

**A REVIEW OF MALAYSIA SOLID WASTE MANAGEMENT  
POLICIES TO IMPROVE RECYCLING PRACTICE AND WASTE  
SEPARATION AMONG HOUSEHOLDS**

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**ABSTRACT**

Households are the primary source that contributes to the municipal solid waste and thus, it is well justified that they should be targeted in waste recycling policies for the improvement of recycling rates in this nation. Aware of the significant role among the household, Malaysia has taken a series of initiative to improve the national policies for solid waste management to foster waste separation practices among household. These waste management policies focused on waste separation and waste recycling behaviour among households in Malaysia. This is because a well-managed and planned waste policy is one of the vital factors that will enhance waste separation and recycling behaviour among households. This paper attempts to summarise the waste management policies in Malaysia, chronologically and summarise the solid waste management and transformation plans in a timeline table for the ease of reference among future researcher and policymaker. This is to provide them with a better understanding of the progression of waste management policies and regulations in Malaysia.

*Keywords:* Policies, Waste Management, Waste Separation, Recycling, Households

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**1. Introduction**

Proper management of solid waste is considered as sustainable waste management (United Nations Development Programme Malaysia, 2008) the impact of waste accumulation toward the environment will reduce due to efficient waste management and plans of the country. One of the serious challenges for the government of developing countries around the globe is the management of sustainable solid waste (Omran et al., 2009). This is because the authorities must understand and identify the various factors that affect the different stages of waste management. The relation of each stage will eventually affect the overall system to function well (Guerrero et al., 2013). It is necessary to improve the waste management of a country that

should aim to cultivate the understanding of the community in improving and embracing the act of waste separation and recycling.

As stated above, the accumulation of solid waste is a critical issue for many countries, including Malaysia. Malaysia capital city Kuala Lumpur produces approximately 3,500 tons' waste per day that consists of domestic and industrial wastes (Bavani, 2009). Aziz et al. (2007), anticipate that solid waste accumulation in Malaysia will reach 30,000 tonnes per day by the year 2020. For better and sustainable waste management, the waste accumulated by the community should be reduced and one of the ways is to implement waste separation behaviour. Malaysia solid waste management consisted of various

governmental agencies, among them include Ministry of Urban Wellbeing, Housing and Local Government (MHLG), National Solid Waste Management Department better known as Jabatan Pengurusan Sisa Pepejal Negara (JPSPN), and Solid Waste and Public Cleansing Management Cooperation (SWCorp). The Local Authorities are responsible for managing municipal solid waste from household, enterprises and various institutions (MHLG, 2006).

Starting from the year 1970s, Malaysia had taken a series of initiative that aims to improve the waste separation and recycling practice among households. The primary disposal approach in Malaysia is landfilling, and one of the challenges that Malaysia faces is the low in recycling rate, of 5% only (Agamuthu et al., 2011). Therefore, Malaysia has come out with a series of plans to improve the recycling activities among households; this is because households are one of the highest generators of solid waste. Therefore, this paper attempts to summarise waste management policies initiatives in Malaysia that aim to improve the recycling act among households.

## 2. The History of Waste Management in Malaysia

Before the year 1995, the Federal Government, State and the Local Authorities are all respectively in charge to manage solid waste in Malaysia. The responsibility of the Local Authorities is to undertake the program that assigns to the management of solid waste. Back then, the solid waste was managed diversely by the Federal, State, and Local Authorities. The focus of solid waste management in Malaysia is to encourage recycling activities and to minimize illegal disposal. This is aimed to tackle the land requirements problems caused by the generation of waste and illegal dumping which are part of the social and environmental issues in Malaysia (Aziz et al., 2007).

Government roles in solid waste management started with Federal Government, that carry their responsibility through its central agency, for example, the Economic Planning Unit, which in charge for policy making and Southern Waste Management (SWM) budget allocation. The SWM budget allocation includes the budget for their program such as the recycling program. Furthermore, the Ministry of

Urban Wellbeing, Housing and Local Government (MHLG) is in charge with the policy and strategic planning for the management of solid waste meanwhile the implementation of plans and programs are under the responsibility of Local Government Department. Local Government, via the Local Authorities, is accountable for the implementation part of solid waste management activities that include the various division of waste management. The division of solid waste management includes the collection, treatment, and disposal of waste.

Furthermore, under the Local Government Act, 1976 the Local Authorities is responsible for the enforcement activities of the Act. The responsibility of the State Governments is to endorse the 3Rs (Reduce, Reuse, Recycle) among the facilities provided to the community. Meanwhile, the Department of Environment, Ministry of Science, and Technology concentrate on the issues regarding pollution and environment whether through the prevention or regulation control (MHLG, 2006; Saeed et al., 2009).

### 2.1 Waste Management Act And Regulations In Malaysia

On the year 1970s, the government had introduced a series of acts, ranging from the street cleanliness to waste management transportation and to municipal disposal sites assignation. The acts that early introduced consist of the Street, Drainage and Building Act 1974, Environmental Quality Act 1974 and Local Government Act 1976. Particularly these acts were implemented to control pollution regulation regarding waste recovery and also towards industrial manufacturing.

Next, in the year 1988, Malaysia establishes the Action Plan for Beautiful and Clean (ABC Plan) country, a management system for solid waste that includes every state of Malaysia. This plan brings perks in enhancing Malaysia image as a beautiful and clean country. Moreover, this ABC Plan is economically and environmentally friendly and should be easily accepted by the community (MHLG, 2006). Even though the ABC Plan was not authorised and implemented, it had become the start for a milestone that inspires Malaysia policymakers for better management planning in terms of solid waste.

Under the supervision of Tun Dato Seri Dr Mahathir bin Mohamad as the 4th Prime Minister and current Prime Minister introduced the Sixth Malaysian Plan in 1991. He also structures Malaysia to come out with the Vision 2020, a vision that plans for the nation by the year of 2020 to be a fully developed country. Respectively, the ABC Plan leads to the recycling program first in the year 1993 and secondly in the year 2000. Started from November 11, 2000, the National Recycling Day was proclaimed to be an annual event for Malaysia. The recycling program encourages households to practice 3Rs habit, that comes with the tagline "Think before you throw". Unfortunately, even after the implementation of the programs the recycling rate remains low among Malaysian (Moh and Manaf, 2017). This occurred because of the lack in confidence of households towards local management. Inefficient collection services by the local authority, lack of program promotion and less cooperation from the stakeholders will affect the confidence level among households with the management of waste (Moh and Manaf, 2014).

From the year 2000, the government had started to govern the management of solid waste thru federalisation and privatisation. As for privatisation consist of three fundamental private bodies, that is Environment Idaman Sdn Bhd (E-Idaman Sdn Bhd), Southern Waste Management Environment Sdn Bhd (SWM Env Sdn Bhd) and Alam Flora Sdn Bhd. These three private bodies respectively covering Peninsular Malaysia which E-Idaman Sdn Bhd responsible in managing Kedah and Perlis, meanwhile SWM Env Sdn Bhd covering Negeri Sembilan, Melaka, and Johor and lastly, Alam Flora Sdn Bhd for Kuala Lumpur, Putrajaya, and Pahang that eventually take over the states of Kelantan and Terengganu. Besides Sabah and Sarawak, the states of Selangor, Perak, and Pulau Pinang still managed by the local authorities for the management of solid waste. National Strategic Plan (NSP) that was formulated in 2002 is implemented in 2005 and planned to be used until the year 2020. NSP adapted the Waste Management Hierarchy concept, that started from the most desirable option to the least desirable option which is first to reduce, secondly reuse, thirdly recover, fourthly treatment, and last option disposal. The NSP Plan takes into account the solid waste management facilities that stated under the NSP framework. In 2006, as a part of NSP framework,

the Waste Minimization Master Plan (WM-MP) was introduced. WM-MP main focus was to standardise the government, private, and public level waste management. The management should lead to the successfulness in waste minimisation. The framework of NSP and WM-MP channel the way for improvement and transformation in managing solid waste in Malaysia.

## 2.2 *Solid Waste Management and Public Cleansing Act (Act 672)*

The Solid Waste Management and Public Cleansing Act (Act 672) was introduced in the year 2007. This act applies to Peninsular Malaysia and the territories of Putrajaya and Labuan. By referring to the implemented act in Japan, Denmark and Germany Act 672 was introduced to improve the service levels of waste management in Malaysia (Abdul Jalil, 2010). Under this act, Head Director is the person in charge of the management part. The member of the Solid Waste Management and Public Cleansing Corporation will appoint a Head Director that will be assigned to be the leader for each department. Head Director have the authority to come out with new policies, plans and strategies about the management of solid waste especially regarding Act 672. The important role of Head Director is to establish standard, specification and codes of practice under the Act 672. Head Director will perform Act 672 and provide license and approvals for respective corporation to manage solid waste such as the SWCorp and Alam Flora Sdn. Bhd.

The Solid Waste Management and Public Cleansing Act 2007, Act 672 stated that nobody is allowed to manage the solid waste facilities without the approval of Head Director. Head Director will take into account that the facilities provided should not affect the environment and degrading the quality of service level. It also stated that the approval to change the system or facilities of solid waste management only given if the Head Director satisfied with the solid waste management and facilities which meet the requirement. The system and facilities should not bring any harmful impact on the health of public and environmental quality. Further explanation of the roles of the Head Director is stated in Act 672, Part II (Act 672, 2007).

Moreover, stated in Act 672 that the minister of Solid Waste Management and Public Cleansing have the power to order any person to use environment-friendly materials, this aims to reduce the amount of unrecyclable solid waste produced by the community and the industrial parties. Minister also has the power to come out with the method that can be used to reduce the solid waste and brings a good impact on the environment. Based on Act 672, it reveals that Malaysian government take into consideration in forming better solid waste management for Malaysia, this is because good solid waste management plays an important role in developing a sustainable and clean country.

Malaysia also establishes The Waste Management Association of Malaysia (WMAM), a professional association founded in March 2005. WMAM plays the role to maintain the high standards in waste management services in Malaysia. The WMAM is a non-profit organization that provides a technical and educational forum that serves as the platform in discussing issues regarding management of waste. The objective of this association is to keep the relationship between the international and local waste management related organisation. The WMAM will keep up with waste management issues and come out with the ideas and practical information about waste management services.

In fact, Malaysia has put waste management as a priority action when the government, through The Solid Waste Management and Public Cleanliness Corporation by launching the Separation at Source Initiative (SSI) under Solid Waste and Public Cleansing Management Act 2007 (Act 672), that started to be effective by September 2015. This act aiming for the residents and retailers to separate waste in their dwelling. The household now is compulsory to separate waste in their dwelling. Therefore, it is foreseeing that this act will become the game changer that prompt for the needs to fostering waste separation behaviour among the households.

There are two federal territories and six states where SSI policy being implemented, that include Kuala

Lumpur, Putrajaya, Pahang, Johor, Melaka, Negeri Sembilan, Kedah and Perlis. This is because the three major private concessionaires that manage the federal territories and states which are E-Idaman Sdn Bhd, SWM Env Sdn Bhd, and Alam Flora Sdn Bhd all have agreed on the Separation at Source Initiative (SSI) programs that falls under Act 672. In general, SSI required every household to practice waste separation at source behaviour by separating waste according to the type of solid waste compositions as stated in SSI booklet. The waste separation type divided by paper, plastic, other materials that can be recycled, garden waste, and bulk waste.

Accordingly, for the composition of solid waste, the waste that already separated should be placed in the appropriate container or plastic bag and then placed on the edge of the garbage bin on the day of collection. The day of collection is different and already being set regarding the respective area whereas bulk waste should be placed neatly in front of the house on the day of collection. The solid waste collection will be made one (1) times a week by the designated concessionaire. Apart from that, residual waste should be placed in a suitable container or plastic bag and then be put in the provided dustbin. This residual waste includes food waste, disposable diapers, tissues, and other dirty and contaminated waste. The collection for residual waste will be made two (2) times a week by the appointed company concession.

As stated by National Solid Waste Management Department (NSWMD) under the Ministry of Urban Wellbeing, Housing and Local Government, the implementation of SSI is part of the government efforts to improve the recycling behaviour which will significantly decrease the amount of solid waste delivery to the landfills. The practice of waste separation at source by households is very helpful in decreasing the amount of solid waste delivered to landfill, thereby helping to expand the life of the landfill. Recycling and waste separation at source practice have also been identified as one of the most effective steps in reducing the total generation and delivery of solid waste to landfills (NSWMD, 2015).

**Table 1** Malaysia transformation of solid waste management policies and plans

| Legislation & regulation   | Year  | Agency                           | Description  |
|--|-------|----------------------------------|--|
| Street, Drainage and Building Act 1974,<br>Environmental Quality Act 1974<br>Local Government Act 1976 | 1970s | Local authorities                | Process of transporting waste to assigned landfill and street cleanliness  |
| Action Plan for a Beautiful and Clean Malaysia (ABC Plan)  | 1988  | Local authorities                | Even though, this plan not authorised and implemented, it had become the start for a milestone that inspires policymakers for better management planning |
| Vision 2020  | 1991  | Local authorities                | Malaysia aiming to grow into a developed nation by 2020  |
| First National Recycling Day   | 1993  | Local authorities                | Malaysia announced November 11th as National Recycling Day   |
| Second National Recycling Day  | 2000  | Federalisation and Privatisation | Since then, National Recycling Day was custom to be the annual recycling program   |
| National Strategic Plan (NSP)  | 2005  | Federalisation and Privatisation | NSP was formulated to be use until year 2020   |
| Waste Minimization Master Plan (WM-MP)   | 2006  | Federalisation and Privatisation | Part of NSP framework  |
| Solid Waste and Public Cleansing Corporation Act 2007 (Act 672)  | 2007  | Federalisation and Privatisation | Aims to standardised solid waste management and public cleansing services in Malaysia  |
| Solid Waste and Public Cleansing Corporation Act 2007 (Act 673)  | 2011  | Federalisation and Privatisation | Under this act two agencies were set-up which are JPSPN and SWCorp Malaysia  |
| SWCorp Strategic Plan  | 2014  | Federalisation and Privatisation | Seven core strategies of solid waste planning for year 2014 until 2020 is introduced   |
| Comprehensive Action Plan of Solid Waste Management 2015-2020  | 2015  | Federalisation and Privatisation | Created to improvise the management of the solid waste system  |
| Separation at Source Initiative (SSI)  | 2016  | Federalisation and Privatisation | Mandatory for household to practice waste separation at source started from 1st June 2016  |

### 3. Findings

In order for Malaysia to achieve the target recycling rate of 22% by 2020, there are new policies and plans for transformation in solid waste management. Table 1 summarizes the list of legislation and regulation of Malaysia from the early year 1974 until 2016.

Despite the newly launched Separation at Source Initiative (SSI) under the Solid Waste and Public Cleansing Management Act 2007 (Act 672) effective in 2015, Malaysian households still resist in practising waste separation. One of the reasons to explain this matter is the lack of awareness by households towards the significance of waste separation and recycling activities (Sinar Harian, 2017). Even though the government had used the marketing medium to increase awareness among households it still does not give a high impact on waste separation behaviour. The marketing medium that used is the poster, pamphlets, advertisement on television, radio, websites, LRT, billboards and so much more (Agamuthu et al., 2011).

Based on the findings we could see that the Malaysian government had taken many good initiatives and introduce Act 672 to be implemented to improve the waste separation and recycling activities by households. Besides considering the household's awareness, the authorities and waste management bodies should play their part in improving the enforcement of Act 672. The local authorities and waste management bodies in Malaysia should improve their part in every sector. This is because waste management is a cumulative effort that includes solid waste generation, storage, collection, transport, processing, and disposal acts that should also favour the environment, economic and public concerns (Fauziah and Agamuthu, 2012). Moreover, the lack and inconsistency in supporting the existing regulations could be one of the cause for low participation in recycling and waste separation behaviour among households. Furthermore, more studies are needed to clarify the reasons for the households in Malaysia reluctant to practising waste separation at home.

### 4. Conclusion

This paper summarises the development of Malaysia waste management and legislation. Although the nation had taken a series of action in waste separation, particularly to reduce the waste accumulation among households. The household in Malaysia is still far behind compared to other countries in engaging waste separation behaviour and recycling practice. Malaysia should take the example from an advanced country such as Japan, which manages to achieve a recycling rate by 40% annually. In describing the issues of waste management and recycling practice among households, we suggest a more detail study in understanding the households psychological factor, services and facilities. These are necessary to provide a more comprehensive solution for better and responsive waste management in Malaysia.

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