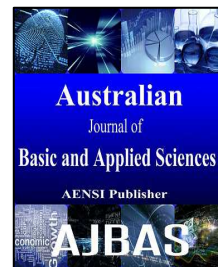




AUSTRALIAN JOURNAL OF BASIC AND APPLIED SCIENCES

ISSN:1991-8178 EISSN: 2309-8414
Journal home page: www.ajbasweb.com



A Review of the Public Policy for Solid Waste Management in Malaysia: An Insight towards Sustainable Solid Waste Management

Seow Ta Wee and Muhamad Azahar Abas

Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Batu Pahat, Malaysia

Address For Correspondence:

Seow Ta wee, Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Batu Pahat, Malaysia.
E-mail: tawee@uthm.edu.my

ARTICLE INFO

Article history:

Received 10 December 2015

Accepted 28 January 2016

Available online 10 February 2016

Keywords:

Public policy, Solid waste management, Sustainable solid waste management

ABSTRACT

Background: Nowadays, policy for solid waste management has become one of crucial policy in many countries. The performance of solid waste management has become a bench mark of sustainability for certain countries. Moreover, solid waste management is one of pivotal indicators to assess quality of life index that developed by United Nations Human Settlements Programme (UN-Habitat). In Malaysia, the policy for solid waste management has experienced changes since 1988. The modification and improvement of solid waste management policy in Malaysia has given an opportunity towards sustainability. This article has reviewed the concept of public policy. The concept of public policy would give comprehension regarding the issues and conflicts that related. Besides that, this article also has reviewed the United Nations perspective of public policy for solid waste management. Moreover, the significant of public policy for solid waste management has discussed in this article to give an insight towards sustainable solid waste management in the future.

INTRODUCTION

Since World War II, global Gross Domestic Product (GDP) and Gross National Product (GNP) in many countries have shown the increment (Spence, 2008). This pattern is expected keep continuous as industrialization and urbanization is keep continue. However, this phenomenon has contributed to rapid increase of solid waste generated (Abas & Seow, 2014). As the result, solid waste management is continues to be major challenges in many countries. Moreover, fail to manage the solid waste generated properly would cause negative impact for human health and environment vitality. Therefore, there are very significant to have public policy on solid waste management problem. Public policy is always been used by the government as a tool to achieve specific goal for the better management and development (Hussein, 2008). In fact, public policy is a guideline for the process and action of government decision making to overcome the public problem.

This paper will review the concept of public policy which discussing the definition of public policy from difference perspective of scholars. Moreover, the significant of public policy for solid waste management also was discussed in this article. Besides that, Malaysia's solid waste management policy also was reviewed and analysed to identify the opportunities to achieve sustainable solid waste management. The first solid waste management policy in Malaysia has been introduced since 1988 through Action Plan for a Beautiful and Clean Malaysia (ABC). However this policy is not officially gazetted. Malaysia's solid waste management policy is officially gazetted in 2006 and known as National Solid Waste Management Policy (Agamuthu *et al.*, 2009; Sreenivasan *et al.*, 2012; Abas & Seow, 2014). This policy has given Malaysia an insight toward sustainable solid waste management.

Open Access Journal

Published BY AENSI Publication

© 2016 AENSI Publisher All rights reserved

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

To Cite This Article: Seow, T.W. and Abas, M.A., A Review of the Public Policy for Solid Waste Management in Malaysia: An Insight towards Sustainable Solid Waste Management. *Aust. J. Basic & Appl. Sci.*, 10(1): 58-64, 2016

The Concept Of Public Policy: At A Glance:

The developing of public policy is frequently debated at local, national, international level mostly in developing country (Hussein, 2008). It is reflecting the dynamic society that emerged from the rapid development of transportation and telecommunication nowadays (Dye, 2002). This situation has created the clash and conflict among them in delivering their idea and philosophy. Hence, the development of public policy becomes more significant nowadays with the influencing by several perspectives (Farr *et al.*, 2006). In the scientific perspective, the suggestion and recommendation by scholars on the policy might improve the government's management. Moreover, in the political perspective, choosing the right policy which is can help to develop an area by the government is very crucial to secure their political status in that area. In the practical perspective, the emerging of the responsible citizens who understand the important of the policy will influence the significant of public policy nowadays. In fact, the participation of citizens in public policy processes has occurred in many countries including Malaysia (Hussein, 2008).

In general, public policy is a desire of the government to do something with a reason (Hussein, 2008). It is concerned with what government do, why they do it, what different it makes, and what the consequences of these policies are. Most of the public policies are a combination of rational planning, incrementalism, competition among groups, elite references, public choice, political processes and institutional influences (Dye, 2002). In fact policy is a tool that has been used by many governments to achieve its goal for the better management and development.

Definition of Public Policy:

In general, most of the scholars have defined public policy is a guideline for the process and action of government decision making to overcome the public problem (Hussein, 2008). Public policy is whatever governments choose to do or not to do (Budd *et al.*, 2006). Government do many things such as they regulate conflict within society, they organize society to carry on conflict with their societies, they distribute a great variety of symbolic rewards and material services to members of the society and they collect money from society, most often in form of taxes (Hussein, 2008). Thus public policies may regulate behaviour, organize bureaucracies, distribute benefits, or extract taxes or all these things at once (Dye, 2002).

There is a definition of public policy by some scholars like Harold Laswell (1951) has defined public policy as a plan of program with regard to goal, values, and teaching. Austin Ranney (1968) has described it as a fixed guideline to tell the intention or perform an action. James Anderson (2003) has explained public policy as an action that has purposed which is followed by a character as well as notable actors to negotiate the problems and the areas of concerned. There are plenty of definitions with regard to public policy. However, what scholars were trying to discuss is the process, series, and actions of the government decision to cope with the public problems whether it is real or just an imagination (Farr *et al.*, 2006). The main characteristic of public policy is properly formulated, implemented and evaluated by the authorities in the country's political system. Moreover, public policy is often fluctuating as reflect from its effects (Hussein, 2008).

Public Policy For Solid Waste Management:

Solid waste management policy, legislation, and regulations are the main approach conducted by government to control and influence waste management practice (Hezri, 2010). In principles, there are many different policy options available to government covering a broad spectrum to strictly enforce the regulation (Hussein, 2008). Many governments are increasingly implementing policies that are intended to improve waste management practices (Read, 1999). Therefore, many new initiatives have been taken in countries around the world over the last few years (Leach & Collinge, 1998). Hence, policy of solid waste management have grab the attention most of scholars to study the process of policy development and implementation (Themelis & Mussche, 2013). In fact, most of the countries have their own solid waste management policies which based on their locality and suitability (Read, 1999). Moreover, the enforcement and implementation of the solid waste management policies is different at most countries (Hezri, 2010). However, the policies that formulated have the same agenda which is to attain effective solid waste management in term of social, economy and environment security.

United Nations Perspective on Solid Waste Management Policy:

Sustainability has now been accepted adopted at an international level as a framework for guiding future development within which, social, economic and environmental goals must be adopted which are consistent with each other and mutually attainable (Hezri, 2010). Sustainability has now become established as a formal policy objective at local, national and global scales and as a consequence of UNCED in 1992, the language of agenda 21 has become increasingly familiar in policy making circles (United Nations, 1992). The earth summit in Rio set a series of Agenda 21 objectives for waste management. These included:

- i. Minimizing waste, stabilizing waste production, quantifying waste flows, implementing waste minimizing policies and developing national waste minimization plans

ii. Maximizing environmentally sound waste reuse and recycling, by providing information, implementing policy instruments, developing national programs and raising public awareness

iii. Promoting environmentally sound waste disposal, through the development of national waste plans and the application of the polluter pays principle to wastes

These goals have been translated through national policy in the most countries including Malaysia into targets and strategies which local government must achieve and strive toward for recycling, reuse and energy recovery (Hezri, 2010). The government approach to solid waste management should aim to ensure that valuable raw material are used efficiently and not discarded unnecessarily, and that unavoidable waste is disposed of safely and efficiently (Read, 1999). To this end the government should:

- i. Encourage the minimization of waste
- ii. Promote recycling of waste including recovery of materials and energy
- iii. Tighten controls over waste disposal standards
- iv. Take action to curb litter, focusing upon application of the waste management hierarchy at the local scale

Clearly the environment and quality of life are critical concern to public authorities, federal government, business and ordinary people. Local authorities are at the centre of this system, and are in charge of organising it, controlling it and enforcing it (Read, 1999). Figure 1 shows the traditional and sustainable approaches to the management of municipal solid waste which indicating the obvious changes is required for the effective solid waste management at the local scale.

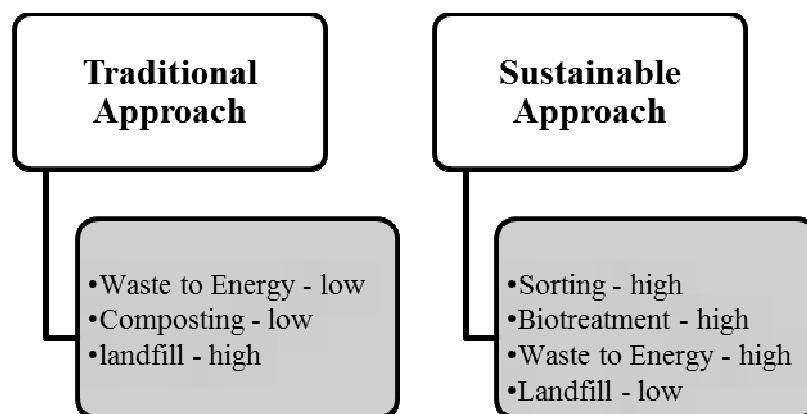


Fig. 1: Approaches to the Management of solid Waste Management

The Significant of Public Policy for Solid Waste Management:

Policy as well as law is a tool used to control the activities of civilian in order to achieve certain aspiration which is for the public good. In the context of solid waste management, the policy was developed to reduce the impact of unsustainable waste management to human as well as to environment (Agamuthu *et al.*, 2009). The issues of increment of solid waste generation has make the policy with regard to solid waste management is significant nowadays (Sreenivasan *et al.*, 2012). The development of policy on solid waste management is as a guide for stakeholders that involve formally or informally in solid waste management process such as the waste generation, collection, transportation, treatment and final disposal.

Each phase of solid waste management has taken into account in the policy to ensure the management of the waste can be conducted effectively. In fact, the development of solid waste management policy in many countries including Malaysia was influenced by the political interest and some cases by public choice reflecting the problems that have emerged (Hussein, 2008). Hence, the solid waste policy has proposed to secure the political condition reflecting of the action or initiative for problem solving. Besides that, the pressure from public for the better management in solid waste also is the rationale the development of the solid waste policy in many countries. In general, policy on solid waste management could be an insight to the developed and developing countries to achieve better future.

Policy Change in Solid Waste Management:

Most of the study regarding policy development and policy process is available from the work of Cashore & Howlett (2007) and Ahmad Atory Hussein (2008). In a simple term, policy content can be categorized into three main components. First is the abstract 'goals', demanding clarification on the types of ideas that govern

policy development. The second component is 'objectives' to implement a goal in general terms. Underlying questions include what specific requirements are operationalized into formal policy, and what specific types of instruments are used. The third component is the 'settings' that specifically calibrate the requirements to implement those objectives in practice. This demands specification of on-the-ground aims of policy, and knowledge of the specific ways in which the policy instruments are utilized. More often, the elements of policy development differ from one jurisdictional context to another which is based on sector or country. Nevertheless, a generalisation is still useful to explain patterns of policy development (Kraft & Vig, 1994; Hezri & Hasan, 2006; Cashore & Howlett, 2007).

In the area of waste management, policy has evolved from a single-choice reliance on landfills to the waste hierarchy concept, also known as 3R policies. Essentially the 3R approach is based on the idea of using resources fully before its final disposal. Waste hierarchy is basically a precautionary principle that prioritizes the prevention and reduction of waste, then its reuse and recycling, and lastly the optimization of its final disposal. The ensuing discussion applies the disaggregated components of policy content in the waste management context, using the case of Japan as an example.

From historical perspective, the drivers of waste management have neither been static nor fixed (Wilson 2007). The changes depend to a great extent on economic structure of countries and the lifestyle of their growing populace. Figure 2 shows the outlines of five (5) stages of solid waste management goals and objectives that drive the change of solid waste management policy. These are, essentially: public health and sanitation; environmental safety; waste minimization; integrated resource recovery; and climate benefits. The first two goals can be considered health-related, while the last three are sustainability-related. Although these goals evolved in stages, their utility for analysis is limited as only heuristic, as the actual expression of these goals in public policy varies between countries (Hezri, 2010).

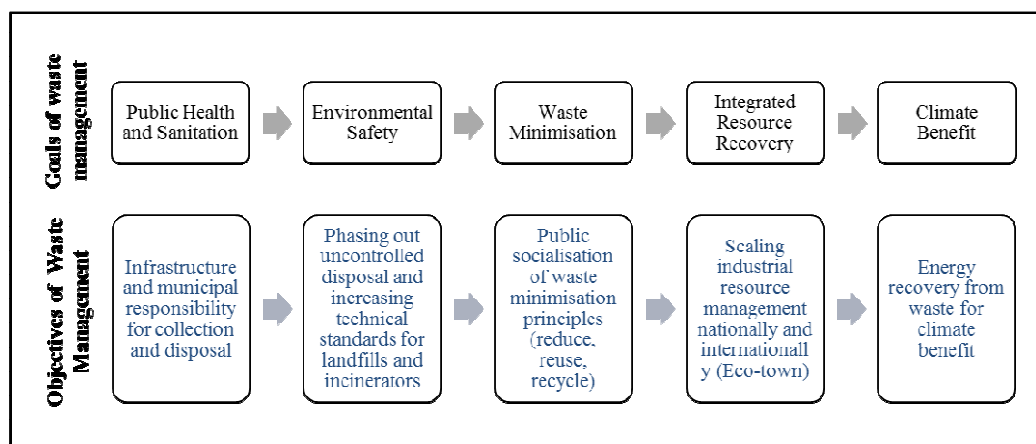


Fig. 2: Five (5) Stage of Goals and Objectives of Solid Waste Management (Hezri, 2010)

Solid Waste Management Policy In Malaysia: An Insight Towards Sustainable Solid Waste Management:

Sustainable solid waste management is the main purposes of integrated solid waste management. Policy, plan and strategy are the main driven to achieve sustainable solid waste management. Hence, Malaysian government has comes up with polices, strategies and plans toward effective solid waste management (Nadzri & Larsen, 2012). Since early 1988, Malaysian government has introduced Action Plan for a Beautiful and Clean Malaysia (ABC) (Ministry of Housing and Local Government Malaysia, 1988; Sreenivasan *et al.*, 2012). The proposed policy under this ABC plan is to produce an integrated national municipal solid waste system which is environmentally sounds and socially acceptable (Ministry of Housing and Local Government Malaysia, 1988). Unfortunately, this policy was not officially endorsed by the national council of local government. However, most of the plans from ABC have been consider in National Strategic Plan on Solid Waste Management which officially adopted in Malaysia in 2005 (Sreenivasan *et al.*, 2012). In the 3rd outline perspective plan (OPP3), Malaysian government has considered to adopt incinerators for efficient solid waste disposal (Agamuthu *et al.*, 2009). Besides that, 3R policy has been re-launched by Ministry of Housing and Local Government as an initiative for solid waste reduction. At that time, the recycling rate among Malaysian is too low which is below 5% (Sreenivasan *et al.*, 2012).

The National Strategic Plan for solid waste management has provided the basis point for solid waste management policies in Peninsular Malaysia (Nadzri & Larsen, 2012). It has covered the scope of municipal solid waste in Peninsular Malaysia which including solid waste generated from public cleansing activities, household, institutional, commercial, construction and industrial. The key strategy of this plan is to attain sustainable solid waste management through reduction, re-use and recycling and using appropriate technologies, facilities, and equipment (Hezri, 2010). Six strategies has been formulated in this national strategy

which to guide solid waste legislative, institutional and infrastructural planning in Malaysia. The six strategies of this national plan are:

- i. Determination of solid waste management priorities (Reduce, Reuse, Recover, and Disposal)
- ii. Rapid and comprehensive development of the necessary legal and institutional framework (adoption of privatisation policy for solid waste management services)
- iii. Development of public participation in solid waste management
- iv. Provision of sustainable technologies to manage solid waste in Malaysia (the technologies used are affordability, operated by skilled workers, and consider local condition and environment)
- v. A comprehensive approach to develop the waste reduction, reuse, recovery elements of solid waste management (full participant from all main players)
- vi. A socially acceptable solid waste management system that calls for substantial initial government intervention with gradual shift towards full cost recovery (financial plan that meet urgent requirements without social inequalities and full cost recovery by year 2020)

Moreover, this strategic plan also has provided a roadmap for implementing its action plan. The action plan in this roadmap has covered the regulatory and technical services with regard to sustainable solid waste management. In general, National Strategic Plan for solid waste management has provided a framework for solid waste management legislation, solid waste management master plan, solid waste minimization master plan, and solid waste management facilities master plan (Nadzri & Larsen, 2012). However, this strategic plan need to be reviewed and updated to suit the current legislation, composition of the current municipal solid waste, and solid waste institutional structure at present (Latifah *et al.*, 2009).

The study on National Waste Minimization has been conducted by Japan International Corporation Agency (JICA). As the result, master plan for National Waste Minimization has been launched in 2006. The objective of this master plan is to minimize the amount of solid waste disposed in Malaysia by providing all the stakeholders with clear vision, strategies and roles (Japan International Corporation Agency, 2006). The master plan for National Waste Minimization is part of the National Strategic Plan for solid waste management that has been introduced a year before. Further, this master plan is covers Peninsular Malaysia and East Malaysia which applicable to all states and federal territories. The vision of this master plan is to realize a material cycle society in Malaysia. Table 1 shows the national solid waste minimization targets by the year 2020. The strategies of this master plan are:

- i. Enhancement of awareness on waste minimization
- ii. Strengthening of partnership for 3Rs (reduce, reuse, recycling) activities
- iii. Enhancement of institution to strengthen government policies on waste minimization.

Table 1: National Recycling Target in Specific Sectors by the year 2020 (Abas & Seow, 2014)

Source of Solid Waste	Recycling Target by the year 2020
Municipal, Commercial, Industry	14%
Construction	30%

Moreover, Department of National Solid Waste Management (NSWM) was established under Solid Waste and Public Cleansing Management Act (Act 672) which gazetted on 30 August 2007. This department is coordinated under Ministry of Urban Wellbeing, Housing and Local Government. All the legislation related to solid waste management such as Local Government (amendment) Act 2007 (Act A1311), Street, Drainage and Building (amendment) Act 2007 (Act A1312), and Town and Country Planning (amendment) Act 2007 (Act 1313) are now vested on the federation by Act 672. The uniformity of these Acts is involved throughout Peninsular Malaysia and the Federal Territories of Putrajaya and Labuan (Nadzri & Larsen, 2012).

The Solid Waste and Public Cleansing Management Act (act 672) has given executive authority to the federal government in implementing solid waste management and public cleansing (National Solid Waste Management Department, 2014). The purpose of this department is to integrate the national solid waste management system which including collection, transportation, and disposal. Further, National Solid Waste Management Policy has been formulated under this department in 2006. The aims of the National Solid Waste Management Policy is i) to establish an integrated solid waste management system which is holistic, cost effective, socially acceptable and sustainable which is emphasizes the environment conservation, affordable technology and securing the public health, ii) to implement solid waste management based on solid waste hierarchy which emphasizes waste minimization through 3Rs (Reduce, Reuse and Recycling), solid waste treatment and final disposal (National Solid Waste Management Department, 2014). Further, to clarify the National Solid Waste Management Policy goal, several objectives have been formulated which are:

- i) A solid waste management that is integrated and cost effective, which includes collection, transportation, intermediate treatment and disposal
- ii) Minimization of solid wastes from the domestic, commercial, industries, institutions community and construction through 3R
- iii) Services that are efficient and cost effective through privatisation

- iv) Selection of technologies that are proven, affordable in terms of capital expenditure (CAPEX) and operational expenditure (OPEX), and environment friendly technologies
- v) Ensure conservation of the environment and public health
- vi) Establish institutional and legal framework for solid waste management

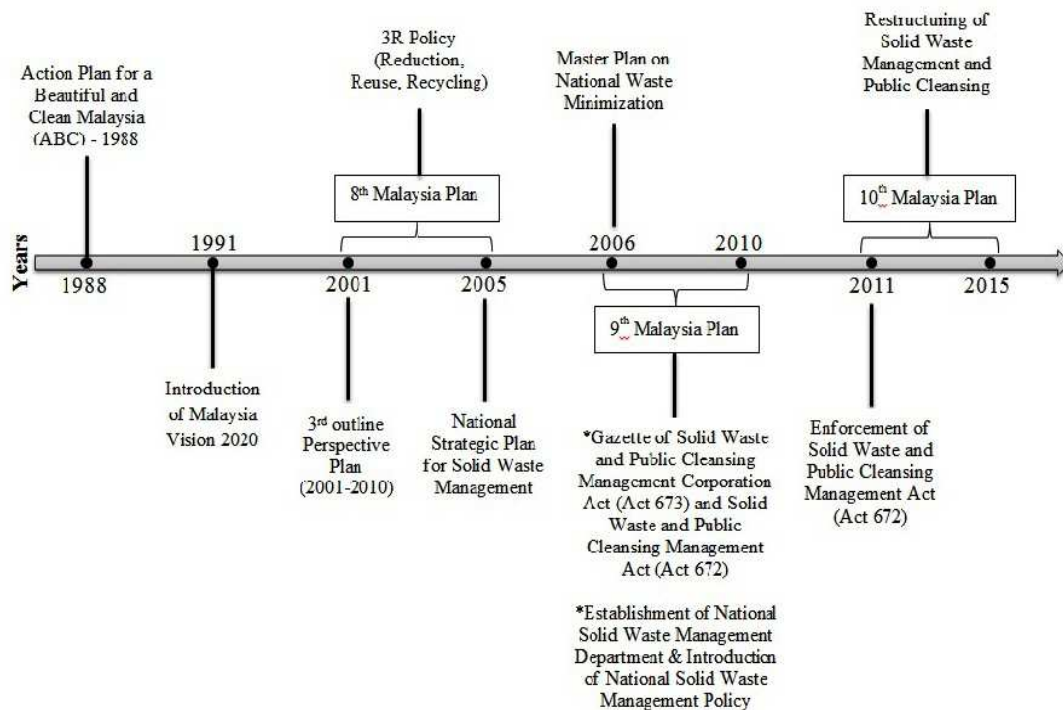


Fig. 3: Strategies and Policies Regarding Solid Waste Management in Malaysia (Abas & Seow, 2014)

Formulated of solid waste management policies and strategies has proved that the Malaysian government is striving to improve solid waste management practices towards sustainable solid waste management. Figure 3 shows the strategies and policies of solid waste management in Malaysia since 1988. The new initiative is always been introduced continuously to improve the policy implementation as suited to the current situation.

Conclusion:

Sustainable solid waste management required a good policy together with comprehensive strategies and plans. However, understand the concept and process of public policy also is significant to develop a good public policy. Public policy is always requiring changes and modification time by time to ensure the policy is suitable with current situation. However, policy of solid waste management in developing countries including Malaysia is always being debated. The issues of ineffective policy implementation are repeatedly debated. Hence, further study regarding ineffective solid waste management policy implementation in developing countries is significant. This study can enhance solid waste management policy implementation towards sustainability.

ACKNOWLEDGEMENT

Special thanks are extended to the Office for Research, Innovation, Commercialization and Consultant Management (ORICC), Universiti Tun Hussein Onn Malaysia (UTHM) for providing adequate financial assistance under grant Research Acculturation Collaborative Effort (RACE) Vot 1446. Moreover, we wish to express our sincere appreciation to Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia (UTHM) for providing required technical assistance.

REFERENCES

- Abas, M.A. and T.W. Seow, 2014. Municipal Solid Waste Management in Malaysia: An Insight Towards Sustainability, In the proceeding of the 4th International Conference on Human Habitat and Environment, Universiti Kebangsaan Malaysia, 18: 192-206.
- Abas, M.A. and S.T. Wee, 2014. The Issues of Policy Implementation on Solid Waste Management in Malaysia. International Journal of Conception on Management and Social Sciences, 2(3): 12-17.
- Agamuthu, P., F.S. Hamid and K. Khidzir, 2009. Evolution of solid waste management in Malaysia: Impacts and Implications of the Solid Waste Bill 2007. Journal of Material Cycles and Waste Management, 11,

pp: 96-103.

- Anderson, J.E., 2003. *Public Policy Making: An Introduction*. Boston: Houghton Mifflin Company.
- Austin, R., 1968. *Political Science and Public Policy*. Chicago: Markham Publishing Company.
- Budd, L., J. Charlesworth and R. Paton, 2006. *Making Policy Happen*. New York: Routledge.
- Cashore, B. and M. Howlett, 2007. Punctuating which Equilibrium? Understanding Thermostatic Policy Dynamics in Pacific Northwest Forestry. *American Journal of Political Science*, 51: 532-552.
- Dye, T.R., 2002. *Understanding Public Policy*. 10th ed. New Jersey: Prentice-Hall.
- Farr, J., S.H. Jacob and K. Nicole, 2006. The Policy Scientist of Democracy: The Discipline of Harold D. Lasswell. *American Political Science Review*, 100:4:579-587. DOI: <http://dx.doi.org/10.1017/S0003055406062459>
- Hezri, A.A. and M.N. Hassan, 2006. Towards Sustainable Development? The Evolution of Environmental Policy in Malaysia. *Natural Resources Forum*, 30: 37-50.
- Hezri, A.A., 2010. Towards 3R-Based Waste Management: Policy Change in Japan, Malaysia and the Philippines, in Kojima, M. (Ed.). *3R Policies for Southeast and East Asia*. Jakarta: ERIA, pp: 274-290.
- Hussein, A.A., 2008. *Pembentukan Polisi Awam*. 1st ed. Kuala Lumpur: Utusan Publications and Distributors.
- JICA, Japan International Cooperation Agency, 2006. *Final Report: The Study on National Waste Minimization in Malaysia*. Kuala Lumpur: Ministry of Housing and Local Government Malaysia.
- Kraf, M.E. and N.J. Vig, 1994. *Environmental Policy from the 1970s to the 1990s: Continuity and Change*. in Vig, N. J. & Kraf, M. E. (Ed.). *Environmental Policy in the 1990s: Towards a New Agenda*. Washington DC: CQ Press.
- Lasswell, H.D., 1951. *The Policy Orientation*. in Daniel, L. & Harold, D. L. (Ed.). *The Policy Sciences: Recent Developments in Scope and Method*. Stanford: Stanford University Press.
- Latifah, A.M., A.S. Mohd Armi and M.Z. Nur Ilyana, 2009. *Municipal Solid Waste Management in Malaysia: Practices and Challenges*. *Waste Management*, 29: 2902-2906.
- Leach, S. and C. Collinge, 1998. *Strategic Planning and Management in Local Government*. London: Pitman.
- Ministry of Housing and Local Government Malaysia, 1988. *Action Plan for Solid Waste Management*. Kuala Lumpur: Ministry of Housing and Local Government Malaysia.
- Nadzri, Y. and I.B. Larsen, 2012. *Federalising Solid Waste Management in Peninsular Malaysia*. Kuala Lumpur: Department of National Solid Waste Management.
- National Solid Waste Management Department, 2014. *National Solid Waste Management Policy*. Retrieved on March 10, 2014, from http://www.kpkt.gov.my/jpspn_en_2013/main.php?Content=vertsections&VertSectionID=170&IID
- Read, A.D., 1999. Making Waste Work: Making UK National Solid Waste Strategy Work at the Local Scale. *Resources, Conservation and Recycling*, 26: 259-285.
- Spence, M., 2008. *The Growth Report: Strategies for Sustained Growth and Inclusive Development*. Commission on Growth and Development Final Report, Washington, DC.
- Sreenivasan, J., M. Govindan, M. Chinnasami and I. Kadiresu, 2012. *Solid Waste Management in Malaysia: A Move towards Sustainability*. *Intech*, 3: 55-70.
- Themelis, N.J. and C. Mussche, 2013. *Municipal Solid Waste Management and Waste-to-Energy in the United States, China and Japan*, in 2nd International Academic Symposium on Enhanced Landfill Mining. Houthalen-Helchteren: Enhanced Landfill Mining Consortium (ELFM).
- United Nations, U.N., 1992. *United Nations Programme on Action for Sustainable Development*. New York: United Nation.
- Wilson, D.C., 2007. Development Drivers for Waste Management. *Waste Management & Research*, 25(3): pp: 198-207.