Problems and Countermeasures of Classification of Agritainment Resort Domestic Garbage in Changhai County Dalian City

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Abstract. Taking four agritainment resort gathering areas of Dachangshan Island, Xiaochangshan Island, Guanglu Island and Zhangzi Island in Changhai County as objects, the classification of agritainment resort domestic garbage in Changhai County was investigated by field visits and questionnaires. It is concluded that there are some problems in the classification of agritainment resort domestic garbage in Changhai County, such as the deviation of the operator's consciousness and behavior of garbage classification, the poor effect of reduction at the source, and the general wait-and-see mentality of the operator. To do a good job in classifying and reducing domestic waste, we need to formulate and improve the classification standard of domestic waste, speed up the construction of kitchen waste treatment system, and establish and improve the reward and punishment mechanism of domestic garbage classification.

Introduction

Changhai county of Dalian is the only archipelago border county in northeast China. In recent years, the local economy is developing rapidly by the rapid development of tourism, but also increased the huge amount of trash year by year in the island. In 2016, Changhai county began to implement the action of household waste classification and reduction, and launched 11 pilot programs of garbage classification in government offices, public institutions and public service places.[1] However, the vast majority of agritainment resorts distributed in villages and towns have not join the pilot area yet. Compared with ordinary islanders, the household waste generated from the business process of agritainment resort is not only large in quantity but also complex in composition. Especially as the same time as tourist peak season every year, the total amount of garbage generated by the agritainment resort on average is several times of the off-season, and most of these garbage is not classified scientifically before people put them in the dustbin.

Our team chooses the Xiaochangshan Island and the Dachangshan Island town and Guanlu Island and Zhangzi Island, as four major agritainment resort area as sample area, detailed understanding the composition of the local fishermen's living garbage and also how they disposed the garbage by the methods of on-the-spot investigation, interview, questionnaire survey. And our team carried out special investigation regarding the agritainment resort operator awareness of garbage classification, By summarizing the reasons that influence the participation of operators in garbage classification recycling of agritainment resort , this paper tries to put forward the improvement of garbage classification reduction in Changhai county The feasibility suggestion of quantity work is hoped to help improve the effectiveness of waste separation and reduction work in Changhai county.

Characteristics Analysis of Agritainment Resort Household Garbage

Difference of Waste Output in Low and Peak Season is Obvious. May to October of each year is the peak tourism season for all the islands in Changhai county. With the surge in the number of tourists, the daily output of household garbage in the Abusiness area also doubles increase. Although most visitors stay no more than 2 days, but the sea food as mine food of 3 meals daily, it will come into big quantity of shell garbage, so the trash always will be overflowing in front of the agritainment resort when it just past noon, so a lot of garbage will be discarded nearby garbage collection point, even the garbage truck pickup twice a day, There is no guarantee that the rubbish inside the site will be removed on time every day. Only off season, the above situation will be changed.

Among the Garbage Components, Shell Waste Accounts for a Large Proportion. Changhai county is rich in Marine resources and It is the largest scallop production base in China. Every summer, many guests from inside and outside the province come to experience fishing or taste seafood feast. Seafood accounts for more than 90 percent of the dishes served at the local fisherman's restaurant or hotel, which produces several times as much shellfish waste as the average restaurant. In addition, the local people are simple and unsophisticated, and fisherman's restaurant dishes are more abundant than those of ordinary restaurants, which has also led to an increase in the amount of shellfish garbage.

Garbage Moisture Content is High, High Calorific Value. Moisture content and calorific value are important parameters to select the disposal method of household refuse. [2] If the moisture content of garbage is high, it is easy to pollute the environment，during the transport and terminal disposal, ; If the calorific value of garbage is high, it means the incineration time will be long, which will increase the operating cost of garbage incineration invisibly. The moisture content and calorific value of garbage depend on the composition of garbage. We have found normally people

do not collect the kitchen waste separately after the research. The kitchen waste with high water content has been put together with other garbage, which directly causes the improvement of the water content of the garbage in the above area. Due to the island with limited resources, the production and living materials circulation on the island mostly rely on the sea, the packing material in the process of transportation will be carton, foam boxes, plastic bags and quantity also big, these material mixed with living garbage and also big quantity of paper garbage from the customer of fisher restaurant and hotel, The calorific value of household waste in the whole agritainment resort area also increased a lot.

The Present Situation and Problems of Household Garbage Classification in Changhai County

The Government's Propaganda is not So Weak, but the Garbage Classification Awareness and Behavior of Agritainment Resort Owner are Always not So Well. Since 2016, Changhai county has been committed to promoting the classification and reduction of household waste, and increased the publicity of garbage classification and reduction year by year. Each year before the peak tourist season, the township government will organize the local agritainment resort owner to attend the seminar on garbage classification for special study, and ask them to put garbage in accordance with the standard classification, and clean up the garbage in front of agritainment resort door regularly. But in fact, after the lecture, all these people still put waste in accordance with the original habits, and did not turn the knowledge learned into garbage classification.

In order to understand the relationship between the garbage classification consciousness and the actual classification behavior of agritainment resort operators, the project team issued 100 questionnaires in the four agritainment resort aggregation areas, and 100 valid questionnaires were collected. According to the statistical analysis, the awareness rate of garbage classification of agritainment resort operators reaches 90%. However, 33.3 percent of people think it is not necessary to separate the garbage because of the trouble. Another 30 percent think they can do garbage classification if they have free time, but not when they are busy. It can be seen that the garbage classification policy carried out by the government has played a role in improving the garbage classification consciousness of operators in Changhai county. However, how to transform the awareness of classification consciousness of operators into effective practical actions requires a deep understanding of the people's conditions in order to find solutions.

The Input of Waste Sorting Infrastructure Equipment is Increasing Year by Year, but the Reduction at the Source is not So Well. In terms of the four agritainment resort gathering areas investigated deeply by the project team, all the areas have achieved the full coverage of the distribution of classified dustbins. The local government has released 3-4 classified dustbins for each merchant with larger operation scale, and the slightly smaller merchants can also guarantee that 3-4 classified dustbins can be shared by 2-4 households. The four bins are different colors and clearly marked, respectively used for placing recyclables, hazardous waste, kitchen waste and other garbage. Moreover, there are basically garbage collection points surrounded by cement walls near the collection area, which are used to collect household garbage that cannot be placed in the household garbage bin.

Yet after in-depth research we found that most of the fishermen's operator   only could garbage classification like the valuable items such as plastic bottle or big glass bottles, almost all the other not easily degraded foam such as plastic packing bags, disposable plastic tablecloth, smudgy napkins, wastes of eat hutch garbage,   shellfish were still dropping into trash can mixed with other living garbage, Moreover, they usually only look at which bucket has space when releasing, and do not distinguish between harmful and harmless, and do not do the dry and wet separation of garbage. Our questionnaire identified some of the reasons: For one thing, most residents still can't tell the difference between 'recyclables' and' other trash. On the other hand, more than 80% of the operators are skeptical about the existing garbage classification and treatment mechanism. They think that even if the front-end classification of garbage is well done, there is still the possibility of mixed garbage loading in the intermediate transfer and terminal disposal, and the preliminary classification may be useless. It can be seen that the existing garbage classification standards have not been widely recognized by operators in terms of operability. Therefore, even if the government provides classification tools for free, their behavior cannot be fundamentally changed.

The Reward and Punishment Mechanism of Garbage Classification is not Enough, and Operators Generally Have a Wait-and-See Mentality. The garbage sorting work has been promoted less than three years in Changhai county, the relevant rewards and punishment mechanism is not perfect, in a series of files, Only in the" measures for promoting the classification and reduction of household waste in Changhai county" issued in 2018: Those who dump, throw or pile up domestic garbage at will shall be fined not more than 200 yuan for individuals and more than 5,000 yuan but not more than 50,000 yuan for units; We will implement the policy of halving garbage fees for units and households that classify garbage. However, for agritainment resort, which is located in a village, the monthly garbage fee is not high (around 500 yuan on average), and some islands have not been charged since 2017, so the incentive of halving garbage fee is not very attractive. In addition, the punishment measures have not been implemented, at present, most fishery operators still do not want to waste in Garbage classification work. To get to the bottom of the matter, the key to the problem is that there is no currently relevant laws on garbage classification in China, and the existing policies have no obvious constraint on the garbage classification behavior of agritainment resort operators, which naturally affects their enthusiasm to participate in garbage classification.

Suggestions for Improving the Source Classification Performance of Agritainment Resort Household Waste in Changhai County

Improve the Garbage Classification Standards, and Strive to Separate Dry and Wet Garbage. The local government should improve the garbage classification standards of Changhai county as soon as possible on the basis of in-depth investigation and extensive listening to the opinions of all parties, so as to simplify the classification operation to increase the convenience. At present, there is an academic opinion that it is unnecessary to force residents to classify recyclables. As long as the front end can ensure the separate release of dry and wet garbage, the sorting of recyclables can be realized by means of technical means in the terminal disposal. We believe that if this kind of terminal sorting technology can both high efficiency and economical efficiency, then on the front end can try to put the living garbage divided into three categories wet garbage, dry rubbish, hazardous waste, Hazardous waste into the way unchanged, The wet waste is put into the original kitchen waste bin, and the dry waste can be put into the other two buckets. Not only the existing trash can be used continuously to avoid waste, but also the reduction of the difficulty of sorting will undoubtedly help to improve the enthusiasm of agritainment resort operators in garbage classification .

We Will Accelerate the Construction of a Disposal System for Kitchen Waste and Improve the Utilization Rate of Shellfish. Kitchen waste is the typical wet waste, high moisture content, complex components, easy to deteriorate, more harmful to the environment. We recommend changhai county at all levels of government allocated special funds to speed up the construction of kitchen waste treatment system, in addition to have more the totally enclosed garbage truck, also be on the advanced and mature kitchen waste treatment technology, actively explore the effective way of wet garbage recycling use, strive for the early realization of kitchen waste wet island garbage disposal, the goal of reducing landfill.

According to the classification standard in the measures for promoting the classification and reduction of household waste in Changhai county, which came into effect in 2018, shell waste belongs to the category of "other garbage", however in order to be out of the fear of complex, the operators of agritainment resort always mix them with the kitchen waste. In this regard, we suggest that the government should take shell waste as a reward for garbage classification for paid recycling, and adopt appropriate recycling technologies to "turn waste into treasure".[3] There are something still need to be stress is that Domestic and foreign experts put forward a lot of shell waste recycling technology such as:used as a soil conditioner, burning absorbents, building materials, catalysts, biological packing, etc. but there are some limitations, If some technologies are selected to be applied to the disposal of domestic garbage terminal, experts must be organized to conduct sufficient demonstration in advance to avoid secondary pollution.

We Will Accelerate the Establishment of a Reward and Punishment Mechanism for the Classification of Household Waste. It is very difficult to guide residents to form the habit of household garbage classification. From mixed packaging and discarding to consciously classifying and releasing, the behavior may be repeated for many times. As the leader of garbage classification action, the government should create some flexible incentive mechanism at the current stage to attract more operators to participate in garbage classification action and solidify their garbage classification behavior. In view of the current situation that the public participation rate is not high due to the cumbersome procedures of the "points for prizes" policies implemented in many regions of China, we suggest that the Changhai county government can develop incentive policies specifically for agritainment resort, which can give reputation and even economic rewards according to the classification of domestic garbage -- "green fisherman" can be listed for good performance, and a certain amount of business tax can be reduced. For the operator of negative treatment, it can be economic penalties after three warnings, or refuse to clear their garbage. Of course, the specific measures should be solicited from the public and carefully demonstrated.

Conclusion

Household garbage disposal is an extremely difficult and complicated work. For islands far away from the land, due to the fragile ecological environment and limited land area, the problems of domestic waste treatment from front-end classification, intermediate transfer to terminal disposal are much more complex than inland villages. Our description of the current situation and existing problems of agritainment resort household waste classification in changhai county may not be comprehensive and objective, and the above Suggestions may not be mature, but we will improve them with follow-up studies further, hoping to continue contributing to the reduction of household waste classification in changhai county.

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