



*Strengthening local capacity
in the economic analysis
of environmental issues*

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Improving Solid Waste Management in Urban Myanmar – A Study from Yangon

Solid waste management (SWM) is a major environmental concern in Yangon City in Myanmar, as it is for many cities in the developing world. To help policy makers improve the SWM situation, a new EEPSEA study has assessed the willingness of urban households to pay for improvement in the city's SWM services. The study is the work of Mya Lwin Lwin Aung from Yangon. Overall, it finds that there is a strong demand for improvements in SWM in the city, as many residents are concerned about the impact that waste has on health and on the environment. Because of this, most households are willing to spend more on SWM than they do at present.

Given people's willingness to pay for improvements in SWM, the study finds that the revenue generated from waste management fees could be twice its current amount. This could provide some (although not all) of the resources needed for significant infrastructure and service enhancements. The study highlights the current lack of trust between the YCDC, which manages solid waste in the city, and the general public. The study, therefore, highlights the need for households and the YCDC staff to reach a mutual understanding regarding SWM in Yangon, and then to establish a SWM improvement scheme that is trusted by all parties.



A summary of EEPSEA Research Report No. 2016-SRG7:
"Assessment of Public's Willingness to Pay
for Solid Waste Management in Yangon, Myanmar," by Mya Lwin Lwin Aung.
Comments should be sent to Ms. Mya Lwin Lwin Aung, No-26, 64th Street, Ward-3,
Botahtaung Township, Yangon, 11161 Myanmar.
Tel: +959 449 249 925; Email: myalwinlwinaung@gmail.com

The SWM challenge in Yangon

Yangon is the largest city in Myanmar, with a total population of about 5.2 million people. In the past decade, the city has seen a significant increase in the amount of solid waste generated by its citizens and businesses. This has had adverse effects on both human health and the environment. Over the past two or three years, government agencies have tried hard to improve SWM services in the city. However, the services still remain poor.

The low quality of SWM in Yangon is the result of a number of factors, including a lack of planning and legislation, insufficient public awareness and financial support, and the use of obsolete equipment. In addition, in the last decade, the city has grown rapidly, and this growth has outpaced the expansion of its infrastructure and utility services.

The public agency responsible for SWM in Yangon is the Disposal and Cemeteries Department of the Pollution Control and Cleansing Department, which is under the Yangon City Development Committee (YCDC). SWM in Yangon City is financed by the service charges collected by the YCDC. The rate charged depends on the location and the type of service provided.

Although the YCDC plans to offer improved SWM services, this will require additional investment in equipment and machinery. With the budget currently available, the government is not able to carry out the necessary improvement work.

Garbage disposal site in Yangon City, Myanmar
Photo by Mya Lwin Lwin Aung



How to improve SWM in Yangon

To provide information on the importance of improving SWM in the city (and so help policy makers justify new investment or increased charges), the study assessed the willingness to pay of the local communities in urban and suburban Yangon for waste disposal and for improvements in this service. It also identified the factors affecting people's willingness to pay, and assessed the level of awareness that residents in Yangon City have about the importance of the city's SWM program.

To get the information needed, household surveys were conducted in two urban townships (Botahtaung and Pazundaung). Interviews were also conducted in two suburban townships (Insein and North Okkala). Although a total of 800 respondents were interviewed, 10 were not able to complete the interview. The study's findings are therefore based on information obtained from 790 respondents, 53% of whom are female and 47% are male. Secondary information was also obtained from various sources including published and unpublished reports as well as census data.

Gauging willingness to pay

The information gathered from these interviews was used to get an understanding of how households dispose of their waste and their attitudes toward service charges. The household surveys were also used to ask people how much they would be willing to pay for an improvement in SWM. This part of the study was restricted to 390 respondents from the two urban townships.

To gauge willingness to pay, participants were given a pictorial information booklet, which details the current solid waste disposal system and described proposed improvements. These proposed improvements involved every household having waste bins positioned nearby so that people would not need to walk far to dispose of their waste properly. Participants were also told that waste would be collected at least thrice a week to eliminate foul odor, to keep the environment clean, and to reduce waste-related health problems.

The booklets also showed that investment in more bins, vehicles, and skilled workers would be needed.

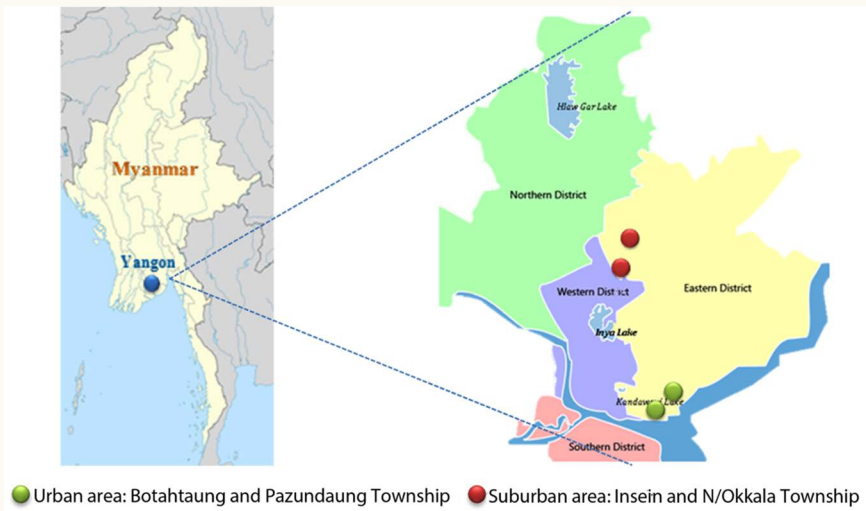


Figure 1. Map of Yangon and location of study areas

They explained that full government funding would not be possible at this point because of budget constraints. Accordingly, they outlined the need for funding to come from users' payments. The respondents were then asked if they would be willing to pay the YCDC more if the collection services were improve as described. People's willingness to spend money on solid waste management was measured using five different bid prices: MMK 800 (USD 0.8); MMK 1,000 (USD 1.0); MMK 1,500 (USD 1.5); MMK 2,000 (USD 2.0); and MMK 3,000 (USD 3.0).

What people think of waste management in Yangon

Currently, almost all of the respondents (93% from Botahtaung and 100% from Pazundaung) dispose of their waste by bringing it to secondary municipal garbage stations. On average, each house produces around five YCDC standard-size bags (16 x 28 inches) of trash per week. Only 3% of the respondents do not take their waste to the disposal site themselves and, instead, get a

private service provider to do it for them.

Half of the respondents from Botahtaung and around 40% of those from Pazundaung thought that solid waste collection is a big problem, not only for themselves but also for their neighborhoods. They are mainly concerned with health problems and the mess that poor waste management produces. Specifically, 38% of the respondents said that the foul odor is the problem that concerns them most, while 18% said that the main problem is the presence of harmful insects and rats.

The YCDC currently collects service charges for waste collection on a quarterly basis, but some respondents use other payment schemes with private service providers for their own convenience. Their willingness to pay for these charges depends on the payment systems they use.

What improvements should be made

There is general agreement over the ways by which SWM in Yangon can be improved: by upgrading machinery, increasing human resources,

implementing rules and regulations properly, and providing secondary disposal sites in more convenient locations. For example, around 38.7% (151 respondents) suggested that the proper implementation of rules and regulations is important because although the YCDC has told people to use green and blue bags when disposing of their solid waste, only few follow the correct procedures; many throw their rubbish away without any care.

Over 90% of the respondents strongly agreed that both the groups in charge of SWM and individual citizens have to take equal responsibility for proper waste disposal. When asked about their preferences regarding payment schemes for SWM services, the largest group said they would prefer a monthly payment system.

How much would people be willing to pay for improvements?

Among the 390 respondents interviewed for the WTP study, 292 used only public solid waste management services, whereas the remaining 98 used both private and public waste collectors. The 292 respondents who use the YCDC's services exclusively pay MMK 600 per month, which is much lower than the mean price of MMK 1,596.94 that households using the services of both the YCDC and private collectors pay monthly.

The study found that the majority of the respondents are willing to pay MMK 800 (USD 0.8) per month for improved SWM services. This is not surprising as it is not much

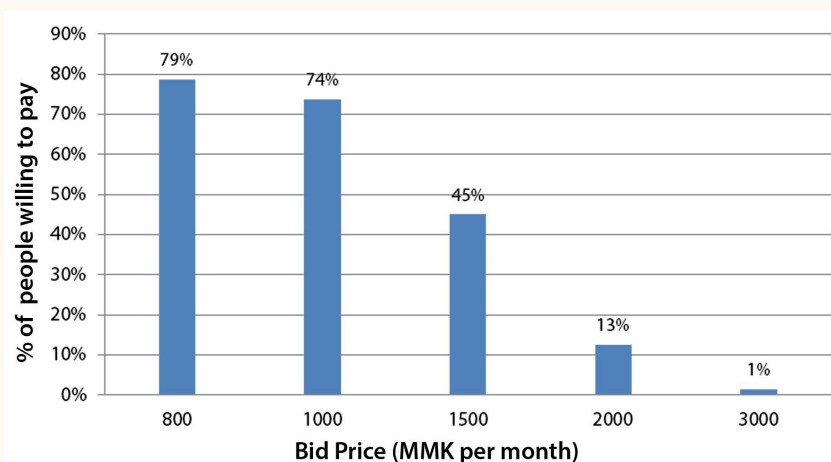


Figure 2. Urban households' willingness to pay for solid waste management
Note: USD 1 = MMK 1,000

higher than the current charge of MMK 600 (USD 0.6); some people are already spending even more for private services. A small minority of households were willing to spend MMK 3,000 (USD 3.0).

By multiplying the mean willingness to pay by half of the 1.09 million households in Yangon, the study found that the potential revenue that could be generated from SWM fees would be between MMK 597.30 million (USD 0.60 million) and MMK 607.20 million (USD 0.61 million). This means that the revenue that the YCDC receives from waste management fees could be twice its current level. However, note that the estimated cost of improvements would be three to four times the potential revenue, thus, the government would still have to shoulder significant additional expenses.

The respondents' willingness to pay depended on their expectations about the improvements that would be made to SWM services. The key issues that affected people's willingness to pay included how

conveniently located the new waste collection system would be and how much cleaner their communities would become. For instance, 49% of the respondents from Botahtaung and 29% of those from Pazundaung were willing to pay for improvements because they believed that spending more would make solid waste disposal more convenient.

Some respondents did not think they should have to pay more. For example, 33% of the respondents said they would not pay more as they are already paying their taxes. The second most common reason for not wanting to pay more (given by about 20% of respondents) was that they did not think there would be any improvement in the SWM service they would receive even if they paid additional fees. Some 14% of the respondents believed that it is not their responsibility to take action and the same percentage thought that the current system is already acceptable.

The study also found that some of the households that do not want to pay the YCDC more for

its services have occasionally spent more money on similar services provided by other organizations as they have found these to be more satisfactory.

The importance of trust

Overall, the study found that one of the main factors influencing the views of Yangon residents about the SWM system in their city is the issue of trust. People were keen to see improvements in the service, but uncertain that paying increased fees would deliver the improvements they desired.

This shows that there is an urgent need for households and the YCDC staff to reach a mutual understanding regarding SWM in Yangon and, based on that, to establish SWM improvement scheme that the local community believes in, can get behind, support, and participate in properly.

All in all, the study concludes that, to improve the solid waste management system in Yangon, all relevant sectors of government and society at large must collaborate and participate together.

EEPSEA, SEARCA Building,
College, Los Baños,
Laguna 4031 Philippines
Tel/Fax: +63 49 501 3593

Email: admin@eepsea.net

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