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A Review on the Effectiveness of Urban Solid Waste Management in Subang Jaya Municipal Council (MPSJ)

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ABSTRACT

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The Malaysian Solid Waste and Public Cleansing Management Act of 2007 (Act 672) was introduced in order to provide a comprehensive, integrated, cost-effective and sustainable system of solid waste management. This Act granted the Federal Government through the Federal Government Corporation known as the Solid Waste Management and Public Cleansing Corporation (SWCorp Malaysia) an executive power over managing urban solid waste and public cleanliness throughout Peninsular Malaysia. Should the Act be implemented at the state and local government level, solid waste and public cleanliness are managed by concessionaires chosen by the SWCorp Malaysia. Even though the Act had been gazetted by the Parliament, the State Government of Selangor had decided against its implementation. As consequence, on October 16, 2011, the state government terminated Alam Flora Sdn. Bhd (AFSB) as their waste management contractor. This means that local authority (LA) would resume their traditional duty as waste manager with state government as monitoring agency. There are positive and negative impacts resulted from this change in management of solid waste for the LA's. The positive impacts can be seen in terms of budget allocation and LA's level of involvement in the context of local scenario's. Regardless of this issue, LA's to rearrange their environmental management programs as the Federal Government power had been restricted. Termination of the Federal Government concessionaire's contractor (AFSB) caused LA's workload to increase drastically. Hiring new contractor for waste management service provider was time consuming and caused a delay in the management as the new contractor needed time be familiar with the system. Based on the analysis and findings from this research, MPSJ had proven that LAs that had vast resources were capable in managing their own solid waste issues. This obviously came from the initiatives and programmes that had been put together by the management, although there were still rooms for improvements in the future.

Keywords: *Urban Solid Waste Management; Effectiveness*

INTRODUCTION

Solid waste management in Malaysia has been facing many changes since a few decades ago. Prior to privatization, solid waste management and public cleansing were the LA's responsibilities, where smaller waste management services provider acted normally as the subcontractor. However, with the increasing costs of management, the situation resulted with the subcontractors not being paid promptly, leading to a drastically reduced efficiency of the management (Periathamby et al. 2009). Therefore, in September 1995, the Federal Government decided to privatize the management of solid waste and as an initial step, the privatization was being carried out on an interim basis. On January 1, 1997, solid waste collection and transportation all over Malaysia had been taken over by Southern Waste Sdn. Bhd. and AFSB (Yahya and Larsen, 2008). Then, in 2007, the Cabinet decided for full privatization at the Southern and Central Zone to take place as soon as the Act 672 came into force, which added Environment Idaman Sdn. Bhd (E-Idaman) as another concessionaire (Yahya and Larsen, 2008). The authority governing solid waste and public cleansing was shifted from state government and LA to the Federal Government Corporation (SWCorp Malaysia). Furthermore, the management cost will be shared between these two parties. LA will channel funds to a Federal Corporation that directly managed solid wastes and public cleansing. As an implication, this process had caused many reactions, especially in Selangor. It led to several management issues and disputes in the state of Selangor and other concerned parties. As Selangor is generating the highest amount of solid waste in

Malaysia, the solid waste management is very crucial and becomes a serious issue to all parties, including the public in general.

PROBLEM STATEMENT, AIM AND OBJECTIVE

Selangor had generated approximately 1.13 million tons of solid and household wastes in 2009 (Alam Flora, 2009) and it had spent around RM330 millions per month for all activities related to collection, transportation and disposal of household solid wastes. Before the privatization, solid wastes in Selangor were administrated by the LA with a joint management from the private concessionaire (AFSB). This is in accordance with the Concurrent List (List 3) of the Ninth Schedule of the Federal and State Constitution, which stated that both state and federal have jurisdiction over solid waste administration.

As the state government of Selangor decided not to implement this Act 672, AFSB contract as the waste management service provider has been terminated. This consequently had shifted the responsibility of managing the solid waste in the whole state of Selangor under the respective LA and state government as the monitoring body. This transition has positive and negative impacts toward LAs. Termination of AFSB as the waste contractor would reduce monetary expenses, but in return, increase the workload for the LA.

The dwindling trust in the efficiency of the Federal Government underlies the disagreements between key stakeholders. The LAs stated disagreement issues with the Federal Government and are unconvinced at the accountability and transparency of the Federal Government Corporation in providing better and more efficient waste disposal services. Thus, empowering LAs in managing waste disposal is more effective compared to the previous practice. Therefore, this paper sought to find out a clearer picture of the management of solid waste after the implementation of the new system conducted by the LA. It also compared the effectiveness of the new implementation system, advantages and the disadvantages of it compared to the previous one.

METHODOLOGY

This study adopted three methods of data collection and analysis. This analysis will lead the researcher on the study's findings as a basis for the formation of the recommendations. The survey conducted also aimed to assess the input of knowledge, experience and opinions on the urban solid waste management regarding the previous management and also with the current set of the management team. Through the analysis, various aspects of solid waste management were observed, mainly in the management of the solid waste and solid waste minimization programmes.

Each analysis was also supported with observations by the researcher on the study area. Through this approach, the issues and problems of the research can be understood. In ensuring and determining the aspects that hinder the effectiveness of urban solid waste management by MPSJ, the researcher also conducted two survey techniques which are expert interviews and document review which included information from secondary sources and LA's views.

Data Collection

The qualitative method was done by interviewing the responsible respondents based on the study's scope. Based on the interview method, relevant information associated with the study can be collected. In this study, the Environmental Officer from MPSJ Environmental Management Department and stakeholders such as the community organisation (Jawatan Kuasa Penduduk (JKP) Zon 7, Putra Height) had been interviewed in order to collect the suitable and relevant data for the study.

Analysis

Analysis on the findings was divided into two main aspects, the first one being the analysis on the managerial aspect of waste management. This would determine the effectiveness and efficiency of the management between the previous and current one. In this aspect, the study focused on the element of budget allocated by the local authority who was the employer towards the employee which was the contractor that managed solid waste. The complaint received regarding the domestic waste management from the public was another element included in this managerial aspect. The number of complaints would determine the satisfactions level of services provided by the previous and current management. Notice to Correct (NTC) was also included under this managerial aspect. The NTC was the supervision and monitoring measure used by the MPSJ in ensuring the best possible services provided by the contractor to the public. Through this approach, if the number of NTC issued was as much as the complaint made by the public, it signalled that the appointed contractor was not up to the standards required. The standards are; Collection Schedule and Public Cleanliness.

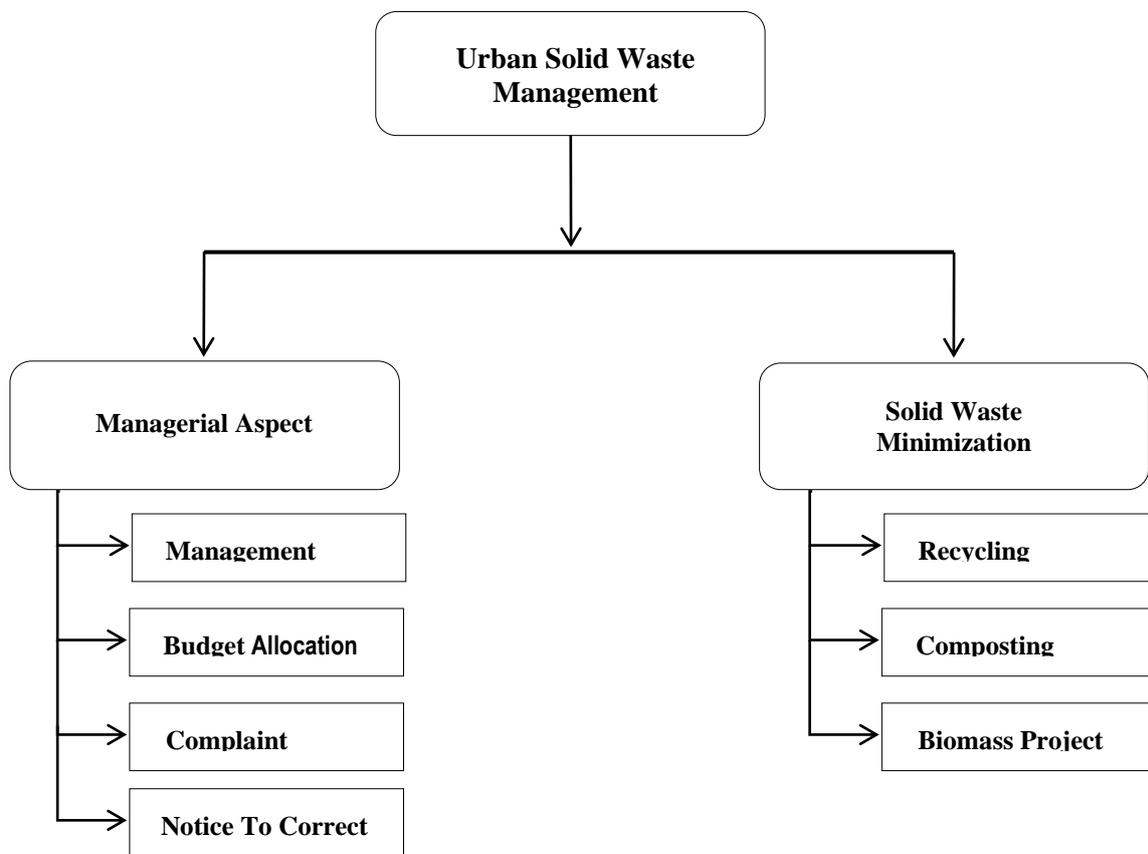


Figure 1.1: The Urban Solid Waste Management

Apart from the above elements, the services delivery in terms of domestic waste and recycling waste collections were the elements also being analysed and included in the managerial aspect. This analysis focused on the collection schedule exercised by the AFSB and also the MPSJ. The approach taken by both sets of management would determine how effective and systematic the waste management was practiced. Moreover, this managerial aspect also considered the management framework of the previous and current management team. This element focused on the management framework of solid waste management where there were issues that arose regarding the transition in management of solid waste in the state of Selangor. By having this, it would determine which management framework was the most suitable in dealing with urban solid waste in the state of Selangor.

The second aspect involved in this analysis would be the solid waste minimization programmes. In this aspect of solid waste minimization, there are numbers of initiatives that had been implemented by the MPSJ. These waste minimizations programmes actually held their own significance to the urban solid waste management. The reason was that; waste minimization would assist the local authority to reduce their budget for solid waste management. The over provision of budget can be used for the benefit of the public in the MPSJ area. The initiatives involved in this solid waste minimization programmes by MPSJ were recycling and composting programs and also the biomass project.

RESULTS

Based on the analysis that had been outlined in the above section for this research, it can be summarized that urban solid waste management was best managed by the local authority itself if there were vast resources and proper planning as shown by the MPSJ. In comparison to the previous management which was by AFSB, LAs such as MPSJ had a better managerial and waste minimization aspect. The findings based on these two aspects are as follows:

Managerial and Administration Elements

a. Management framework

Based on the analysis, the comparison on the management frameworks between the previous and current management was that it involved the issues of the chain of command or bureaucracy. According to the MPSJ officer, the current management by the MPSJ created less bureaucratic issues in dealing with public complaints, especially in terms of time to respond towards complaints. When there were less bureaucratic or red tape issues, the service delivery would reach the targeted group much easier. If there was a complaint made by the public, the LA can respond directly to the issues without the need to consult with the main contractor like in the previous management procedure. The LA would treat the issues from the beginning until the problem was solved and any improvements in the solid waste management programmes can be implemented easily.

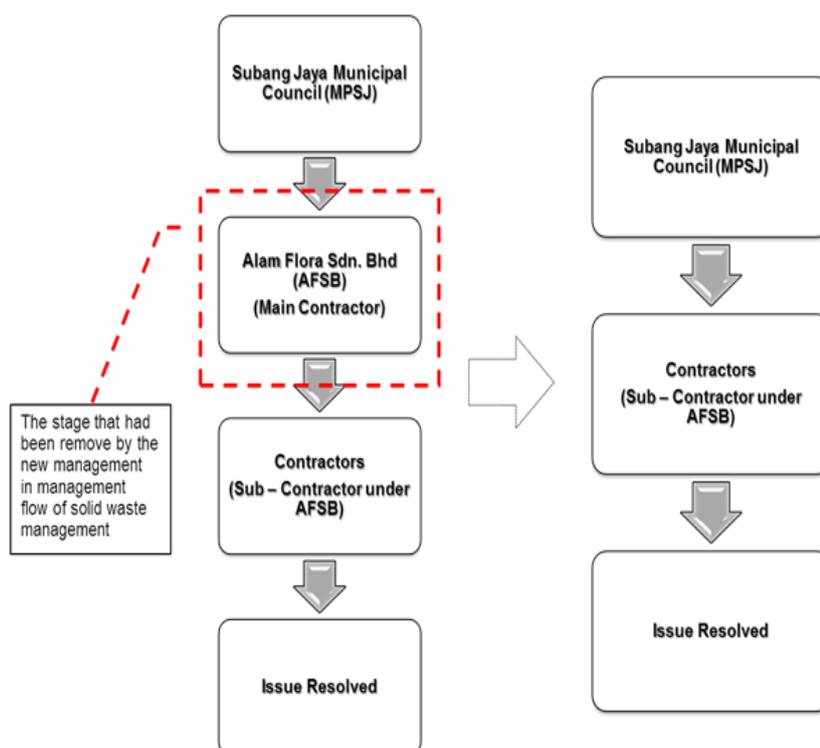


Figure 1.2: The differences of the management flow between AFSB and (MPSJ) in 2012

b. Budget allocation

In this element of analysis, the previous management which was run by the concessionaire, it required huge financial resources in managing the urban solid wastes. Although equipped with vast financial resources, the services provided by the concessionaire in Subang Jaya area were not worth the money spent. This condition was totally differed compared to the management by the LA itself. MPSJ had gradually managed to reduce their waste management cost since the take-over from the concessionaire. This actually helped the enormous programmes conducted by the MPSJ in dealing with waste which eventually gave satisfied services to the public.

Table 1.1: MPSJ Budget Allocation for Solid Waste Management and Public Cleansing Services 2007-2013

Breakdown of Expenses on Solid Waste Management and Public Cleansing	Year (RM Millions)						
	2007	2008	2009	2010	2011	2012	2013
Garbage Collection	-	-	-	-	28.4	19.5	19.4
Cleansing	-	-	-	-	38.2	33.7	33.8
Disposal	-	-	-	-	6.1	12.1	12.3
Total	65	70	76	70	72.7	65.3	65.5

Source: Adapted from Laporan Tahunan Bahagian Perkhidmatan Bandar MPSJ, 2010, 2011, 2012 and Draf Laporan Jabatan Pengurusan Alam Sekitar, 2013

Through an analysis of this initiative, the current management had proven that they were capable in providing better services to the users. The services provided had accomplished the standard requirements and the scope of work outlined by the LA compared to the previous management. This might be influenced by the relentless effort by the LA in monitoring the performance of hired contractors. Table 1.2 below shows the number of NTCs that had been issued by MPSJ toward the contractors who did not comply with the standard, specification and scope of work that they were tied to. This table consists of the NTC data from year 2010 until the latest year of 2013.

Table 1.2: Number of NTCs Issued By MPSJ towards Contractors (Domestic Waste)

	2010	2011	2012	2013	Overall Total
NTC Issued	224	454	147	68	893
Percentages (%)	25.08	50.84	16.46	7.62	100.0

Sources: Adapted from Laporan Tahunan Bahagian Perkhidmatan Bandar MPSJ, 2010, 2011, 2012 and Draf Laporan Jabatan Pengurusan Alam Sekitar, MPSJ, 2013

c. Complaints

The complaints were another element that supported the statement that urban solid waste management was best managed by the LA itself compared to the previous management by the concession company. Based on the analysis conducted, the number of complaints received during the previous management was much higher than the current management. This showed that although the previous management was an established waste management organisation, lack in quality control can contribute to a low standard of quality service delivery. Table 1.3 below shows the number of complaints received by MPSJ regarding domestic waste.

Table 1.3: Complaints Received by MPSJ Regarding Domestic Waste

	2010	2011	2012	2013	Overall Total	Percentages (%)
Domestic Waste Complaints Received	701	776	1,911	749	4,137	100.0
False Allegations	477	322	1,764	681	3,244	78.41
Percentages on False Allegations (%)	68.04	41.5	92.31	90.93	78.41	

Sources: Adapted from Laporan Tahunan Bahagian Perkhidmatan Bandar MPSJ, 2010, 2011, 2012 and Draf Laporan Jabatan Pengurusan Alam Sekitar, MPSJ, 2013

Based on Table 1.3, the data had clearly shown that there were decreasing patterns in terms of complaints made to MPSJ regarding the domestic waste. However, during the previous management in the year of 2010 and 2011, the data showed that the complaints received and were proven to be true allegations were much higher.

d. Relationship between Complaints and Notice to Correct (NTC)

The services provided were consistent and for that reason, the number of NTC issues was less compared to the number of complaints received by the MPSJ. This also showed that the current set of management had followed the standard and scope of work that had been set up by the LAs. This was different compared to the previous management of solid waste, where the complaints and the number of NTCs issued were higher.

Table 1.4: Complaints and Notice to Correct (NTC)

	2010	2011	2012	2013	Overall Total	Percentages (%)
Domestic Waste Complaint Received	701	776	1,911	749	4,137	100.0
NTC Issued	224	454	147	68	893	21.59
Percentages of NTC Issued (%)	31.95	58.5	7.69	9.07	21.58	100.0
False Allegations	477	322	1,764	681	3,244	78.41
Percentages of False Allegations (%)	68.04	41.5	92.31	90.93	78.41	

Source: A Review on Effectiveness of Urban Solid Waste Management in Selangor, A Case Study of Subang Jaya Municipal Council (MPSJ), 2014.

In regard to the current management of solid waste by the MPSJ that started their services in the full scale in 2012, the services provided were better compared to the previous management, although Table 1.4 above showed that the number of complaints received was the highest among all. The NTC was issued when the complaint was proven true but in this case, the NTCs issued by MPSJ were recorded differently. This can be concluded that the complaints made by the public might be true but the public might see the problem as a one-day situation and not on the daily basis collection schedule. Collection schedule was also another important element in reviewing the effectiveness of urban solid waste management between the current management (MPSJ) and the previous management (AFSB). Based on Table 1.5 and the analysis that had been carried out, the MPSJ had taken more proactive and more systematic measures in addressing the issues of high generation of waste in their jurisdiction area.

Table 1.5: Collection Schedule of Domestic and Recycling Waste by AFSB and MPSJ

Types of Waste	Collection Schedule (Day/Week)	
	MPSJ	AFSB
Domestic	3	2
Recycle	2	1

Sources: *Jabatan Pengurusan Alam Sekitar, MPSJ and AFSB, 2014*

Through this systematic and more comprehensive approach, it clearly showed that the current management was far more effective than the previous one. This statement was proven through Table 1.5. Although the waste generated kept increasing, the previous management did not take the appropriate measures to counter those problems.

Waste Minimization

a. Recycling program

Recycling programs that had been implemented by the MPSJ had achieved their target in minimizing the wastes generated. This achievement supported by the continuous effort from MPSJ in educating and informing the public about the benefits of this program. Public participation was the key element in ensuring that the waste minimization had an impact towards the generation of waste. The collaboration between the LA and public can help in reducing the management cost, especially in the LA area where effective measure such as this program can create a better waste management system.

b. Composting program

MPSJ as a responsible LA had tried their best in reducing waste generation in their administrated area. This waste minimization programmes actually aimed in reducing the management cost that kept increasing yearly and the LAs were burdened with this. Based on the analysis, the composting program was not only reduced the management cost, but it also created new marketable products that became new sources of income to the LA.

c. Smart partnership project

This smart partnership project that involved public university, related ministry, local R&D institution, the foreign government and the Federal Government had managed to come out with solution to achieve a more sustainable environment. This eventually had put MPSJ as the frontrunner in becoming an effective, innovative and sustainable LA in Malaysia. Through this, MPSJ had emerged as a good example to the other LAs throughout the country on how to effectively reduce the budget allocated for waste management.

d. Integrated biomass project

The implementation of this Integrated Biomass Project had proven that there was a number of programs and projects that can be planned and implemented by the LA in managing their solid wastes in a more effective way. This also proved that LAs that had their own ideas and initiatives such as MPSJ were more than capable of managing their solid wastes. This however was helped by the fact that MPSJ was more resourceful and wealthier compared to the other LAs.

CONCLUSION

Generally, this study was undertaken to assess the effectiveness of solid waste management by the LA which was exemplified by MPSJ. The Federal Government had actually striven towards a more

effective solid waste management by establishing a proper solid waste management legislation and system. The Malaysian Solid Waste and Public Cleansing Management Act of 2007 (Act 672) was introduced in order to provide a comprehensive, integrated, cost-effective and sustainable system of solid waste management.

Based on the analysis that had been carried out, there were many benefits that can be highlighted from the management transition on the Selangor solid waste management. One of the benefits that can be concluded from the analysis was that, the contract termination of AFSB as their waste management contractor can save lot of money as proven by MPSJ. With the increase in solid waste generation in Selangor, where Subang Jaya ranked as the top two waste generator in Selangor (Selangor Times, 2012), it was necessary for the LAs to come out with best possible solution without causing them with unnecessary costs. In MPSJ, the average cost for managing solid waste ranged from 65 to 76 million yearly. By reducing that cost for the third party, this budget can be used for other developmental programmes.

Other than that, by managing the solid waste collection themselves, the LAs in Selangor were directly involved with the process, thus understood the situation even better. LAs' communication with the public will be closer and every problem in the community would be detected and solved quickly. The problem of bureaucracy between the government and the public would be reduced through this approach. In addition, this would create more creative, active and progressive LAs in conducting environmental programs on their own and not only depending on the Federal Government's initiatives alone.

Although the management transition gave lots of benefits to the LAs in Selangor, there were certain concerns that had arisen. The first concern would be on the legislation's point of view. In this situation, the Federal Government has no authority of managing the solid waste in Selangor (Berita Harian, 2011). Therefore, LAs in Selangor needed to solve and implement solid waste management programs at their own initiatives. The worst situation that might happen to those less fortunate LA's was that they might be facing the funding problem for their waste management services. The state of Selangor's LA's was restricted from any assistance by the Federal Government (Hock, 2011). This was one of the risks for LAs in Selangor where the LAs needed to come out with their own management plans if there were financial problems. Programmes such as recycling, composting and many other initiatives of solid waste minimization were the examples of how the LAs can reduce their budget for the solid waste management programmes.

Besides that, there would be no uniformity between each of the LA in Selangor for managing its solid waste. As the state government was responsible in the monitoring aspect, each LA needed to figure out the suitable management plan for solid waste in their jurisdiction area. Therefore, it was difficult to compare or monitor the LAs' progress and outcomes in managing their solid waste. This would lead to some differences in action between LAs where some might focus on the technical aspect while others might focus on public initiatives. Contract termination of AFSB which was the main contractor had increased the workload for the LA. LAs needed to manage their own solid waste collection and disposal alone; hence, they needed to hire new contractors that might burden them with technical, environmental, economic and socio-political issues. The LAs were also facing shortages of human resources in terms of expertise and man power since previously, the AFSB managed the whole processes. Established LAs such as Shah Alam City Council (MBSA), Petaling Jaya City Council (MBPJ) and Subang Jaya Municipal Council (MPSJ) might not encounter any financial problems with this on-going transition, but small and medium sized LAs could face all these problems. These LAs still require continuous assistance from state government on a monthly basis to manage their services. The termination also led to time consuming and delays in the action of services as the new contractors needed to adapt to the previous routine which involved rules and procedures.

Based on the analysis and the findings from this research, MPSJ as LA had proven their capabilities in managing their own solid waste issues with various initiatives and programmes. Although there were advantages and disadvantages associated with solid wastes being managed by the

LA, it somehow showed that with proper management and planning, the LAs were capable in managing their own waste management system.

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Alesheikh, A. A., Ghorbanali, A., & Nouri, N. (2007). Coastline change detection using remote sensing. *International Journal of Environmental Science & Technology*, 4(1), 61-66.

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