discarded tires, most of the roof frames are made of recycled steel from construction sites, and all the panels in the construction process are made of recycled materials such as sawdust, shredded wood, polyethylene and other recycled materials, such as the "Resource Conservation House". Japan's construction waste resource utilization and processing of ideas similar to Germany, have a very complete process and processing technology, are through the establishment of large-scale construction waste processing plant will be the construction waste recycling of advanced theoretical knowledge and technology perfect combination.^[9]

5 Fourth, summary

If the rural areas want to obtain a good ecological environment, reasonable management of construction waste is certainly an inescapable problem.^[10] At this stage, China is engaged in construction waste resource treatment of the relevant enterprises are still in the exploration stage, whether the government can play a leading role in leading the utilization of construction waste resources in combination with the local actual situation is the solution to the beautiful countryside construction of construction waste pollution and construction waste recycling of resources for secondary use of the key.

Acknowledge

College Students' Innovative Entrepreneurial Training Plan Program

References

1. You Xiaochun. Resource utilisation of construction waste is expected to turn stone into gold[N]. Fujian Daily,2023-06-03(003).DOI:10.28232/n.cnki.nfjrb.2023.002181.
2. Shan R. Vigorously promote the comprehensive utilisation of construction waste resources[N]. Huaxing Times,2023-05-19(003).DOI:10.28386/n.cnki.nhxbs.2023.001042.
3. Wu Yue. Resourceful use of construction waste to break the ice[N]. China Building Materials News, 2023-05-15(001).DOI:10.28089/n.cnki.ncjcb.2023.000284.
4. Gao Min. Analysis of the current situation of construction waste and resource utilisation[J]. Anhui Architecture,2022,29(11):181-182.DOI:10.16330/j.cnki.1007-7359.2022.11.074.
5. Zhang Yaxin. Development status of construction waste resource treatment industry in China[J]. Renewable Resources and Circular Economy,2023,16(04):22-24.
6. Swetha S K,Hikmatullah M,Tezeswi T, et al. Construction waste process flow modeling: a road map for marketing construction and demolition waste in India[J]. Innovative Infrastructure Solutions,2022,7(5).
7. ZHANG Weiwei,CAI Mengyu,XUE Jieming. Standardising rubbish management makes Wuyao countryside more beautiful[N]. China County Economic News,2022-05-23(006).DOI:10.28426/n.cnki.njjrn.2022.002649.
8. Liu Yuzi. Research on the characteristics of construction waste generation and reduction management in metro engineering construction [D]. Yunnan University, 2022.DOI:10.27456/d.cnki.gyindu.2022.002217.
9. Bong D K,Ik H L. The Effect of Waste Disposal Volume on Earnings Management Behavior in the Construction Waste Disposal Industry - Focused on the Size of the Licensed Storage Capacity and the Location of the Waste Disposal Site -[J]. Journal of the Korean Institute of Resources Recycling,2015,24(5).
10. Charvát J,J C,V V, et al. The treatment and properties of construction waste for subsequent use in cement composites[J]. IOP Conference Series: Materials Science and Engineering,2020,867(1).

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

