

[Working Paper Series: 2019 MDRN Survey 2]

Municipal Solid Waste Management

Naushawng Development Institute

Introduction

Solid waste may be defined as “useless, unused, unwanted, or discarded material available in solid form.” Semi-solid food wastes and municipal sludge may also be included in municipal solid waste. However, in Myanmar waste management means the management of waste from all human and animals activities which is normally useless or unwanted (MDRN, 2015).¹ Today, solid waste is a major problem facing many societies (Singh, Gupta, and Chaudhary, 2014).²

In Yangon city, normally, residents produce 1,690 tons by day (TPD) of municipal waste is generated from the households, commercial centres, institutions, and industries, with a rate of 0.396kg per capita per day. Since the municipality does not collect this waste separately, but instead carries all waste from households, institutions, and industry together on the same truck, the waste has not been separated. Although some households, institutions, and commercial enterprises separate their waste, all waste is finally mixed on the collection trucks, and disposed together in final dumping sites. (MDRN, 2015).

Yangon City is situated in the Yangon Region and is the largest city in Myanmar. There are forty-six townships in the Yangon Region and thirty-three townships in Yangon City proper. The population of Yangon City totals 5.2 million (5,209,541), representing 70.8% of the entire population in the Yangon Region. According to the 2014 Myanmar population and housing census, the population density of the Yangon Region was 716 people per square kilometer. The population density of the Yangon Region increased from 310 persons per square kilometer in 1973 to 387 persons per square kilometer in 1983, and again to 716 persons per square kilometer in 2014 (UN-FPA, 2015).³

As urban population growth and increased income levels have generated higher amounts of daily waste, waste management is becoming one of the biggest challenges for Yangon City. According to the World Population Review, the population of Yangon went from half a million in 1941 to over one million less than ten years later, an increase of 160%. It is expected to reach 5.3 million in 2020 and 5.9 million in 2025 with an annual population growth rate of 22.3% (World Population Review, 2019).⁴ In 2016, a study done by UN Habitat and the Yangon City Development Committee (YCDC) showed that the total waste generation was 2,069 metric tons per day and

¹ MDRN. (2015). Report on City Assessment of Municipal Solid Waste in Yangon City. Retrieved from <https://tinyurl.com/yvjh88hv>

² <http://ijesd.org/papers/507-G0029.pdf>

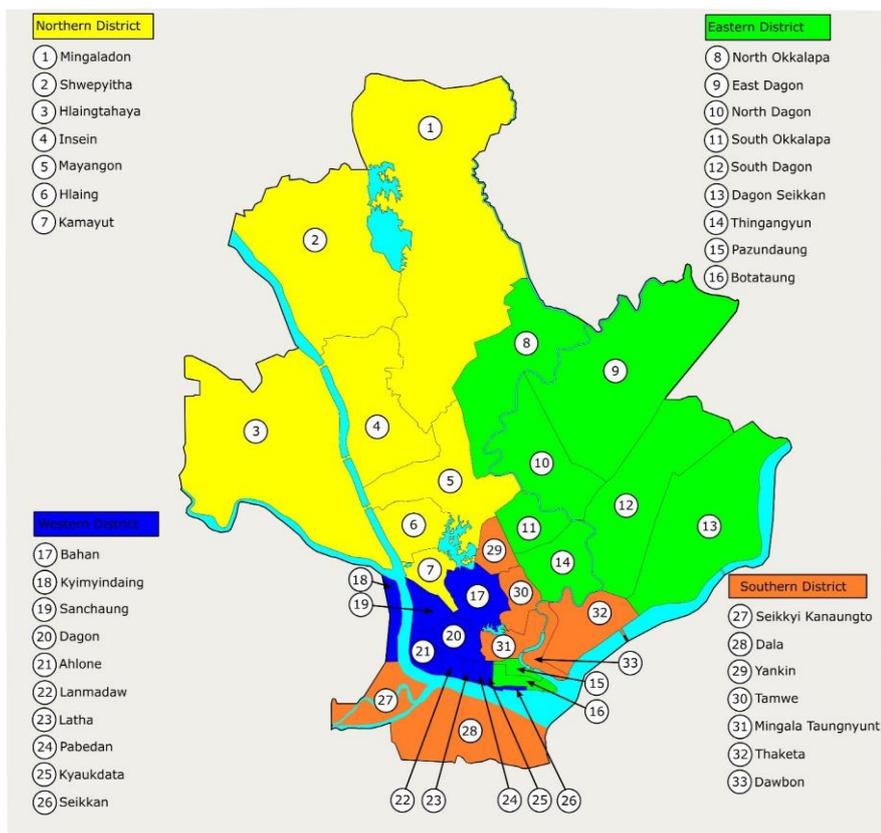
³ <https://myanmar.unfpa.org/sites/default/files/pub-pdf/Yangon%20Region%20Census%20Report%20-%20ENGLISH-3.pdf>

⁴ <http://worldpopulationreview.com/world-cities/yangon-population/>

is expected to increase further. Estimates predict that the daily waste generation in Yangon will reach 3,906 metric tons per day in 2026 and 7,444 metric tons in 2036 (YCDC, 2018).⁵

Thus, the YCDC Department of Pollution Control and Cleansing plays a crucial role in planning and managing suitable waste collection and disposal systems in its taxed townships and wards.

Figure 1. Yangon Districts and Township Division⁶



The aims of this public opinion research survey are:

- To assess public awareness of municipal solid waste management
- To understand public perspectives on the quality and performance of municipal solid waste services
- To explore public expectations of the YCDC with regard to solid waste management system
- To recommend strategies and identify areas for improvement

Overall Assessment of Yangon City's Cleanliness

A city is shaped by the behavior and habits of its inhabitants. The opinions of others play an important role in changing the behavior or habits of individuals. Likewise, the opinions of Yangon's citizens are vital for the city's improvement, which means that they must be voiced to society and the government.

From this survey research around 43% of the respondents are of the opinion that the city is clean. However,

⁵YCDC. (2018). Transformation of Urban Management. Retrieved from http://unhabitat.org.mm/wp-content/uploads/2018/07/YANGON_Urban-Services-Business-Operation-Plan-for-Solid-Waste-Management.pdf

⁶ Source: www.maps-yangon.com

around 42% of respondents believe that the city is unclean or dirty. Interestingly, a majority of the respondents from Western District, around 54%, expressed the opinion that Yangon City is clean. In the Southern District, 52% of the respondents expressed negative views when asked whether the city was clean.

Figure 2. How clean is the city?

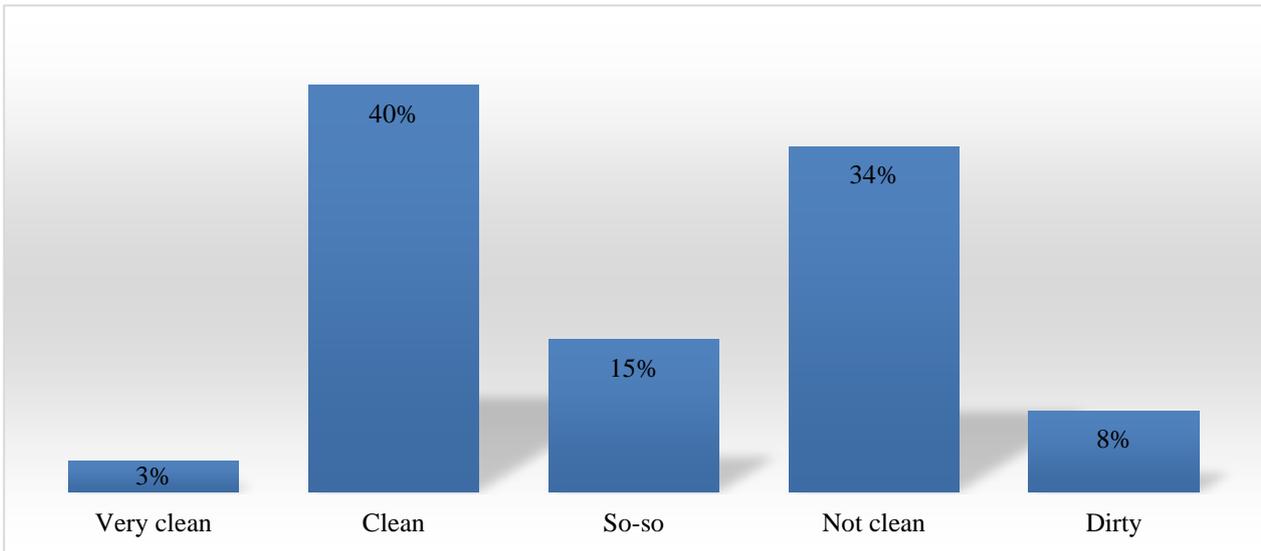
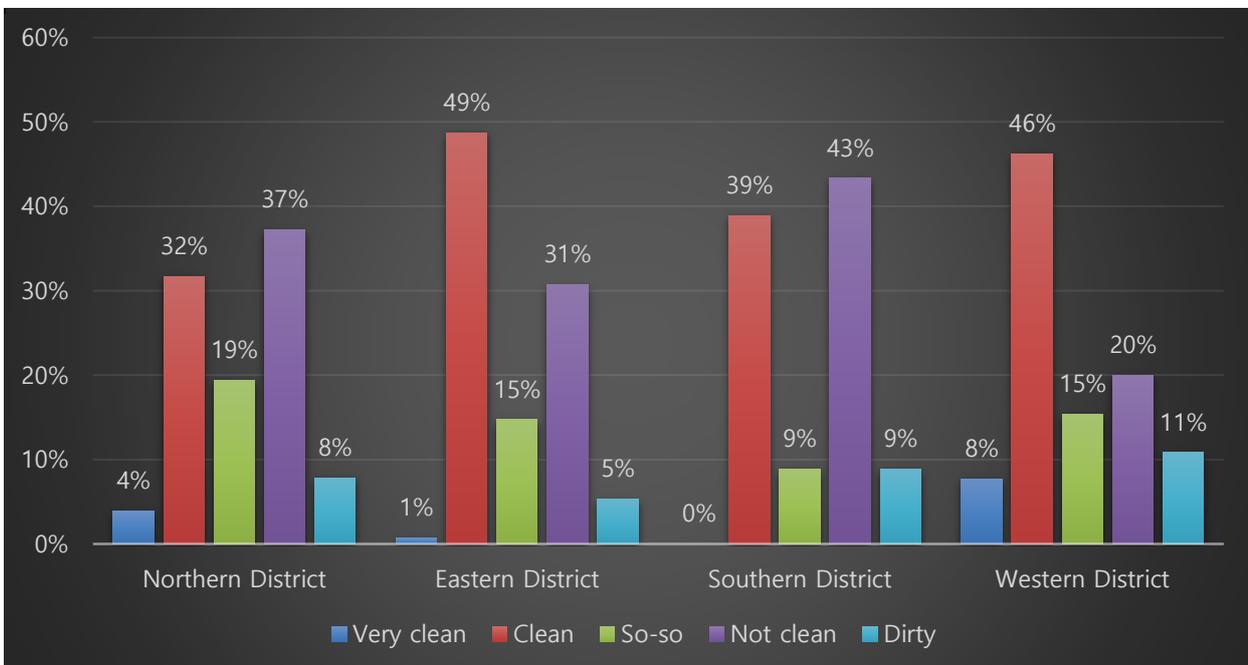


Figure 3. Opinion on the cleanliness of the city by district

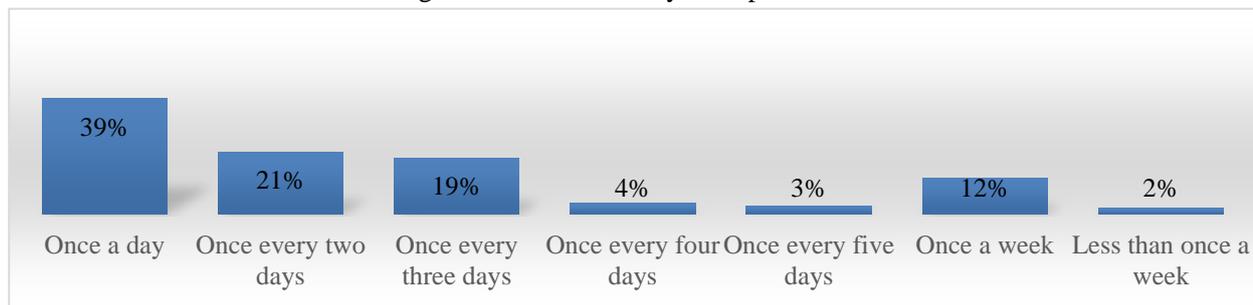


Public Practices on and Awareness of Waste Disposal

Practices

An assessment of the frequency of waste disposal found that the respondents can be divided into three groups: frequent disposers (once every 1-2 days), infrequent disposers (once every 3-5 days) and weekly disposers (once a week or less). The majority of the respondents (60%) belong to the first group, disposing of waste according to what can be considered good practice. The 26% of respondents belong to the second group, and 14% of the respondents belong to the last group.

Figure 4. How often do you dispose of waste?



The majority of respondents, around 72%, do not separate their waste before disposing of it. Only 23% of the respondents said that they practice waste separation. Only 11% of respondents dispose of their waste by themselves; the majority (89%) dispose of their waste at designated collection points.

Figure 5. Do you separate your waste?

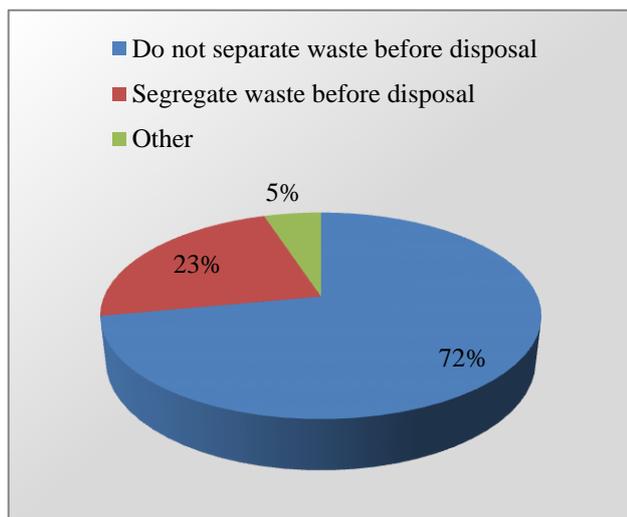
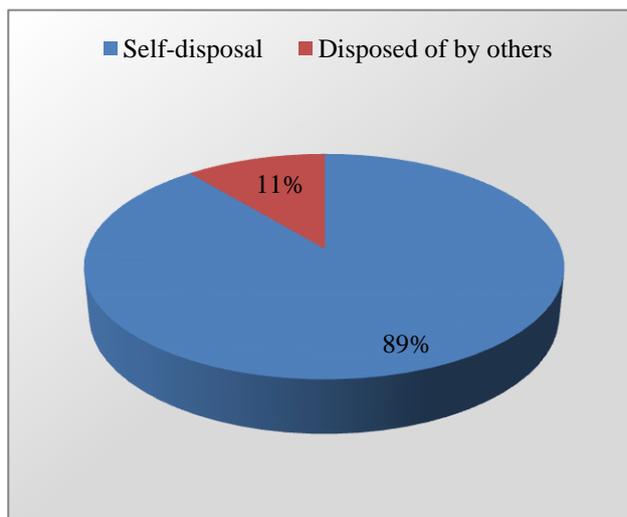


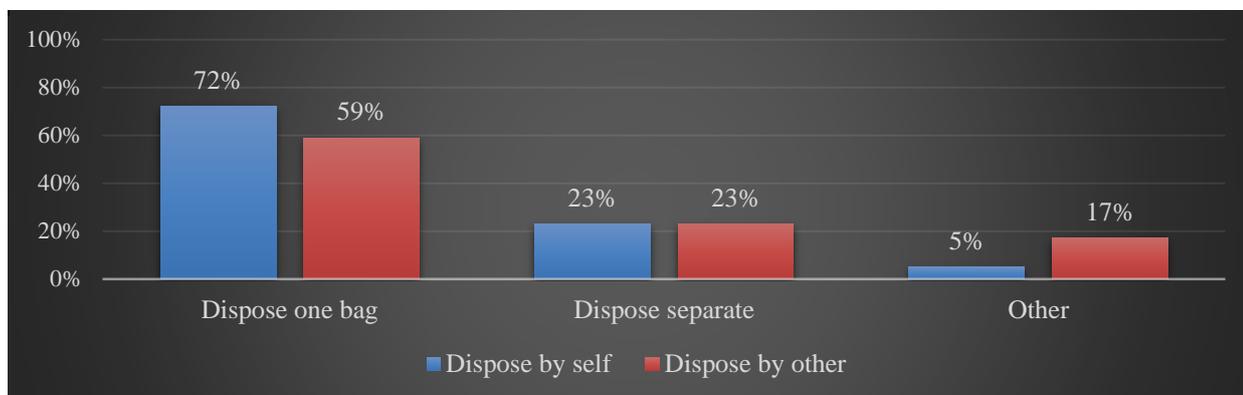
Figure 6. How do you dispose of your waste?



Seventy-two percent of respondents who dispose of waste by themselves and 59% of those who dispose of waste at collection points put all types of waste into one bag. In both groups, 23% of respondents separated their waste before disposing of it. There was no difference in the number of people who separated their waste among people

who disposed of their own waste themselves and those who relied on others to dispose their waste.

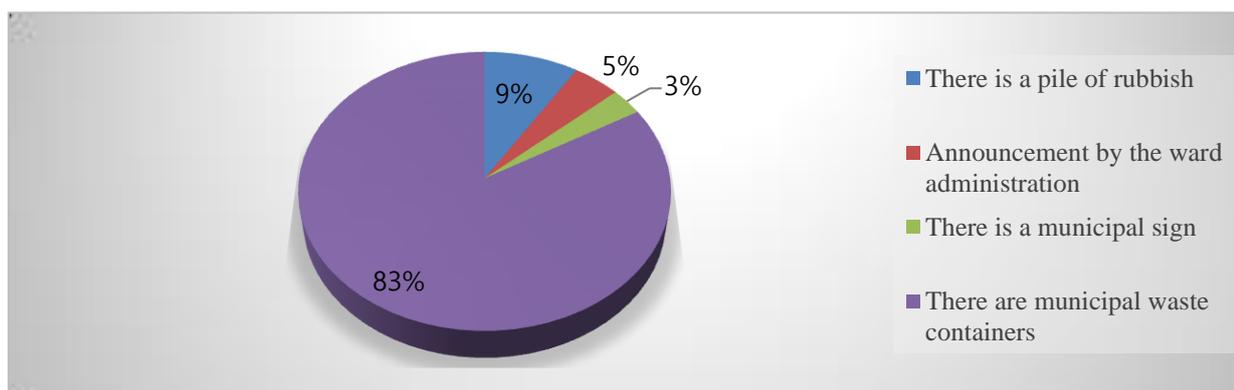
Figure 7. Do you dispose of your own waste?



Awareness

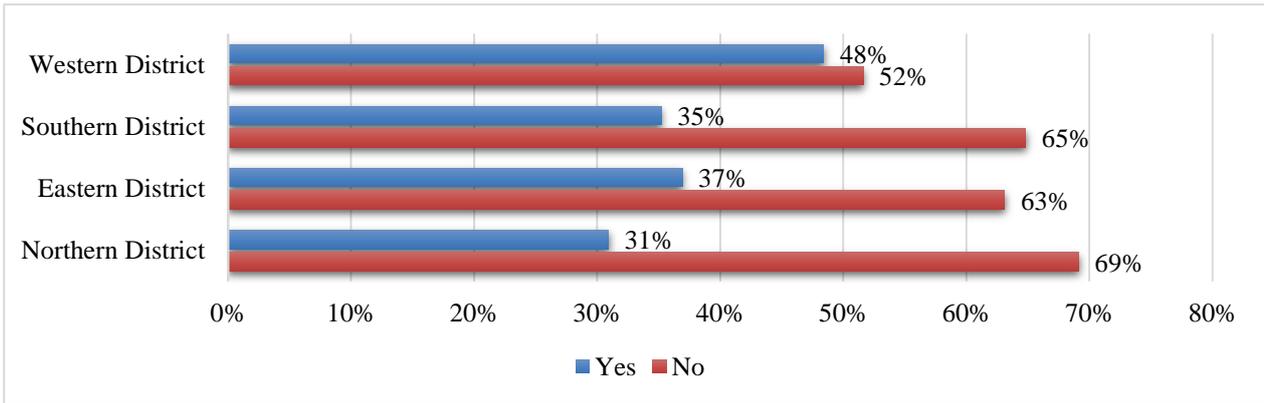
Public awareness is very important to promote new systems and practices. According to our survey, around 90% of the respondents were aware of the location of designated waste collection points and 10% of the respondents did not know the location of designated waste collection points. Knowing where designated waste collection points are is an important factor for public to dispose of their waste at the correct place. The majority of respondents (83%) could identify designated waste collection points by the municipal waste collection containers. Nine percent of respondents identified the locations by the pile of rubbish, 5% of respondents learned of designated waste collection points through announcements by the ward administration, and just 3% of the respondents learned of the location from a municipal sign.

Figure. 8 How do you know where the designated collection points are?



The majority of respondents (64%) reported that they know how to contact municipal waste collection services while around 32% of respondents were unaware of this. In the Northern District, 69% of respondents stated that they know how to contact municipal waste collection services, which was the highest rate, while only about 52% from the Western District knew. This was the lowest rate compared to the other Districts.

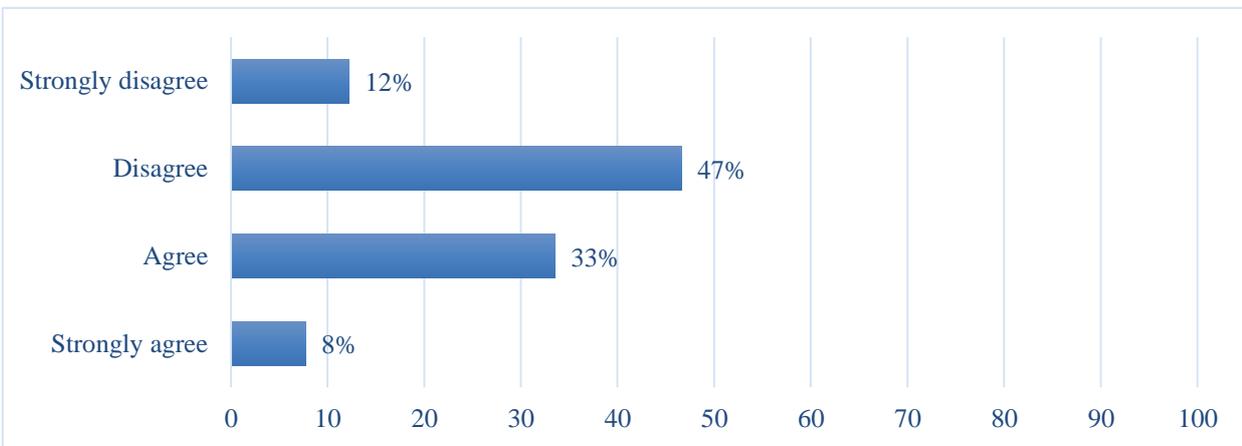
Figure.9 Do you know how to contact municipal waste collection services?



Waste Disposal in Public Areas

Fifty-nine percent of respondents disagreed (47%) or strongly disagreed (12%) with the statement that people tend to litter or drop rubbish in public spaces. Thirty-three percent of respondents agreed with the statement, and a minority (8%) strongly agreed that people tend to litter or drop rubbish in public places.

Figure. 10 Do people litter in public areas?

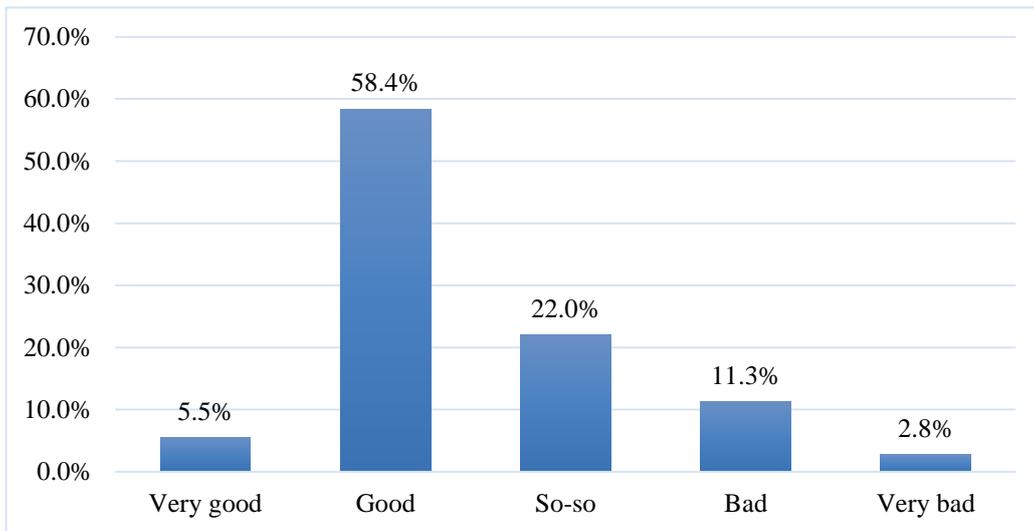


Quality and Performance of YCDC's Solid Waste Management

Public opinion

Sixty-four percent of the respondents asked to rate the waste collection services of YCDC reported that the quality and performance of YCDC on solid waste management was good. In contrast, 14% of the respondents believed that YCDC is not doing well.

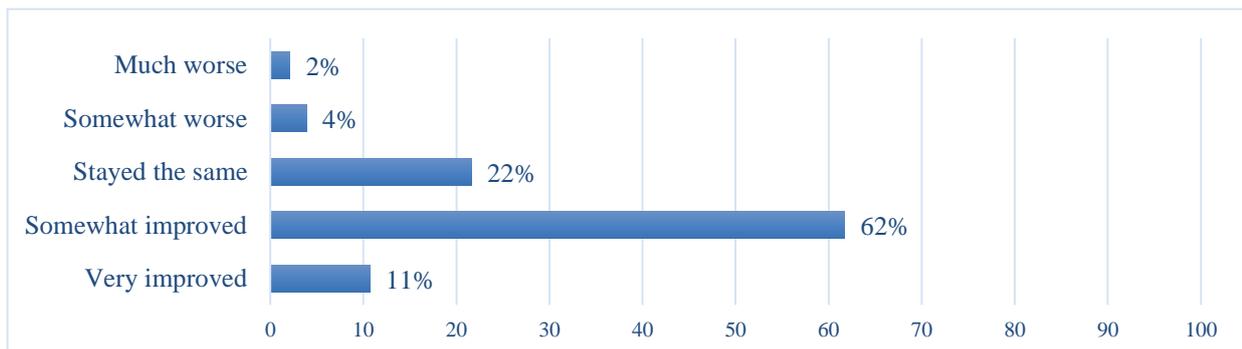
Figure. 11 How would you rate the quality and performance of YCDC on solid waste management?



Improvements

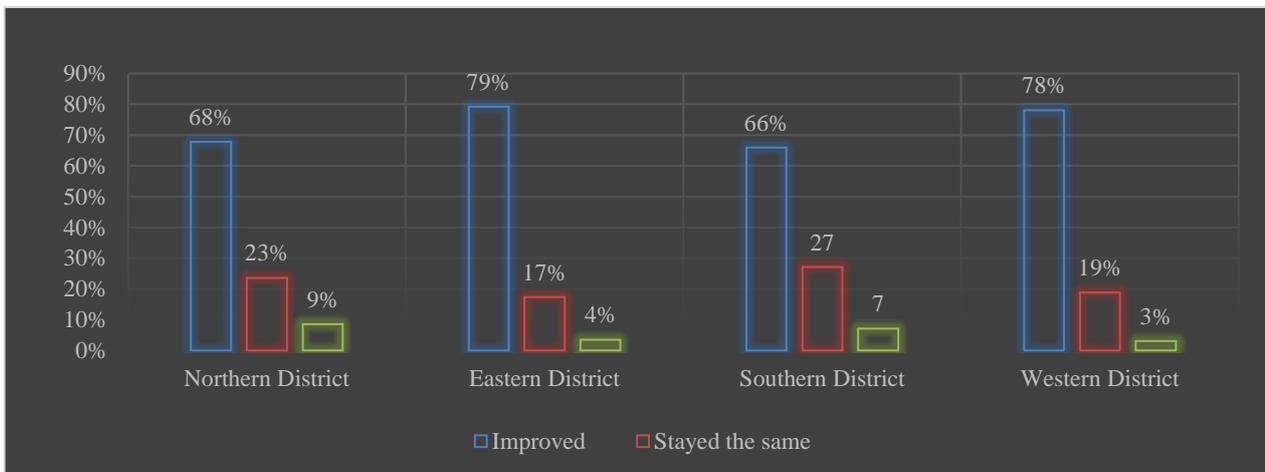
A majority of respondents (62%) reported that the quality of YCDC waste management has somewhat improved during the last two years, and 11% of respondents said that waste management has greatly improved. Only 6% of respondents said that the quality of YCDC waste management is decreasing. Specifically, it was also found that 22% of respondents reported that there was no improvement in the quality of Yangon's municipal waste services compared to the last two years.

Figure. 12 How would you rate the quality of YCDC waste services in the last two years?



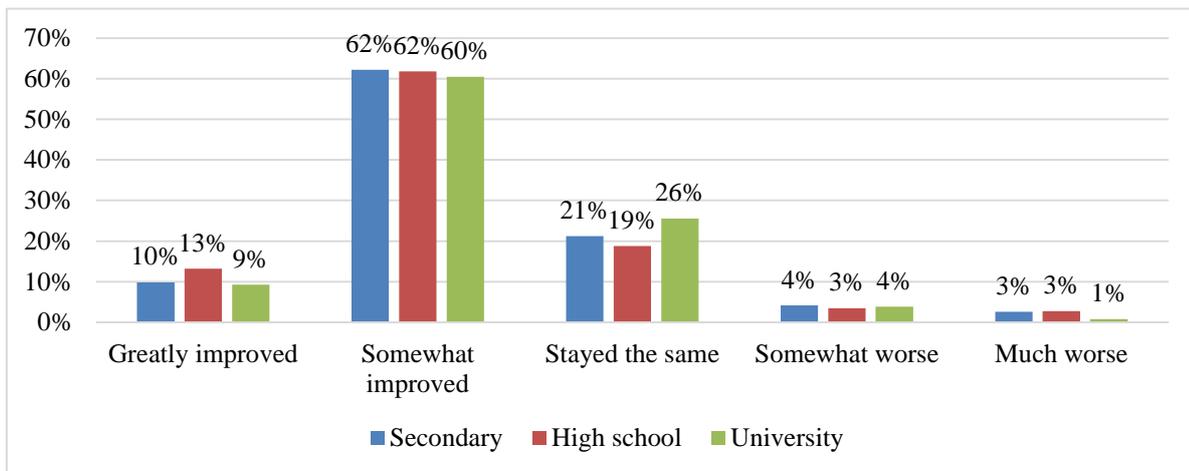
The opinions of respondents did not vary much between districts. A majority of respondents from the Eastern District (79%) and the Western District (78%) reported that the quality of YDCD’s solid waste management is improving compared to last two years, while 68% and 66% of respondents in the Northern District and the Southern District reported the same, respectively. It appears that services in the Western District and in the Eastern District have improved to a greater extent than the Northern and Southern Districts in the last two years. Therefore, we can assume that the majority of people living in the Western and Eastern Districts believe that the YCDC is trying to deliver better public services.

Figure.13 Public opinion on YCDC quality improvement by districts



A majority of all respondents reported that the quality of YCDC services has improved in the last two years. Interestingly, there was almost no difference in this response between education levels.

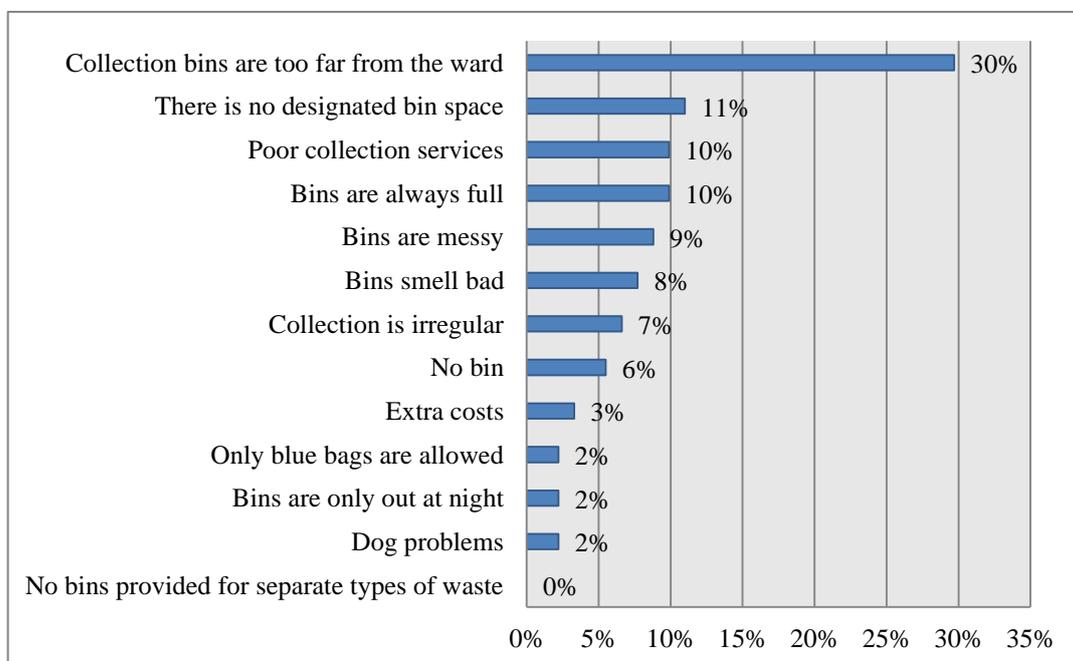
Figure.14 Public opinion on YCDC quality improvement by education levels



Common Problems in Daily Waste Disposal

Thirty percent of respondents reported that municipal waste disposal bins or containers were too far away from the ward. Some respondents (14%) had complaints like there is no specific place for the bins, no bins in some places, or no separate bins for different types of waste. Twenty-seven percent of respondents complained that bins are always full, and that trash-pickers who go through the trash often mess up the bins and release bad smells. In fact, 5% of respondents reported that they do not have access to any bins at all, which shows that YCDC must improve its bin-placing system or consider and investigate why no bins have been placed in some locations. On the other hand, 2% of respondents reported that there are some places where bins are only available at night. This means that people may be unwilling or afraid to dispose of their waste due to feelings of insecurity, exacerbated by stray dogs that tend to live around the bins. Some respondents reported that dead bodies of dogs scare them and produce a bad smell around the bins. Moreover, around 17% of respondents said that YCDC’s collection services are poor. Around 7% of respondents said that collection services are very poor and irregular. These responses demonstrate discontent with YCDC’s waste management services. Moreover, 2% of respondents reported that only blue bags are allowed to be placed in bins, and no other types of bags are allowed. This may lead to public complaints about the extra cost of waste disposal. Five percent of respondents complained about the extra cost for disposing of certain types of waste, such as pieces of wood, and leaves those are not normally accepted to dispose at the YCDC rubbish bin.

Figure. 15 Common problems or inconveniences in disposing of daily waste

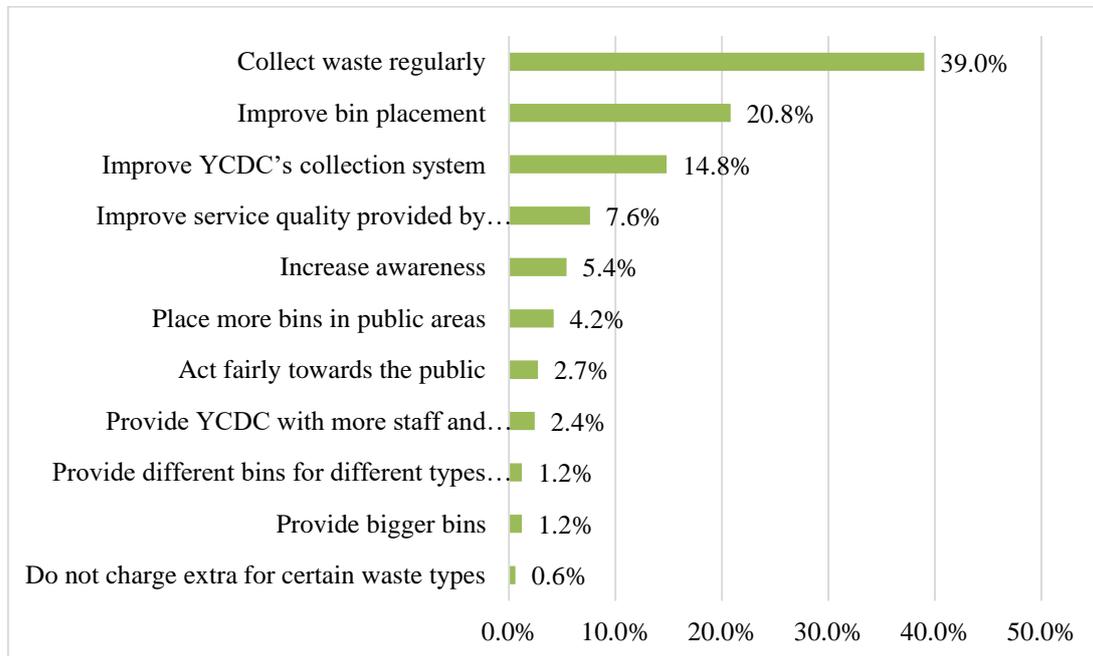


Public Expectations of YCDC Services

Public expectations of YCDC’s services are also an important factor to consider. A majority of respondents (42%) said that they want YCDC’s waste management system to be more systematic and better overall. Twenty-one percent of respondents want YCDC to apply a better bin-placing system, while 15% want YCDC to improve its waste collection system. A minority of respondents (4%) want YCDC to place more bins or waste containers in public areas and provide bins for different types of waste. These small numbers clearly show that public awareness of waste separation practices is very low. Therefore, YCDC should engage in additional campaigns and enforce proper waste separation practices, while also providing the infrastructure necessary to dispose of waste accordingly.

Around 13% of respondents wanted YCDC to provide better services to the public. Among the respondents who indicated this desire, 8% wanted YCDC staff to improve the quality of service, while 3% of expected YCDC to act fairly towards the public. Two percent of respondents added that they want YCDC to increase the number of staff members and garbage collecting vehicles to provide better services. Interestingly, only a few respondents (1%) complained about the cost of waste disposal and said that they do not want YCDC to extra for collecting pieces of wood, branches, and similar items.

Figure. 16 How could YCDC improve its waste collection services?

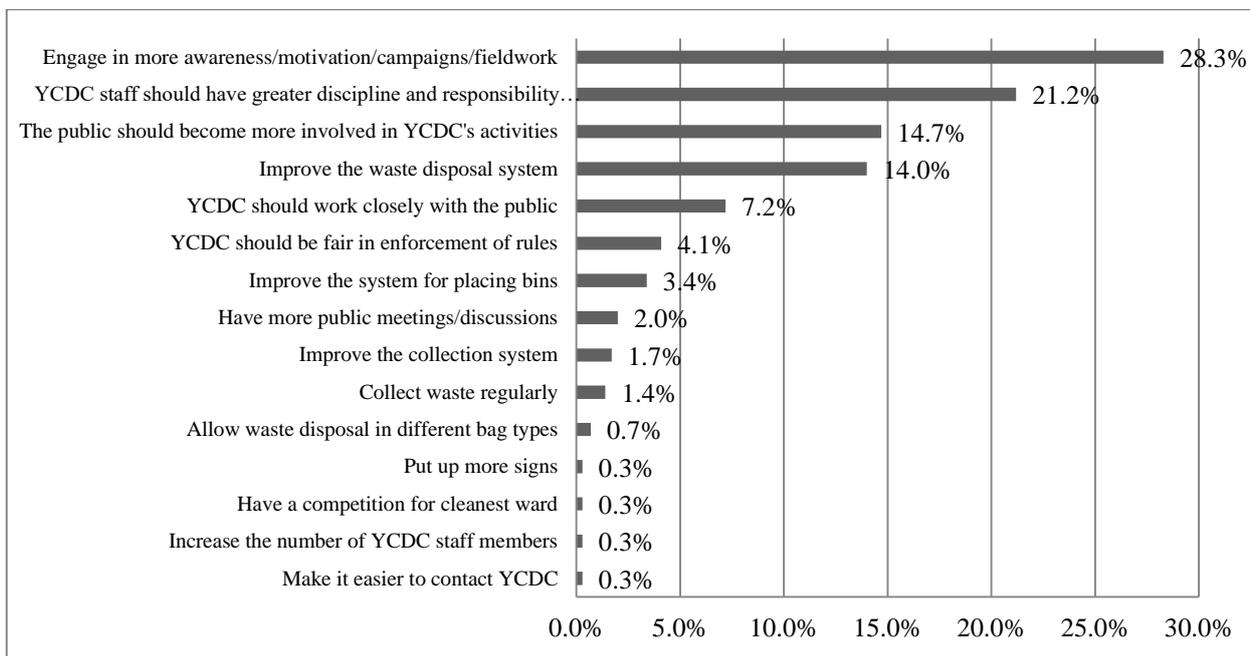


Public Suggestions on Improving YCDC Services

Public suggestions play a vital role in influencing YCDC to improve its waste management services. Twenty-eight percent of respondents suggested that YCDC should focus more on public awareness campaigns, by providing the public with motivation to dispose of waste properly and engaging in fieldwork. In addition, 21% of respondents suggested that YCDC should take more responsibility for the services it provides.

About 4% respondents suggested that the YCDC should be fair in its actions towards those who do not abide by the rules and laws, disposing of waste in public areas and other such violations. Interestingly, about 15% suggested that the public should willingly become involved in activities organized by the YCDC. On the other hand, 7% of respondents suggested that the YCDC should work closely with the public, to have more public meetings, have public competitions among wards for which is the cleanest, and collect waste regularly. Moreover, about 19% of respondents made suggestions on how YCDC might improve waste disposal and management. Some suggested that YCDC should provide a better means to contact its staff, a better disposal system, a better collection system, and a better system for placing bins. Only a few respondents suggested that YCDC should increase the number of its staff members, put up more signs, and allow bags of different colors to be used for waste disposal. Around 2% of respondents declined to answer.

Figure. 17 How can YCDC improve its services?



Conclusion and Recommendations

It is essential for YCDC to improve its waste management system and garbage collection services. Although a majority of the respondents to our survey believe that the city is clean, this opinion does not cover all districts.

Respondents in the Southern District perceive Yangon City as less clean than respondents in the Western District, where people seem to be happiest with the cleanliness of the city. Therefore, it can be said that not all of the districts in Yangon are served equally, with some places receiving better services than others.

Public awareness of waste disposal practices and regulations is shaped by the frequency of daily waste disposal. The findings of this survey indicate that people in Yangon have overall good waste disposal practices, as most people dispose of their waste daily or once every two or three days.

However, according to the findings, waste separation practices are poor, as over 70% of people do not separate their waste. In general, individuals are likely to separate different types of trash. However, our survey also found that even if waste is separated, it is combined again during the disposal process, discouraging residents from paying much attention to proper waste separation.

Our survey revealed that there is ample room for YCDC to improve its waste management system. Many respondents suggested that YCDC should take more responsibility for the services it provides and become more involved in public waste management activities. Finally, increasing the number of staff members and other resources would go a long way towards improving the system. The recommendations of this study are as follow:

- Improper waste disposal behavior should be restricted by rules and regulations as well as effective enforcement to ensure improvement of waste collection services.
- The public's awareness of proper waste disposal should be raised and encouraged.
- To reduce the volume of waste, Yangon city should ban single-use plastic and create an efficient system for recycling waste
- Trash bins for waste separation should be made available, with separate collection containers for dry and wet waste as well as recyclable trash
- Trash bins and containers should be labeled with the contact information of YCDC
- Designated waste collection points should be easily accessible to everyone ■

■ **Naushawng Development Institute (NDI)** is an independent, non-profit education and development organization founded on April 9th 2009 by Kachin scholars committed to strengthening democracy and community development in northern Myanmar. NDI contributes to democratic transition, peace building and sustainable development in Myanmar through training; education; advocacy; research and policy development analysis, as well as networking

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