

# Study on Life Garbage Disposal of Suqian City

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**Abstract:** With the development of society and the expansion of the urbanization process, the disposal of household garbage comes to emerge, especially there are a lot of difficult problems to solve in small and medium-sized city. For an example of Suqian city of Jiangsu province, the generation of living garbage and main processing technology are introduced, and the disposal ability of life garbage and the main difficulties are analyzed. According to the actual situation of Suqian, the exact solutions are put forwarded in some aspects about perfecting the law, increasing investment and the introduction of social capital, strengthening management and intensifying the publicity.

**Keywords** Suqian; Life garbage; Processing status; Solution

## INTRODUCTION

More than 30 years of reform and opening up, the urbanization of China has made a great achievement. In 1978, our country's urbanization rate was only 17.92%, and our country's urbanization rate has reached 53.7% by 2013. At present, the rate of city garbage is 8% to 9% in the growth and urban life garbage output per person is about 450 to 500 kg. China will be a country that have badly pollution of garbage in 2020 [Ji, 2008].

The treatments of urban living garbage are divided into three types at the moment: landfill technology, composting technology, incineration technology. The treatment of living garbage in China is given priority to sanitary landfill, with the encouragement of regeneration utilization of resources and new energy policy, the treatment of living garbage have got a rapid development, which the burning rate have reached 14.9%.

## THE PRESENT SITUATION OF CONSUMER WASTE DISPOSAL IN SUQIAN

With the expansion of the scale of Suqian city, the output of life garbage is increasing dramatically, which has become a inevitable issue in city life. In fact, the level of urbanization in our country is low, which faced with less capacity in transportation and disposal of the garbage. The capital is difficult to meet the demand for garbage disposal of city. By 2014, there are 847 waste plants in our country, including 565 sanitary landfill plants, 211 incinerators, 33composting plants and other treatment facilities. The count of living garbage processing average day is 315300 tons, and hazard-free treatment rate of household garbage has reached 74.03%. From which you can see the current situation in our country: the lack of infrastructure, and backwardness of matching, and the people's environmental protection

consciousness is not strong, the classification of garbage is still in its infancy, especially in small and medium-sized cities, such as Suqian.

### The generation of living garbage

Suqian is located in the northwest of Jiangsu province, the area of which is about 8555 square kilometers. It mainly including Shuyang, Siyang, Sihong, two developing districts and Sucheng, economic developed zone, new town developed zone, Suzhou industrial park and Yanghe town. By 2014, the total population has reached 5.72 millions, GDP is \$2014 in 2014, it belongs to softening development areas in Jiangsu province compared with other cities of Suqian. The count of garbage is continuously growing in recent years. In 2014, according to 0.6 kg of output per person daily, it needs to deal with the garbage about 3400 tons every day, which means that the Suqian not only has a large number of garbage but also the area of garbage is spread, which is not good for the classification of garbage and treatment. The rate of garbage disposal in center city of Suqian can reach 100%, but the treatment rate of villages and towns is extremely low, and the garbage handling safely is only 44.5% of the city's life garbage[Cui, 2014].

The garbage is disposed by landfill in Suqian, some are taken by the form of incineration, but processing power is limited, the count of daily disposal is limited to 600 tons, which less than the 18% of the sum, it is difficult to meet the demand. The number of the transportation in central urban area of Suqian has reached 500 tons. Specific data as shown in Table 1.

On the basis of data above, we can draw the conclusion that the production of garbage is growing, and it reflects the population of Suqian is constantly expanding. But the ability of garbage disposal is hard to promote, although the capacity of disposal is growing year by year, the speed is not meet the demand of social development[Song, 2011].

Table 1. The output of central city and county areas in Suqian

Annual	Central city				County areas				
	Suyu district	Sucheng district	Developed area	New Lack city	Total	Shuyang	Siyang	Sihong	Total
2007	20075	80300	97000	2500	103852	10030	58400	73000	141430
2008	21900	73000	13700	3000	116080	10080	63875	80300	154255
2009	25550	73000	16600	3500	118659	11020	65700	82125	158845
2010	27480	84600	20100	5400	137580	12800	64900	83100	160800
2011	28300	83270	23100	5120	139790	14200	68240	86500	168940
2012	27900	88400	22960	6050	145310	13800	79300	88400	181500

**The Analysis of disposal capacity of the garbage**

In 2012, according to the data from the original waste, there were only 11 transfer stations in downtown. At present, there are 160 vehicles including 10 new compressible waste transfer stations, new water sprayer, road sweeper, garbage collection vehicles, high pressure cleaning car, fast cleaning car, but the rate of treatment is only 40%. Guangda (living garbage incineration power plant) was built by the end of 2011, the full capacity can maintain the demand of garbage disposal in central city, but the surrounding counties and towns is still using the traditional way of sanitary landfill.

According to the category, it can be divided into four categories, such as recycled waste, hazardous waste, kitchen waste and other waste. The rate of waste recovery is about 8%-10% in Suqian, the count of hazardous waste is about 20% of the total waste, and kitchen waste and other waste is 70%. Those life rubbish at present are mainly dealt with by waste treatment plants and waste incineration power plants. According to the different city of the villages and towns, the method of garbage disposal are divided into sanitary landfill and simple landfill. Sanitary landfill is the main processing in center of city, the method of villages and towns is mainly simple landfill. The rate of disposal in central city can reach 100%, but the rate of disposal in villages and towns is extremely low. Basically, the treatment rate of living garbage deposited in the open air and hazard-free in the city is only 44.5% .

In November 2014, Shuyang garbage incineration power plant put into operation, which can process 600 tons of garbage, and it basically meet the demand of county. Others waste plants include: XiaoLing landfill plant of Suqian, GuangDa garbage incineration power plant, Siyang county solid waste sanitary landfill plant, Sihong life garbage and waste treatment plant, garbage incinerators of Shuyang.

**The difficulty of garbage disposal in Suqian at present**

Recently, the investment of garbage disposal is increasing in Suqian, GuangDa life garbage incineration power plant solved the difficult problems of garbage disposal in Suqian. Shuyang garbage incineration power plant, Sihong and Siyang waste

plant are also in the construction, but there are still many difficulties.

(1) Suqian solve the problem of garbage disposal lie in central city and the county, the corresponding urban garbage treatment is simple landfill, which is not only takes up a lot of resources of land, but also it can cause secondary pollution. A lot of small and medium-sized landfill land fill gas is directly discharged into the atmosphere, causing resource waste and environmental pollution[Hu, 2009]. There are many landfill sites of penetrating processing do not attain the discharge standards, which has not enough capacity[ Xiao, 2007]. Therefore, this method is less used infrequently in developed urban areas, but some of county area still takes such a way due to lack of capital.

(2) The rate of urbanization is late in Suqian, the consciousness of ordinary people is weak about the classification of garbage. The dustbin that lie in the road along is used to collect classified garbage and the count is more than 2500, but there is little real recycling effect, which is a mere formality. According to the survey of two districts in Suqian city Pujiang garden area, there was 21 and 54 persons put the garbage into rubbish respective within five hours of effective detection in central point of international shopping plaza, and there are only 4 and 11 persons see the recycling and recovery instructions before they dropped garbage. We can draw the conclusion from the interview, the majority answers are that the label of garbage classification which they didn't pay attention to and didn't notice. So, the collection of garbage disposal is still visible to drop, mix collection, pick up and mix processing.

(3) The supervise of Government is not enough, the system of city life garbage disposal is not sound. For now, in Suqian in recent years, the government published a series of local policies and regulations. But many policies and regulations are not implemented and observed, the conduct of destruction didn't get the corresponding punishment.

(4) Capital is difficult to meet the actual demand. Wasting plant perennially remains overstretched, and old equipment needs to be updated. The equipment such as trucks, excavators,

compaction machine are still old, and also need to be updated.

### **SUQIAN CITY LIFE GARBAGE DISPOSAL COUNTERMEASURES**

Aimed at the deficiency existing in Suqian city life garbage disposal, it should be enhanced in the system construction, capital investment, the regulatory system, consummates aspects and market opening, garbage classification and so on.

#### **Perfecting the legal system**

At present, ministry of housing and urban-rural is the department which is in charge of garbage disposal of city in China, the garbage is collected, transported and handled by the department of urban management which is under the management of local government.[Yang et al., 2007]. In 2011, "implementation of the Jiangsu province of eating hutch waste management method," "Domestic waste sanitary landfill operation management evaluation standard(trial)of Jiangsu province," "living garbage incinerators operating management evaluation standard(trial) of Jiangsu province," "The method of urban construction waste management," "The method of urban living garbage management," "The city environmental health professional about agreed to the plan of Suqian city (2006-2020)," "Dynamic evaluation method of center city life garbage disposal in 2012," "Supervision evaluation method of sanitation quality in Suqian," legal regulations and so on.

#### **The government should invest heavily in the garbage disposal**

So far, garbage disposal has still been a high investment, and the output of industry is low. The government of Suqian invests little in garbage disposal, and proportional distribution is not balanced. Insufficient government's funding directly affects the upgrading of garbage disposal equipment. So the government needs to increase the capital, in order to realizing comprehensive utilization of urban and making living garbage harmless. A lot of money should be invested to introduce advance garbage disposal facilities and perfect management system. Setting up the public finances is also the main body, and the government should formulate the system of social wealth for the supplementary funding, and further optimize the public finances of urban environmental construction, and perfecting the economic policy of environmental health's construction.

#### **The introduction of social capital to encourage enterprises for independent innovation**

The processing of city life garbage can not just rely on the investment of government, and local government should preserve enthusiasm of market development. The market should be played a role in allocation, and enhance life recycling utilization rate

and cycle development. It is benefits for improving economic.

City garbage disposal industry belongs to public welfare industry that is high investment, because of high cost and low output, waste treatment enterprises are difficult to get capital recovery. Thus enthusiasm is not high in the market economy, on the one hand, the government needs to increase policy's support for municipal solid waste industry, especially the subsidies, financing loans, and government need to provide financing through various channels, setting up perfect and effective financing system, improving enterprise's investment enthusiasm.

The advanced technology should be consulted and absorbed. Based on basis, the government should combine with the actual vigorously independent innovation to improve the core competitiveness, and reduce the production cost. Only in those ways can we contribute to sustain the development of garbage disposal industry.

#### **For garbage collection efforts**

The charge of collection is directly related to garbage collection of the waste plant and the update of garbage disposal equipment and normal operation. In South Korea, the number of life garbage decrease more than 37%, which increase by 40% of recycled resources[Xiong et al., 2008]. So, it is particularly important to improve collection charge of garbage disposal, but the execution is too old under the management of sanitation. The standards have lagged behind the development of social economy, the standard is too low, and the toll is insufficiency. the whole collection is less than 50%, and the number of villages and towns and developing zones are even less than 20%. Sanctions that refuse to pay the merchant do not get corresponding punish, which makes pay lack of guarantee, which is easy to cause corrupt and unfair, and seriously affect the use of new technology.

#### **Increasing the publicity of garbage sorting recycling**

Account of the people's consciousness of the garbage sorting recycling is weak, which cause a lot of recyclable waste without used effectively and reasonably. What's more, so much waste has seriously polluted the environment. So firstly it is supposed to enhance the publicity of classification and collection, and enhance the public awareness of garbage classification, which promote people to abide by the laws of the state laws and regulations. It is supposed to encourage everyone to participate in the garbage disposal process, which can solve the problem of the garbage recycling from the source, and greatly improve the efficiency of processing.

### **CONCLUSION**

The garbage disposition is one of the important problems in city life, and it directly affects the

quality of urban people's life, so it is urgent to solve the problem of waste.

To sum up, enhancing people's environmental consciousness is primary, improving the garbage disposal technology is the key factor, improving the system of environmental protection is crucial, strengthening the law enforcement and increasing more investment of garbage disposal is the guarantee.

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#### **REFERENCES**

Cui Jiwei, 2014, "The survey of garbage disposal and take advantage of land resources for the example of Laoxiang", East China University of Science.

Hu Hongyan, 2009, "Analysis on status of municipal solid waste in China and solution". Management & Technology of SME, vol.1, pp 189-190.

Ji Tao, 2008, "Application and outlook of municipal domestic refuse composting", Tianjin Technology, vol.35, no.5, pp 46-47.

Song Junfeng, 2011, "The garbage disposal of city life for the example of Suqian in Jiangsu provenance", Nanjing Forestry University.

Xiao Qianbin, Wang Haining, 2007, "Discussion on the problems in and the countermeasures for the rural refuse landfill", Sci-Tech Information Development & Economy, vol.27, pp 122-124.

Xiong Mengqing, Sui Jun, Su Yongchao, 2008, "Review and suggestion on refuse disposal industrialization", Environment and Sustainable Development, vol.3, pp 32-34.

Yang Ling, Yuan Fang, 2007, "Status and problem of municipal solid waste management in China", Research, no2, pp 34-39.