On the problems and countermeasures of source classification management of municipal solid waste by local governments

Ma Meng Qiao\textsuperscript{1, a}, Sun Yan Hua\textsuperscript{2, b}

\textsuperscript{1}School of Finance and Public Administration, Harbin University of Commerce, Harbin, Heilongjiang, China
\textsuperscript{2}School of Finance and Public Administration, Harbin University of Commerce, Harbin, Heilongjiang, China

\textsuperscript{a}email: jenna2002039@126.com, \textsuperscript{b}email: 826815112@qq.com

Abstract: With the rapid development of China's economy, the level of urbanization is also rising. Due to the continuous expansion of China's urban scale and the increasing number of urban population, there are also many problems. The increasing amount of urban household garbage aggravates the environmental pollution. Therefore, garbage classification is becoming more and more important. Garbage classification is conducive to improving our quality of life, environmental protection and resource conservation. We must attach importance to the classified management of urban household garbage and do a good job in the classified management of urban garbage. In urban garbage classification management of local government plays an important role, through the analysis of source of urban living garbage classification work, the garbage classification collection and on the problems existing in the research, puts forward some effective management measures and methods, so as to promote effective development of source of urban living garbage classification management.

1. Introduction

With the introduction of "low-carbon economy" in 2003 and the emergence of "compact disc Action" in 2013, as well as the implementation of classified management of domestic garbage advocated by China, these actions can show that China is attaching more and more importance to environmental protection, resource conservation and recycling. At the 14th meeting of the Leading Group for Financial and Economic Affairs of the CPC Central Committee held in June 2016, General Secretary Xi Jinping paid great attention to the work of garbage classification and clearly required "the implementation of the garbage classification system". \footnote{1} Starting from 2019, we will enter the era of garbage classification. At present, every country in the world is facing the serious problem of environmental pollution and resource shortage. Therefore, the implementation of household waste classification management is particularly important. To do a good job in the source classification of municipal solid waste is an important basis for effective garbage classification management. It is the key to achieve the goal of harmless garbage, reduction and resource recovery. It is also the best way to improve the reuse of municipal solid waste. By improving the efficiency and quality of the source classification of MSW, it is helpful to promote the smooth progress of the whole garbage classification management. Garbage classification management can better achieve economic benefits, social benefits
and environmental benefits, so as to better promote China's sustainable development.

2. Necessity and current situation of urban household garbage classification management in China

2.1 The necessity of classification management of urban household garbage

Nowadays, "garbage siege" is becoming more and more serious in every city in China. The classification of urban household garbage is related to the degree of civilization and beauty of a city. Some substances contained in household garbage are difficult to be degraded in a short time or even some substances cannot be degraded, which will bring very serious erosion to the soil and thus reduce the crop yield. Therefore, through the effective classification of household waste, we can separate the harmful waste from the source and recycle the recyclables. According to relevant survey data, China needs up to 4 billion disposable plastic fast food boxes every year, which accounts for 8-15% of the household garbage. By classifying and managing household garbage, the rate of reducing the amount of household garbage can reach more than 60%. At the same time, improving the effect of household garbage classification management is conducive to greater efficiency in the use of resources, so as to achieve the dual goals of resource conservation and environmental protection, achieving the effect of 1+1 > 2. Based on the huge amount and scale of resources that can be saved after the source classification management of garbage, this paper summarizes the amount of recyclables saved in some aspects of life. As shown in Table 1.

| kind                  | waste plastics | waste paper | Waste cans | Old metal | Waste glass |
|-----------------------|----------------|-------------|------------|-----------|-------------|
| quantity              | 1t waste polyethylene plastic | 1500t | 1t | 1t steel scrap | 1t waste glass |
| economy/recycling     | 600 kg of diesel oil, 3t gasoline | 1200t tree | 20t aluminum | 3t ore | It can produce 15 standard cases of flat glass |

2.2 Implementation of the classification of urban household garbage

In 2000, China started the pilot of garbage classification. In June, the pilot of garbage classification collection was first set up in 8 large cities with developed economy. These cities are Beijing, Shanghai, Nanjing, Hangzhou, Shenzhen and Xiamen. However, it has only been implemented for a period of time, and the effect is not ideal.

On July 1, 2019, Shanghai became the first city in China to issue the Shanghai Municipal Solid Waste Management Regulations. The 5th day of each month is designated as the "Shanghai Municipal solid waste classification Theme Publicity Day". On July 1, 2019, Shanghai became the first city in China to officially implement garbage classification, marking that garbage classification was officially implemented in Shanghai and entered the mandatory era of garbage classification. [2]

According to a survey conducted on The pilot work of 46 key garbage classification cities on January 3, Beijing, Shanghai, Guangzhou, Xiamen and other big cities have achieved initial results in the classification and management of domestic garbage. But in some cities, the living garbage classification management effect is little, when garbage classification management work every city living garbage classification of according to oneself circumstance to take different measures, such as: source of yichang in garbage classification management in the demonstration area to carry out the "21 days green activity" met with some problems during the process of conducting, village resident environmental protection consciousness is not strong, the concept of recycling, fuzzy, etc. Chengdu
compost kitchen waste in situ, but this method is not suitable for further promotion, because the conditions of each community are different, leading to the limitations of this method. [3]

3. Problems existing in source classification of urban household garbage in China
According to the current status of domestic waste classification in some pilot cities in China, although China's garbage classification management has been carried out for a long time, at the same time, each city in China has set up garbage classification demonstration zones, and each place has adopted different methods and measures in garbage classification. However, in the absence of further promotion, it is not difficult for us to find that there are still some problems in the specific implementation of garbage classification management, making "garbage classification" a slogan that everyone can only speak, which has not attracted enough attention and popularity, and it is difficult to put it into practice. There are four problems in source classification of garbage in China.

3.1. The government invests little in funds and lacks relevant facilities
As for the management of source classification of municipal solid waste, government departments cannot invest in relevant infrastructure in time due to limited funds. Underfunded embodies the special truck for the variety of trash and garbage classification do not reach the designated position, the garbage truck into a special garbage truck, now just garbage truck and only one, delivery of rubbish, will initially has good classification garbage cause chaos when transporting, make progress they sort the garbage, do more harm than good. Therefore, the government should invest a lot of money in garbage classification management, improve the relevant hardware facilities, so that the garbage classification quality can be improved, which is conducive to the implementation of garbage classification work smoothly.

3.2. The role of the government fails to change and ignores other platforms
Local governments play a dominant and important role in garbage classification management. In the process of garbage classification management, they usually rely on relevant departments within the government to provide corresponding management measures and methods directly, and only rely on the government to make a single decision, which is inefficient in implementation. With the continuous improvement of China's economic level and the continuous development of the society, the ability and proportion of enterprises and the third sector to participate in the management of MSW classification will be constantly improved. Local governments should change their role and pay more attention to the role played by enterprises and non-profit organizations in the field of household waste classification management.

3.3. The government has a single mode of publicity, and the public lacks sense of responsibility
The quality and effect of urban living garbage classification about their own health and mood among urban residents and the local government in the implementation of urban living garbage classification management, the ways and methods of the propaganda and education on comparing the traditional and single ' ', such as printing some pamphlets and flyers and about garbage classification in each district propaganda slogans, banners, the effect is not too ideal, residents are discarded, community publicity slogans or even directly to ignore. Local governments not only waste money but also fail to achieve the effect of publicity and education through such publicity methods. At the same time, citizens lack the sense of responsibility and are unaware of the importance of household garbage classification to individuals and families, and think it has nothing to do with themselves. Therefore, local governments should arouse citizens' sense of responsibility and arouse people's enthusiasm and enthusiasm for garbage classification in the future publicity and education, so as to make the importance of garbage classification deeply rooted in people's minds.
3.4 The relevant laws are not sound, and the legal system is not systematic

At present, our country is in the field of urban garbage classification management, urban living garbage classification in the basic stage in our country, for the life of our country's existing garbage classification method is in March 2017, the National Development and Reform Commission, issued by the Ministry of Housing and Urban-Rural Development, the living garbage classification system implementation plan "the scenario emphasized by the end of 2020, the basic set up garbage sorting relevant laws, regulations and standard system, form can be copied, can promote the living garbage classification model. [4]

It can be seen from the plan that China has not yet formed a complete and enforceable legal system and system for household garbage classification. There are also a lack of relevant supporting policies and regulations, specific implementation rules and regulations, and incomplete laws in most cities. As a result, mixed garbage collection is still adopted in most cities, which causes more trouble for resource recovery and treatment, and environmental pollution control is also in trouble.

4. Measures to optimize the current garbage classification management in China

Classification management of urban household garbage is a complex and systematic work, which mainly includes four links, such as garbage disposal, collection, transportation and treatment resource utilization. Each link is crucial and affects the operational efficiency and implementation effect of garbage classification management. Each step should not be ignored. Comparatively speaking, the source management of garbage classification is the starting point for the effective implementation of garbage classification management. Therefore, we pay more attention to the source of household garbage classification when we carry out the work of household garbage classification management. Only when the basic work is done well, can the work of household garbage classification management be twice as effective. To further promote the source work of garbage classification, the focus should be from the government to increase funding, strengthen publicity and guidance, strengthen cooperation with the third sector, improve the relevant laws, innovation in the way of household garbage classification.

4.1 Increase capital input and improve necessary infrastructure

In the source management of garbage classification, local governments should deeply grasp and continuously increase the investment in garbage classification management according to the actual situation of the region. In the source management of garbage classification, local governments should set the goal of meeting the needs of residents in urban communities to the greatest extent, and create a beautiful and clean living environment for residents, so as to facilitate their activities and daily life. We will strengthen the building of hardware infrastructure. Invest in the construction of intelligent trash can, for example, to fine classification of trash can, for recyclable garbage including paper, metals, plastics, glass and other recyclable resources respectively set different bin, such not only can improve the resource utilization efficiency of different recycling, to a certain extent saved the late secondary sorting manpower and material resources and money. In this way, residents can have a clearer understanding of the types and concepts of recyclables and prevent some residents from confusing different recyclables and causing the phenomenon of disorderly throwing. With the help of the Internet platform, the government should invest money in the construction of the Internet, install intelligent monitoring equipment in the places where garbage is put, and use Internet technology to achieve better intelligent and efficient garbage classification.

4.2 To change the concept of government and strengthen cooperation with other departments

Classification management of MSW is a very complex systematic project, which needs to solve many complex social, economic, environmental and other problems. The process of household garbage classification involves the interests of many departments, and local governments need to consider the
rights and interests of each department when conducting garbage classification management. The government must actively build a good partnership with the third sector. The government can purchase public services and cooperate with professional enterprises to improve the efficiency of household garbage classification. At the same time, the division of labor and responsibilities of local governments at all levels and relevant functional departments should be clarified, and an effective mechanism for urban household waste management should be established and improved. [5]

In the source classification of MSW, local governments need to formulate the management steps of MSW source, so as to greatly improve the management level of MSW classification. The government department should first summarize and register the main information of residents in the community, and summarize the opinions and suggestions on garbage classification and conduct supervision and inspection every month. The specific process is shown in Figure 1.

4.3 Pay attention to publicity and education to enhance the sense of social responsibility of citizens

In the source management of garbage classification, all citizens must actively participate in it. Public participation is of great significance in garbage classification management. The higher the public participation rate is, the efficiency and effect of municipal solid waste classification management can be greatly improved. It takes a certain process for people to recognize and accept new things. As a new thing, garbage classification management knowledge also needs to be vigorously publicized in order to form an understanding. Therefore, local governments should attach great importance to the popularization and education of citizens' knowledge about garbage classification, and innovate the means and methods of publicity. Garbage classification is not only a trivial matter, but also a major event related to everyone's health. Enhance the community's sense of social responsibility. So that the public on the meaning of garbage classification to a deeper understanding. [6]

At the same time, the effective participation of citizens is indispensable for the source management of garbage classification to achieve good results. In the process of garbage classification management, the effective participation of citizens can reflect their real thoughts about garbage classification, so as to improve the quality of decision-making and ensure the effective implementation of garbage source classification management. Local governments should adopt the opinions and Suggestions of the public to continuously optimize the management of source separation of household waste. Government departments should encourage the public to participate in the management of waste source classification through various forms, timely provide relevant information to the public through various media, and allow the public to participate in the decision-making and implementation process of waste classification management and supervise the development of the whole project. Encouraging them to actively and effectively participate in a series of activities related to garbage classification, attracting the active participation of the public through some interesting and meaningful activities, so as to mobilize the enthusiasm of the public is an important basis for the success of the source management of garbage classification.

![FIG. 1 Schematic diagram of source management process of MSW classification](image-url)
4.4. Improve laws and regulations and form a standardized legal system

A sound legal and normative standard system is an important measure for the smooth implementation of MSW management. In the study of foreign innovative and advanced experience, China should formulate detailed and enforceable special laws and regulations on urban garbage classification according to its own national conditions, and improve the supporting legal system and standard system, so as to provide clear legal basis and guidance for the classification of urban household garbage. The public is the most important practitioner in the source classification management of urban household garbage. Local governments should confirm the status and authority of citizen participation in the form of legislation, standardize the way and procedure of citizen participation, and further improve the relevant government information disclosure system, consultation system, appeal system and feedback system.

5. Conclusion

The source classification and management of urban household garbage has a very important value, which is conducive to ensuring a clean, tidy and beautiful urban environment, thus promoting the sustainable development of the city. It will not only raise citizens' awareness of saving resources and caring for the environment, but also raise citizens' awareness of caring for the society, thus promoting the building of a moderately prosperous society in all respects. Under the guidance of local governments, with the assistance of enterprises and other departments, and with the increasing sense of personal responsibility of citizens, we should work together to put the work of garbage classification source into practice, and strive to realize the comprehensive promotion of urban garbage classification as soon as possible. We should start from a bit by bit to make garbage classification deeply rooted in the hearts of the people.

References

[1] Zhao Min. Completing the battle of garbage classification [J]. Beijing Observation, 2020 (08): 52-53.
[2] Wang Yao, analysis of problems in the implementation of Shanghai municipal solid Waste classification Policy [J]. Environmental Protection Science, 2020 (03): 20-21.
[3] Chen Wan, Each place has its own method for garbage classification [J]. Industry Observation, 2020 (15): 41-42.
[4] Comrade Yang Chi, Wang Fengyan, Reflections on the universal implementation of garbage classification System across the country [J]. Environment of Sichuan, 2020(8):85-86.
[5] Weicaien, based on the current situation and countermeasures of hazardous waste management under the background of mandatory garbage classification [J]. Urban and Rural Construction, 2020 (17): 34-35.
[6] Wang Fengyu, Fan Yubin, ZHAO Xinyue, Liu Wei. Influence of garbage classification management system in developed countries on the Construction of Ecological Civilization cities in China [J]. Environment and Development, 2020(5):230-231.