

# Public Perception on Solid Waste and Public Cleansing Management Bill 2007 towards Sustainable Waste Management in Malaysia

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## EXECUTIVE SUMMARY

Lack of appropriate policy is the main constraint to sustainable waste management in Malaysia. As a result, the Solid Waste and Public Cleansing Management Bill (SWPCM) was approved in 2007. Its aims are to provide an act and regulate the management of solid waste and public cleansing in order to maintain proper sanitation in the country. The Bill provides for the administrative bodies authorized in MSW management and the tribunal for solid waste management services. The objective of this paper is to investigate the perception of the public in regards to the current waste management system in the country and future waste management, particularly in relation to SWPCM Bill 2007. To accomplish this, questionnaires consisting of 45 questions were randomly distributed to 694 respondents to obtain 96% confidence level. Data collected were analyzed using SPSS. Results indicated that 86% of the public is satisfied with the current waste management system. The high satisfactory level probably is related to the fact that only reliable waste management contractors are appointed and renewed after an interim period. Contracts of waste managers with high number of complaints will not be renewed and they are directed to stop their collection services. Since the passing of the Bill, government had declared that unsatisfactory contractors will be terminated from their contract once the SWPCM Bill 2007 is enforced. However, 13% is dissatisfied with the collection frequency. The public (67-78%) has relatively high knowledge on the waste management issues such as final disposal option of the municipal solid waste and others. However, the majority of the public (69%) are not aware of the existence of SWPCM Bill 2007 and its passing by the parliament in August 2007. This is mainly due to the absence of notification to the general public from the ministry level. Responses from public regarding the deposit refund system was mainly negative where majority (87%) disagreed to pay deposit for returnable packaging materials as allocated in Part X of the Bill. This is due to the fact that the system is currently absent in the country and its introduction will affect the consumers' economy as they will lose the deposits if they did not return the materials to the manufacturer. The majority (64%) of the respondents agreed with the regulation of segregation at source. This probably is due to the high awareness on waste disposal issues. Various campaigns were aired in mass-media indicating the deteriorating quality of the environment due to the indiscriminate disposal of MSW into landfill.

Nevertheless, 97% are confident that the Bill will improve the current waste management system and able to promote a more sustainable solid waste management system for the country.

## **INTRODUCTION**

Population increase resulted with larger demand for goods and services. It leads to the introduction of various products to cater the need of the consumer society (Odum and Odum, 2006). As a consequent, more resources will be discarded and disposed off as waste. In developed nations with appropriate technologies in place, waste management system is maintained efficiently with minimum environmental impacts. In more environmentally-concerned nations sustainability is the main concept to be pursued in ensuring the harmonization between human and the environment. However, in developing and under developed nations, improper waste management caused various environmental problems particularly in urban areas (Salhofer et al, 2008). Rapid urbanization, changes in consumption pattern and lack of recycling activities resulted with the increase in waste generation. Waste management has been reported as one of the prominent environmental problem in many urban areas in the ASEAN region (Ngoc and Schnitzer, 2009). Similarly in other parts of the world particularly in the African cities (Rahji and Oloruntopa, 2009) improper waste management led to serious detrimental impacts to the environment.

Malaysia as a rapidly developing country generates more than 30,000 tonnes of municipal solid waste (MSW) everyday (Fauziah and Agamuthu, 2009). The 3% annual increase in MSW generation in the country had caused a real impact on waste managers and the local authorities (Fauziah et al., 2004). The seriousness of waste management issues were highlighted by the government after the contamination of drinking water supply with landfill leachate in 2006. Immediate closure of risky disposal sites was ordered and new landfill sites have been identified (Agamuthu and Fauziah, 2008). Malaysia lacks the driver of proper waste management system that the improvement in the country's waste management system is yet to be achieved (Agamuthu et al, 2009). Realizing that the lack of appropriate policy is a factor that averts sustainable waste management in the country, the Solid Waste and Public Cleansing Management Bill (SWPCM) was approved in 2007. After 10 year of debating, the Bill was passed by the parliament with the aim to provide an act and regulate the management of solid waste and public cleansing in order to maintain proper sanitation in the country. SWPCM Bill 2007 caters the administrative bodies authorized in MSW management including the approval for the construction, alteration or closure of solid waste management facilities, licensing and enforcement provisions, and the tribunal for solid waste management services (Agamuthu et al., 2009a). However, this Bill is yet to be implemented. It has been proposed for implementation in September 2009. Since it entails public participation in order to achieve its objectives, positive public perception is very crucial. This paper is aimed to investigate the perception of the public in regards to the current waste management system in the country and future waste management particularly related to SWPCM Bill 2007.

## **RESEARCH METHODOLOGY**

Survey was conducted in two stages namely preliminary survey of 30 people and complete survey on 694 people to obtain 96% level of confidence. Each survey form contains 45 questions comprising of various issues pertaining to solid waste management in Malaysia. Among them are level of public knowledge and satisfaction on the existing waste management system, the willingness to participate in Pay As You Throw (PAYT) system and knowledge on the SWPCM Bill 2007. Respondents were selected randomly to represent the Malaysian population.

Questionnaires were analyzed to determine the correlation of various issues with the respondents' background. The analysis was computed using SPSS system in identifying the public perception on the SWPCM Bill 2007.

## RESULTS AND DISCUSSIONS

Majority of the respondents (57%) were female while male respondents were 43%. The background of respondents selected for the study is summarized in Table 1.

**Table 1 Background data of respondents**

Background information	Respondents Groups		
	Age	Below 20 years old	21-40 years old
	15%	52%	33%
Gender	Male		Female
	43%		57%
Education Background	Primary education	Secondary education	Tertiary education
	13%	48%	39%

The largest (48%) group of respondents has secondary education followed by tertiary education (39%) and primary education (13%). Various responses were received from the respondents in regards to the waste management system in the country. Consecutive sections discuss the responses obtained from the study.

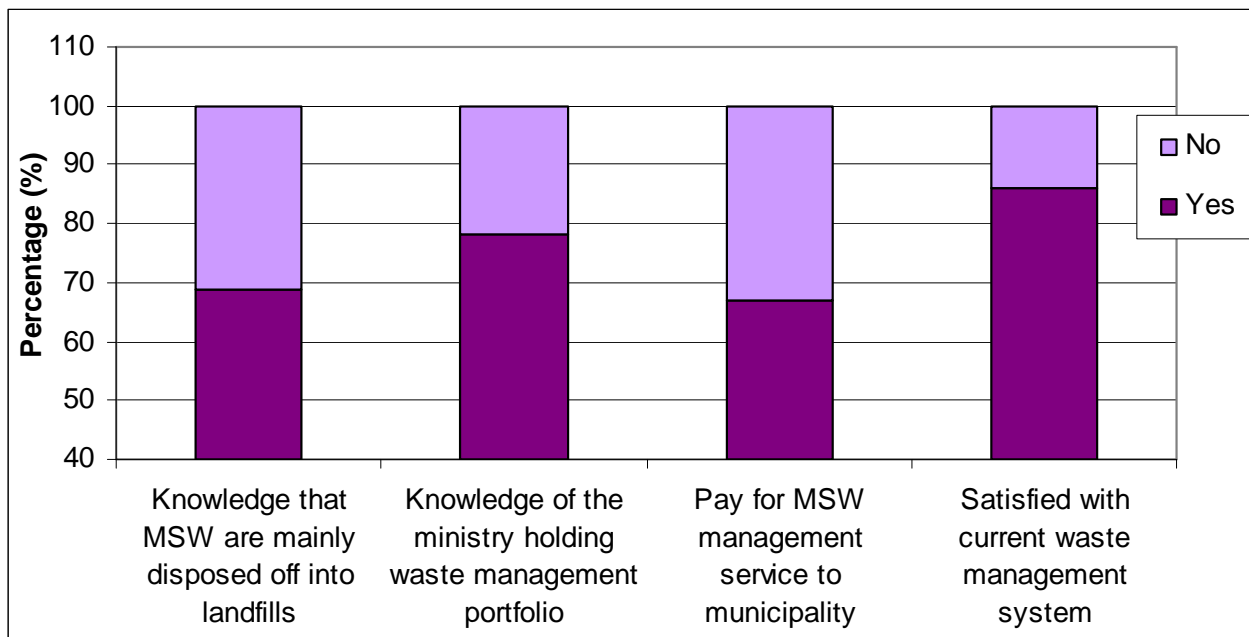
### Current Waste Management

In regards to opinion of current waste management in the country, 86% is satisfied while 14% are not satisfied. The high satisfactory level probably is related to the fact that only reliable waste management contractors are appointed and renewed after an interim period. Contracts of waste managers with high number of complaints will not be renewed and they are directed to stop their collection services. Since the passing of the Bill, government had declared that unsatisfactory contractors will be terminated from their contract once the SWPCM Bill 2007 is enforced (Agamuthu, 2009a). Therefore, small and medium scale waste contractors have high tendency to maintain good rapport in order to ensure that their services and contract will be prolonged.

Approximately 87% of the population is satisfied with the current waste collection frequency and management services. This probably resulted from the high efficiency among the waste collection contractors in ensuring wastes are properly collected from their service area. This is also closely related to the government's notification of contract termination to unsatisfactory waste management services (Agamuthu et al, 2009a).

Almost all of the respondents are aware of the waste managers in charge to provide collection service to them. This is generally due to the direct involvement between household and the waste managers. In addition to that, public are encouraged to report any complaint and dissatisfactions in regards to the waste management service received to the local authorities.

The majority of the respondents (69%) knew that the main waste disposal option is landfilling, shown in Figure 1. The mass-media campaigns on how indiscriminate MSW disposal shorten the life-span of landfills in Malaysia has become the 'eye-opener' to the public on the final destination of the waste and its consequences.



**Figure 1 Public response to current waste management issues.**

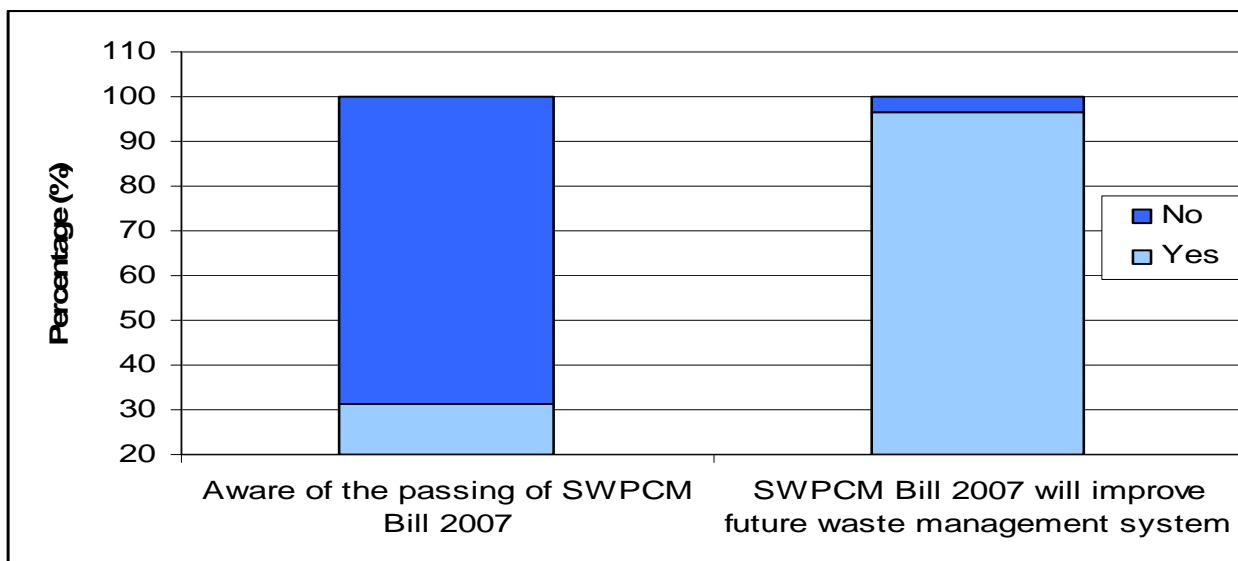
Similarly, the majority (78%) knew the right authority responsible in landfill development that is the Ministry of Housing and Local Government (MHLG). Only 22% responded incorrectly. Some of the public find it confusing as to determine the ministry in charge of landfill and waste management, as the portfolio comes under MHLG and not the Ministry of Natural Resources and Environment. This indicated insufficient exposure from the government on such knowledge to the public (Fauziah *et al.*, 2004).

In regards to payment for the waste management services, approximately 33% are not sure if they are charged by the municipality (Figure 1). This is because the charges are included in the assessment of each household which are paid twice annually. Therefore, some are not aware of the fact that they are actually paying for the waste management services. Even though privatization began in 1992, public was not required to pay to the concessionaires directly. The payments are between the local municipality and the waste management service providers like Alam Flora (P) Ltd. and Southern Waste Management (P) Ltd. (Agamuthu *et al.*, 2004; Kamariah, 1998).

In terms of waste segregation, 58% respondents did not segregate their MSW. This is generally due to absence of mandatory recycling practice in the country. As a result, only 42% segregate the waste for recycle purpose. Recycling activities not common since the public has the perception that recycling is a very inconvenient practice. In addition, the low market price of recyclable materials also resulted with low recycling rate (Fauziah and Agamuthu, 2009).

#### **Awareness on SWPCM Bill 2007**

Though SWPCM Bill 2007 has been passed since August 2007, the majority (69%) of respondents is not aware of its existence. Figure 2 illustrates the public awareness and opinion in regards to SWPCM Bill 2007.



**Figure 2 Public awareness and opinion in regards to SWPCM Bill 2007**

Only 31% are aware of the passing of the Bill. This is mainly due to the absence of notification to the general public from the ministry level. Those aware of the existence of the Bill are mainly from the higher education group. Analysis indicates a significant correlation between educational background and the awareness of SWPCM Bill 2007 passing. It shows that more respondents with higher level of education are aware of the Bill than the respondents with lower educational background.

As for the future waste management of the country, more than 96% of the respondents agreed that the implementation of the Bill will improve the waste management system. The implementation of the Bill is also predicted to promote a more sustainable waste management in the country based on the various issues discussed. Among others are the regulations to waste generators to segregate waste, recycling activities made mandatory and others.

The majority (64%) of the respondents agreed with the regulation of segregation at source. This probably is due to the high awareness on waste disposal issues. Various campaigns were aired in mass-media indicating the deteriorating quality of the environment due to the indiscriminate disposal of MSW into landfill. The campaign was initiated to inform public regarding the importance of recycling, as it diverts more than 50% of MSW from landfill disposal. This is necessary as 95% of 30,000 tonnes MSW generated by Malaysian daily are disposed off into landfills together with all valuable materials, while only 5% are retrieved for recycling purpose (Agamuthu et al, 2009; Saeed et al, 2009).

Though majority of respondents agreed with home segregation, they disagreed with the monthly payment scheme for waste management services. Having the charges of waste management service included in the assessment all the while was less distressful as payment was made biannually. Imposing separate charges will result with more negative responses as public find the extra charges burdening their finance (Rahji and Oloruntoba, 2009). However, as the payment will be made mandatory, failure to comply will result in offence and liable to fines, the public will gradually be committed to the proposed terms of payment.

SWPCM Bill 2007 allocated a term on deposit refund system under Part X Reduction and Recovery of Controlled Solid Waste. Responses from public regarding the matter were mainly negative where majority (87%) disagreed to pay deposit for returnable packaging materials. This is due to the fact that

the system is currently absent in the country and its introduction will affect the consumers' economy as they will lose the deposits if they did not return the materials to the manufacturer. Even though it is not favoured by the majority of the consumers, in the long run the deposit refund system will prevent valuable materials such as corrugated boxes, bottles, etc and hazardous items such as batteries, from being commingled in the MSW. Currently, such regulations and impositions to consumers in regards to disposal of packaging material or hazardous material is non-existence that these materials were discarded haphazardly into the MSW stream (Fauziah and Agamuthu, 2008). Table 1 depicts the results of the survey pertaining to changes and issues addressed in the SWPCM Bill 2007.

**Table 2 Responses in regards to SWPCM Bill 2007.**

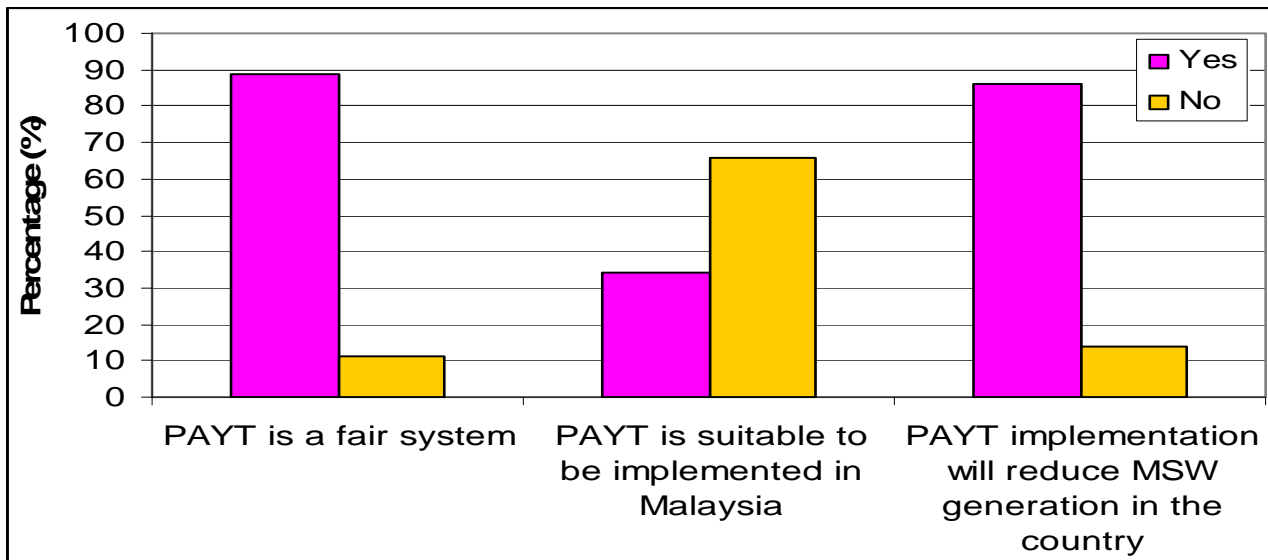
<b>Issues</b>	<b>Positive responses %</b>	<b>Negative responses %</b>
Agree to home segregation prior to waste disposal	64	36
Agree to monthly payment for waste management services	9	91
Agree to pay deposit for returnable packaging materials	13	87
Preference to products labelled with recycling codes	84	16
Recycling rate will increase if it is made mandatory	99	1
Agree to Solid Waste tribunal to resolve matters regarding solid waste management in the country	81	19
Agree that stringent rules will improve public awareness in waste management issues	66	34

Also included in Part X of the Bill is the implementation of coding and labeling system for products to encourage recycling. This idea is well received by the respondents where 84% indicated their preference to purchase products labeled with recycling codes. In addition to that, the respondents also felt that the labeling system would help them to participate more actively in recycling.

Almost all respondents (99%) agree that recycling rate will increase if recycling is mandatory. As a result to this, more recycling facilities will be established to improve public convenience and participation in recycling activities. It was reported that the main factors contributing to the low recycling rate in the country is insufficient recycling facilities, as well as, the lack of economic drivers (Agamuthu et al, 2009; Fauziah and Agamuthu, 2006).

In regards to tribunals of SWPCM Bill 2007, 81% respondents agreed that to resolve matters regarding solid waste management in the country, the special tribunal is necessary. This generally is due to the fact that SWPCM Bill 2007 is a new Bill which needs specialized agency in managing the system and to deal with the offence and crime committed in regards to the SWPCM Bill 2007 implementation. Respondents also agreed that more stringent rules and regulations imposed in the Bill will improve public awareness on waste management issues. This is due to the 'carrot and stick' concept where public will be aware of the 'dos' and 'don'ts' in order to avoid themselves from being compounded due to ignorance.

In general, 89% respondents agree that PAYT system is fair since it imposed charges or fees of waste management service based on the weight of waste generated. Figure 3 depicts the public opinion on issues related to PAYT system.



**Figure 3 Public opinion on issues related to PAYT system.**

Only 11% respondents think that the system is unjust particularly when waste generator has no option but to generate high volume of waste for disposal. However, the majority of the respondents (86%) think that PAYT is a fair system. However, the majority of the respondents (66%) think that PAYT is not suitable to be implemented in Malaysia. This is probably due to the fact that if PAYT is implemented in Malaysia, the public will be affected in paying for waste management services separately. Therefore, most respondents would find it disagreeable and unattractive. Various reports indicated that public tend to refuse improvement in waste management system if it involves their finance (Rahji and Oloruntoba, 2009).

Regardless of the negative response to the suitability of PAYT implementation in Malaysia, approximately 86% of the respondents agreed that the implementation will reduce MSW generation in the country. This strengthens the fact that waste generator will tend to reduce waste generation as much as possible in order to cut the cost imposed on them. Therefore, this will eventually result in the significant reduction of waste generation in the country.

## **CONCLUSION**

Public in Malaysia has relatively high knowledge on the current issues of waste management. However, the majority was not aware of the existing and the passing of the SWPCM Bill 2007. Though the Bill is not well-known to the public in general, the public agreed that the Bill will improve the efficiency of the current waste management system once it is implemented. They also agreed that it will promote a more sustainable waste management system in Malaysia.

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