

Sustainable Solid Waste Management in Malaysia: The Concept of Multi-Stakeholder Governance in Solid Waste Policy Implementation

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Abstract

From the past few years, multi-stakeholder governance is one of the captivating concepts that mostly discussed in public administration. Multi-stakeholder governance has represented the modes of governing that involves a multiplicity of informal actors and formal institutions. This new mode of interaction has involving a network of government sectors, non-profit organisations, non-governmental organisations (NGO) and other non-state actors in implementing the public policy. There is many type of public policy and solid waste management policy is one of them. In developing countries, the issue of ineffective policy implementation on solid waste management has grabbed attention of many public policy scholars. Poor multi-stakeholder governance in solid waste policy implementation is one of the main causes. In fact, ineffective solid waste management will brought negative impact to human health, environment and the economy development. Hence, the study of multi-stakeholder governance is very crucial to enhance solid waste policy implementation. This concept paper is critically examines multi-stakeholder governance as a theoretical tool which has potential to advance our understanding on the complexity of policy implementation with regard to solid waste management. This could be an insight for developing countries like Malaysia for achieving sustainable solid waste management.

Keywords: Sustainable solid waste management, Multi-stakeholder governance, Policy implementation

1. Introduction

Policy is one of the prominent approaches to deliver the improvement in any public administration and public services delivery (Ahmad Atory Hussein, 2008). The developing of policy is frequently debated at local, national, international level mostly in developing country. It is reflecting the dynamic society that emerged from the rapid development of transportation and telecommunication nowadays. This situation has created the clash and conflict among them in delivering their idea and philosophy. Hence, the development of comprehensive policy becomes more significant nowadays with the influencing by several perspectives which are the scientific perspectives, practical perspectives and political perspectives (Dye, 2002). In essence, policy is a tool that has been used by many governments to achieve its goal for the better management and development.

The transformation of Malaysia from an agriculture based to a modern industrial based nation has been remarkable. This modern industrial based has offered plenty of job opportunities to civilian. Reflecting on that phenomenon, the urbanization and population rate in Malaysia's city centres are increase drastically in the past few years (Muhamad Azahar and Seow, 2014). As the result, solid waste generation at city centres is significantly escalated day after day. The drastic increase of solid waste generation has brought challenges to Malaysian Government to manage these solid wastes effectively. In fact, when the problem comes, the improvement of the solid waste management is crucially required.

Malaysia's policy on solid waste management has been introduced officially through enactment of Act 672 (Solid Waste Management and Public Cleansing Act) in 2007. This policy has introduced to achieve effective solid waste management. Moreover, this policy has included the integrated solid waste management concept as main strategy. However, there is a gap between the law and practices on the ground (Agamuthu et al., 2009). The problem of ineffective policy implementation is frequently occurred at developing countries including Malaysia. This problem is reflected from the poor management system as well as the governance of its stakeholders (Bjerkli, 2013).

Good governing of stakeholders in policy implementation is one of the fascinating concepts that most of the policy's scholars believe is one of the solutions (Budd et al., 2006). In fact, the stakeholder's involvement is quite complicated because each process of solid waste management process which begins from waste generation until final disposal has involved a distinctive of stakeholders. Each stakeholder in every stages of solid waste management process has played a different role that is crucial. Hence, improving the stakeholder's governance in solid waste management process could give an insight towards effective solid waste management.

2. The Issues of Policy Implementation on Solid Waste Management

Policy implementation in solid waste management has become a critical issue in public administration. The issue

of ineffective solid waste management has reflected the inefficient policy implementation. In fact, there is a policy with regard to effective solid waste management formulated in most of the countries including Malaysia. However, the mechanism of the implementation of this policy is different at developed and developing countries. This is based on the study conducted by many scholars and international organisation which is the solid waste management in developed countries are more effective and efficient compared with developing countries (World Bank, 2012). Moreover, policy has been used as a tool to achieve the goals of effective or as well as sustainable solid waste management.

Governments are increasingly implementing policies that are intended to give impact on waste management practice, and many new initiatives have been taken in the countries around the world over the last few decades. A common problem has emerged in most countries that have embarked the solid waste policies especially in promoting recycling and waste reduction. The process of policy making has not been matched by an equal effort to provide mechanism for effective policy implementation. In the most developing countries including Malaysia, the top down approach has employed for legislative decision (Ahmad Atory Hussein, 2008). Hence, most of the policies such as solid waste policy are executed with little or no discretion locally (Agamuthu et al., 2009).

Implementation is about putting policies into practices, and it is often the complex process of planning, coordination and promotion which is necessary in order to achieve policy objectives. In fact, implementation constitutes an important phase in the policy process (Dye, 2002). In the implementation phase, the policy is translated into actual changes in behaviour. Approaches to implementation are therefore become very significant. In general, the involvement of different actors in both the creation and implementation of policy is the critical factor if the policy is to stimulate new initiatives. Moreover, integration of the new paradigm into industrial decision making has become challenges in many countries. Thus, there is a fundamental need to understand the localised mechanism by which policies are made and enacted (Read, 1999).

A sizeable gap often persists between a policy decision and its implementation on solid waste management (Read, 1999). Ambiguity of the policy among the policy implementers is the frequent failure of policy implementation on the ground (Paudel, 2009). This clearly shows the different waste management planning and implementing bodies would create a conflict. Moreover, the implementation become more complex due to the different tiers of government and the different sections of an authority with responsibility for management, operational and planning function of waste management (Read, 1999).

3. Multi-stakeholder Governance in Solid Waste Management Policy Implementation

Governance is a concept to describe how good an organisation controls its actions to ensure that its constituents follow its established policies (Andrew, 2008). It is not easy to ensure compliance with the policies formulated without involving the multi-stakeholder (Elbakidze et al., 2010). Hence, governance concept has covered a broad issue to ensure that the policies can be implemented effectively (Grindle, 2004). In the context of solid waste policy implementation, application of governance concept might contribute in deep understanding the various social-cultural elements that significant in solid waste policy implementation.

Multi-stakeholder is currently synonymous with the governance practices. This governance concept is a platform where political, economic and social issues are able to be deliberated. At the same time, placing governance practices under a multi-stakeholder model has provided the opportunity for new forms of cooperation that allow a diverse set of stakeholders working together to achieve the objectives of policy (Thomas and Grindle, 1990). Over the years, it has become evident that multi-stakeholder governance is consistently evolved concept instead of a static concept. Part of this evolvement is the idea of enhanced cooperation (Claire Charbit, 2011).

Multi-stakeholders governance principle has four significant elements such as participation, openness, cooperation as well as collaboration and pluralism (Thomas and Grindle, 1990). In solid waste policy implementation, the participation and collaboration between multi-stakeholders is very crucial (Gibbon et al., 1994). Besides that, the openness and pluralism of the policy also are the crucial element that needs to take account during its implementation (Paudel, 2009). In fact, the pluralism and openness of the solid waste policy are controllable elements as compared to participation and collaboration. Hence, participation and collaboration of the multi-stakeholder is quite difficult to achieve because beyond the reach of the policy developers and implementers. Based on the study of Elbakidze et al. (2010), motivation is a key to trigger the collaboration and participation of various level of stakeholder. Figure 1 shows the crucial elements in multi-stakeholders governance.

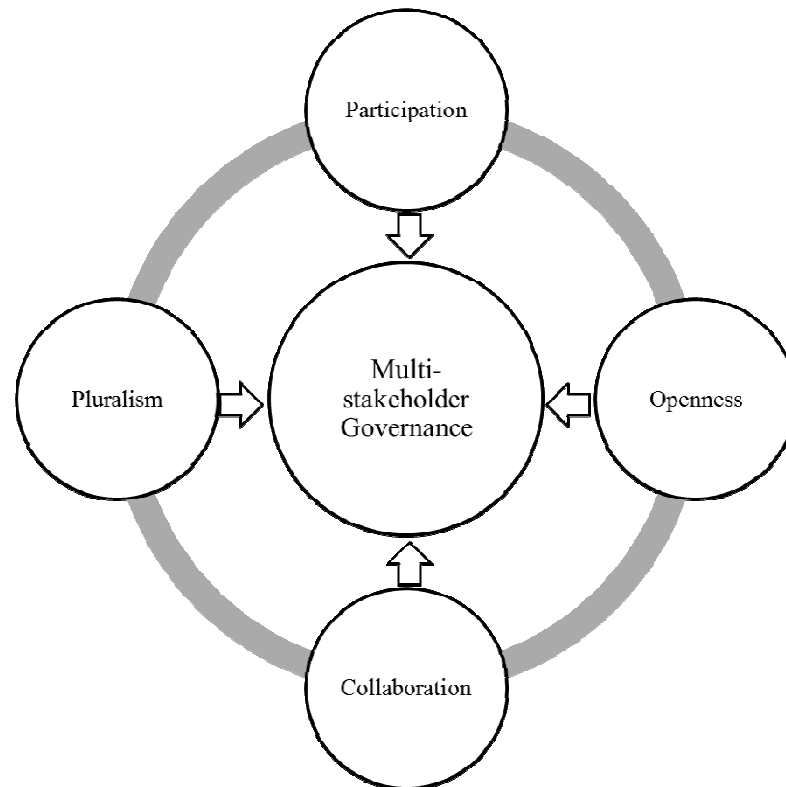


Figure 1. The Elements of Multi-stakeholders Governance

Source: Elbakidze et al. (2010)

3.1 Adaptive the Concept of Multi-stakeholder Governance

The development of collective action is differs in different situations and places. For instance, the actions can be initiated by local people from the bottom up or by external actors from the top down. Different stakeholders may also have different motivations for taking part in collective action. In facilitating the institutional change, recognition of the concerted efforts by policy developers, facilitators, and leaders is very crucial (Thomas, 2003). Thus, it is necessary to analyse the motivations of the stakeholders and leaders to engage in a solid waste management and how this might affect the adaptive capacity of the initiative. The adaptive capacity of a sustainability initiative is can be enhanced if the program of activities reflects and includes the partner's needs and values. This is further reinforced if the process is grounded in the principles of democratic governance, capacity building, and knowledge production to strengthen the partners and the partnership (Gibbons et al., 1994).

Satisfying the different dimensions of sustainable development also requires the governance systems that support coordination and cooperation across the various organisational dimensions in a landscape. In essence, governance concept refers to decision-making processes and networking aimed at problem solving. This concept focuses on participation and deliberative consensus-building processes with the goal of enhancing cooperation and coordination among a diverse range of stakeholders (Healey, 1996; Stoker, 1998). Therefore, a platform of forum for adaptive governance is crucial for enabling the processes of solid waste policy implementation. Furthermore, these platforms can facilitate an overriding strategy and coordination of planning and management activities by representatives from various sectors of society such as public, private, and local communities. In fact, each sector will represent the needs and interests of stakeholders at different levels (Bellamy and Johnson, 2000). This coordination also can be enhanced by the development of social learning that transfers knowledge and new approaches in collaboration among managers and other stakeholders at different levels (Mayers and Bass, 2004). Besides that, this also can foster the dialog between sectors in complex adaptive systems to produce the new knowledge (Diets et al., 2003).

The initiatives of multi-stakeholders governance are able to establish a platform or forum for coordination of management activities may also provide an indication of the level of their adaptive capacity. As Folke et al. (2005) pointed out, adaptive governance of linked various social-cultural is generally involves polycentric institutional arrangements. Moreover, these institutional arrangements are nested the decision making units that operating at multiple scales. Hence, these institutional arrangements engage the local communities as well as the higher organisational levels. In fact, the aim of institutional arrangements is to find a

balance between decentralized and centralized control (Folke et al., 2005). Nestedness of the organizations is very crucial if the management of a solid waste has involves multiple levels of governance from local to global (Shindler, 2003). This may facilitate analytic deliberation and interaction among actors horizontally and vertically (Grafton, 2005; Dale and Newman 2010).

Nestedness of stakeholders in solid waste policy implementation embraces knowledge sharing, capacity building, and networking. In fact, it may enhance the adaptive capacity of the system (Coleman, 1988; Cash and Moser, 2000; Putnam, 2000; Adler and Kwon, 2002; Olsson et al., 2007). This includes a representative among involved sectors and also among local, regional, and national stakeholders with regard to solid waste management. The stakeholders at different levels and in different sectors may have varying levels of influence and different motivations to participate. In some cases, an overrepresentation of actors with their particular interests may decrease the chances for adaptive multi-stakeholder governance in the context of policy implementation (Arnstein, 1969).

However, the adaptive capacity of a solid waste policy implementation depends on its context and how different management systems are situated at different levels. For example, the culture and administrative system at the constitutional state level may influence how policy can respond to change and manage adaptively. Thus, the difference between each level of stakeholders at national state and local are important variables.

4. Multi-stakeholders Involvement in Solid Waste Management: A Case Study of Malaysia

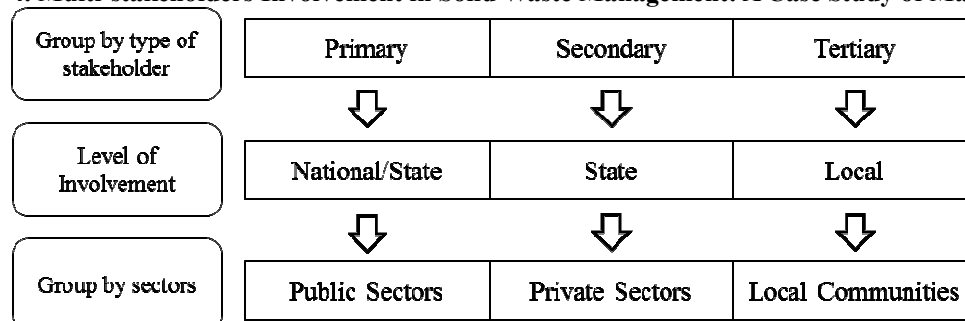


Figure 2. Classification of Stakeholders into Different Group in Solid Waste Management
 Modified from World Bank (1995)

Stakeholders in solid waste management can be divided into three groups which are primary, secondary and tertiary stakeholders. Primary stakeholder is refers to the people that responsible for policy development, enforcement and implementation. The private sectors that participate in the policy implementation either formally or informally is known as secondary stakeholder. Besides that, tertiary stakeholder is refers to the people that compliance with the law or policy (World Bank, 1995). In Malaysia, government agencies have a responsible as a primary stakeholder. Besides that, the concession companies are known as secondary stakeholder and the civilian is classified as tertiary stakeholder (Figure 2). Hence, governance of multi-stakeholders in solid waste management is very crucial to ensure the solid waste policy implementation can be conducted effectively.

4.1 Public Sector

Stakeholders of public sector are referring the government agencies are classified as a primary stakeholder because they have an authority to enforce and implement the law and policy with regard to solid waste management such as Solid Waste Management and Public Cleansing Corporation and local government. Even the decentralisation of solid waste management has occurred in Malaysia, local government still as an authority at their area based on Malaysia's Local Government Act 1976. Hence, the role of local government in solid waste management is very crucial to help the enforcement and implementation of the policy at state level. Table 1 shows the number of local government by states and status at Malaysia. In general, there is 12 city councils, 39 municipal councils, 99 district councils, and 5 modified local authorities available in Malaysia (Ministry of Urban Wellbeing, Housing and Local Government, 2014).

Table 1. The Number of Local Government by States and its Status

States	City Councils/Halls	Municipalities	District Councils	Modified Authorities	Local
Johor	1	6	8	1	
Kedah	1	3	7	1	
Kelantan	0	1	11	0	
Melaka	1	3	0	0	
Negeri Sembilan	0	3	5	0	
Pahang	0	3	9	1	
Penang	0	2	0	0	
Perak	1	4	10	0	
Perlis	0	1	0	0	
Selangor	2	6	4	0	
Terengganu	1	2	4	0	
Sabah	1	2	21	0	
Sarawak	3	3	20	0	
Kuala Lumpur	1	0	0	2	
Total	12	39	99	5	

Source: Ministry of Urban Wellbeing, Housing and Local Government (2014)

Furthermore, there is a government agency that specifically responsible on solid waste management and public cleansing at state level which is Solid Waste Management and Public Cleansing Corporation. This corporation is the official institutional of government that fully responsible for implementing the national policy on solid waste management (Muhamad Azahar and Seow, 2014). In general, the purpose of this corporation is to provide a comprehensive, integrated, cost-effective and sustainable solid waste management by considering society's demand, environmental conservation and public tranquillity. Moreover, this corporation was established under Act 673 (Solid Waste Management and Public Cleansing Corporation Act) that has been enacted in August 2007 and commenced operation in on June 2008 (Solid Waste Management and Public Cleansing Corporation, 2014). In fact, this corporation has opened its branches at nine states of Peninsular Malaysia to enhance the solid waste administration and services which are at Kuala Lumpur, Negeri Sembilan, Johor, Kedah, Melaka, Kelantan, Pahang, Terengganu and Perlis.

Besides that, there is government agency in Malaysia has play an important role in solid waste management policy development and coordination such as the Department of National Solid Waste Management. This department is established under the Malaysia Solid Waste Management and Public Cleansing Act (Act 672). Moreover, this department is coordinated under Ministry of Urban Wellbeing, Housing and Local Government of Malaysia just same like the solid waste corporation. The aim of department is to integrate and coordinate solid waste management system at the national level. Hence, all 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. The uniformity of these Acts is involved throughout Peninsular Malaysia and the Federal Territories of Putrajaya and Labuan (Muhamad Azahar and Seow, 2014).

4.2 Private Sector

Private sector participation is very crucial in solid waste management nowadays. Private sectors are frequently involved in waste collection, transfer and final disposal. The most common approaches of the private sector participate in solid waste management are namely contracting, franchise and concession (Sandra Cointreau, 1994). Contract approaches is usually implemented by developing countries instead of franchise and concession approaches. Both concession and franchise approaches are quite popular at developed countries in term of private firm involvement in waste management. In fact, both concession and franchise approaches in waste management is quite impressive. However, both method of participation have given a huge responsibility to the private firm in term of technical and financial. In the past few years, concession agreement approaches has started been applied by several developing countries including Malaysia.

In Malaysia, privatization of solid waste management has started since 1996. The privatization of the Malaysia's solid waste management is expected to provide an integrated and effective technologically advanced system to enhance the quality of environment (Irina Safitri Zen, 2001). Moreover, the participation approach of private sectors in Malaysia is mostly like contract at first and has altered into concession agreement. In essence, privatisation of solid waste management services is to reduce the financial problem and man power pressure to the local authorities in Malaysia (Nadzri and Larsen, 2012). In 2011, there are three main concession companies

that have been appointed to manage solid waste services in Malaysia such as Alam Flora Sdn Bhd, SWM Environment Sdn Bhd and E-Idaman Sdn Bhd. In this agreement, Alam Flora Sdn Bhd has responsible to cover the centre region of Peninsular Malaysia which including Kuala Lumpur, Putrajaya, Pahang, Terengganu and Kelantan. Besides that, SWM Environment Sdn Bhd is covering the southern region which including Johor, Melaka and Negeri Sembilan. Environment Idaman Sdn Bhd has covered the north region which including Kedah and Perlis (Rozita, 2014).

In fact, there are several states did not agree with this concession agreement such as Perak, Penang and Selangor. The exception of these states from the enforcement of the 672 Act is because all of the three states have not given authorisation for the federal government to privatize solid waste management. According to Section 104 of the 672 Act, Federal government may exempt any state from the Act if the enforcement of the act is rejected by that state. In this case privatization will not take place and solid waste management and public cleansing will be implemented by the concerned state government or local authorities without technical or financial assistance from the federal government. However, Perak finally agreed to privatize solid waste management under 672 Act by the end of the year. This means only two states such as Selangor and Penang, which is still disagree to enforced the 672 Act.

In some cases, the concession companies are allowed to subcontract the solid waste services to small private firm. Besides that, the states that rejected the concession agreement have appointed other private firm such as Eurasia Express Sdn Bhd and PLB Terang Sdn Bhd. at Penang. Big Tree Waste Disposal Sdn Bhd, BI-PMB Waste Management Sdn Bhd and Solid Waste Management Sdn Bhd have been appointed at Selangor. Hence, actually, there are many private firms that participate in solid waste management in Malaysia. The governance of these private firms is crucial required to ensure the effective solid waste management can be sustained.

4.3 Local Communities

Local communities refer to the civilian that comprising a broad range of organisations outside of government which including civil associations, non-profit organisations, non-governmental organisation (NGO), religious organisation, residential committees (Elbakidze et al., 2010). These organisations have play pivotal role in contribute for the public good. Besides that, these organisations have close relationship with the residential as well as the civilians. In the context of solid waste policy implementation, this group of stakeholder need to compliant with the policy developed. Hence, analysing the activities of this group is important to ensure the implementation of the policy can be conducted effectively.

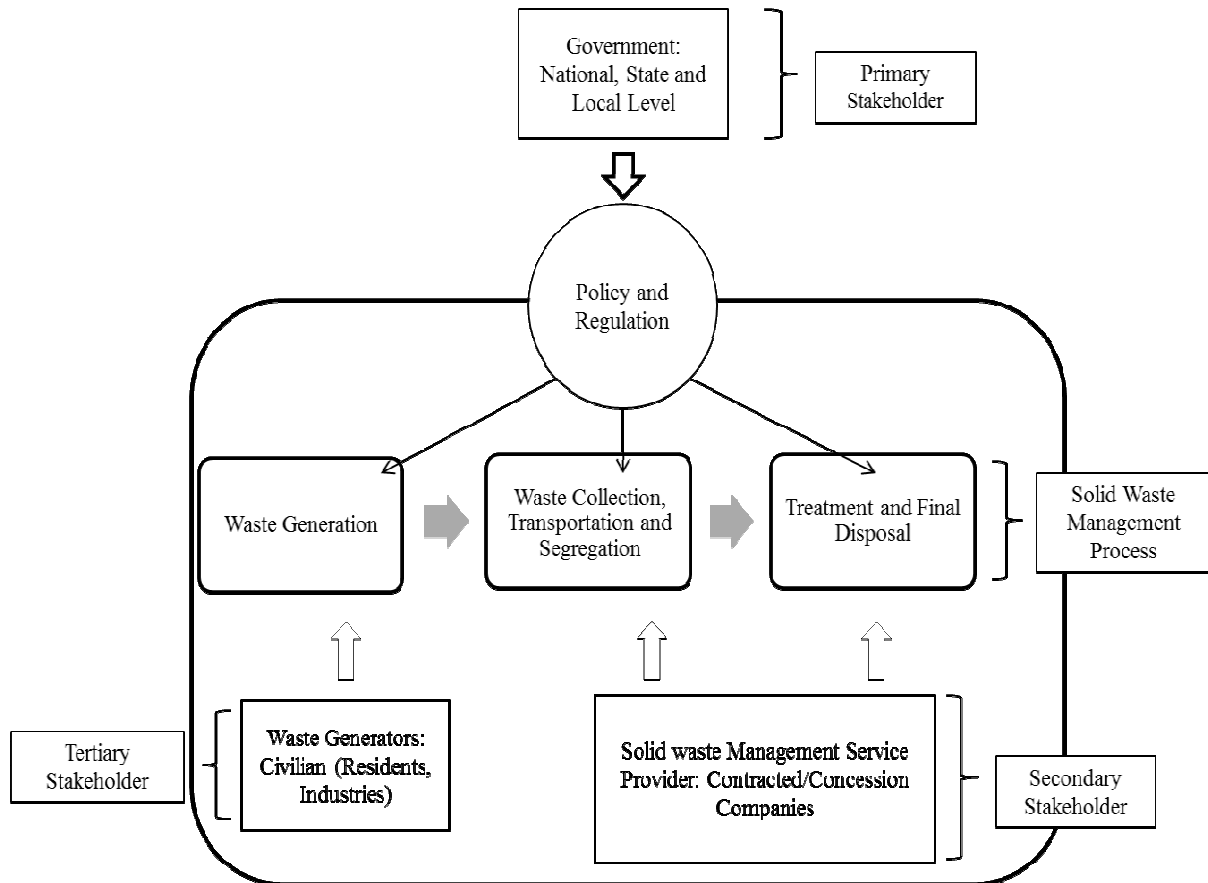


Figure 3. Multi-stakeholders in Solid Waste Management Process
 Modified from Memon (2010)

Figure 3 shows different stakeholder has played different roles as well as activities during policy implementation on solid waste management. In Malaysia, Regional Implementation Committee (RIC) and Service Level Committee (SLC) were established to enhance the governance of stakeholder in solid waste management (SWMPCC, 2011). The RIC was established at states level to solve any problems and enhance the solid waste services. Besides that, SLC was established to solve the problem at the federal level.

5. Sustainable Solid Waste Management

Sustainable solid waste management is reflecting the effectiveness as well as efficiency of the institutional to manage the solid waste beside reduces the impact of solid waste on human and environment. As the result, there are many concepts regarding solid waste management have introduced such as integrated solid waste management, zero waste concept, waste minimisation approach and waste hierarchy. In essence, these concepts have the same aim which is to improve the solid waste management in more sustainable approach. Ratio and characteristics of production and consumption should be considered, as this makes it possible to determine the required information about the amount, the quality and the composition of the waste to be treated at an early stage. The zero waste, waste minimization and waste hierarchy concept have emphasised the intervention of waste management during the consumption phase which avoiding the disposal phase. In fact, waste disposal has brought massive negative impact on human health, environmental vitality and economy development (Brosseau, 1994).

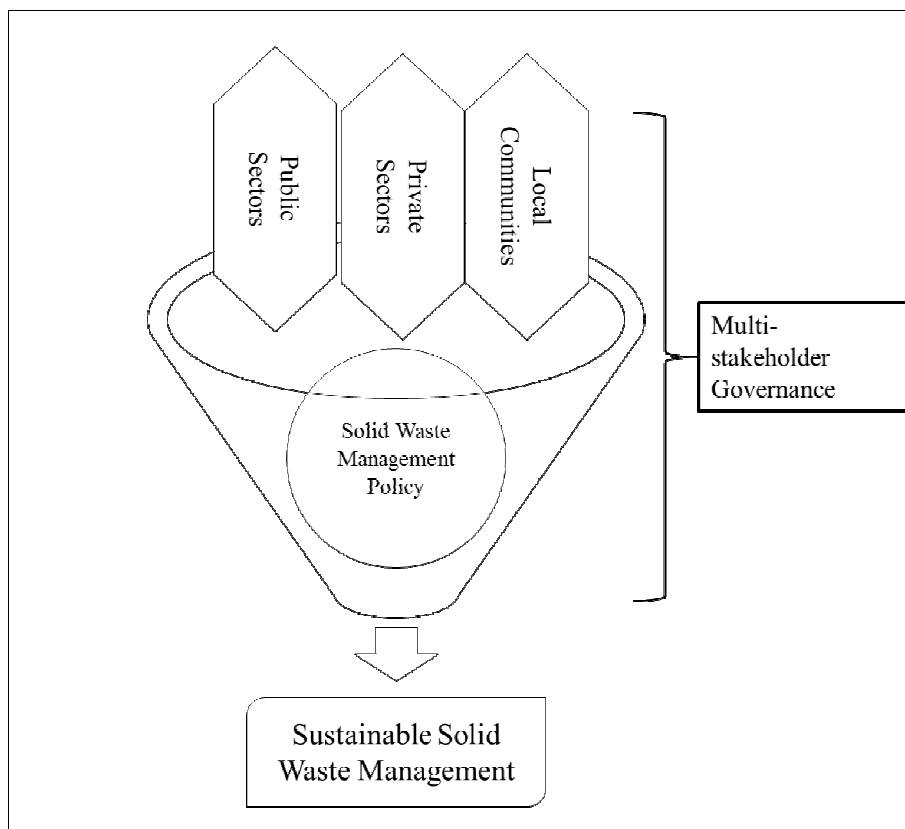


Figure 4 **The Concept of Multi-stakeholder Governance to achieve Sustainable Solid Waste Management**
Modified from Bjkerli (2013)

The prominent concept of integrated solid waste management has described the waste management entirely. It takes into consideration the whole life cycle of products which is from exploring the resources through the production until the disposal process of the waste which is from cradle to grave process. That means the process of solid waste production, transportation, treatment and disposal are taken into account. These process has involves multiple stakeholders form various level. Hence, the practice of multi-stakeholder governance is significant to ensure the sustainable solid waste management can be achieved. As the result, prosperity of the environment, social tranquillity and economy viability can be attained. Figure 4 shows the concept of multi-stakeholder governance to achieve sustainable solid waste management.

6. Conclusion

This concept paper shows the promotion of multi-stakeholder governance through participation and collaboration of relevant stakeholders in the policies implementation is very crucial to ensure the policies can be implemented more effective on the ground. Furthermore, openness and pluralism of the policy is very crucial to ensure the civilian clearly understands the policy's aim. In fact, to gain 100% stakeholder's commitment during the policy implementation on the ground is quite difficult to be achieved. Hence, further studies regarding stakeholder's commitment on solid waste management policy in Malaysia is crucial required. Besides that, extensive study regarding effective enforcement mechanism on solid waste policy implementation is very significant to be explored based on the suitability of stakeholders in the future. This study could enhance the efficiency of solid waste management policy implementation on the ground with different type of approaches. In fact, there are plenty of countries in Asia and Europe has proven the successful of solid waste policy implementation by practicing good governance on its stakeholders. This proves that multi-stakeholder governance in policy implementation might give an insight to developing countries such as Malaysia towards sustainable solid waste management. However,

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References

- Adler, P. S., and S. W. Kwon (2002) Social capital: prospects for a new concept, *The Academy of Management Review*, **27**(1):17–40.
- Agamuthu, P., Hamid, F.S., Khidzir, K. (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**: 96-103.
- Ahmad Atory Hussein (2008) *Pembentukan Polisi Awam*, 1st edition., Utusan Publications and Distributors, Kuala Lumpur.
- Andrew, M. (2008) The good Governance Agenda: Beyond Indicators without Theory, *Oxford Development Studies*, **36**(4): 379-407.
- Armitage, D., F. Berkes, and N. Doubleday (2007) *Adaptive co-management collaboration learning and multi-level governance*, University of British Columbia Press, Vancouver, British Columbia, Canada.
- Arnstein, S. (1969) A ladder of citizen participation, *Journal of the American Institute of Planners*, **35**:216–224.
- Bellamy, J. A., and A. K. L. Johnson (2000) Integrated resource management: moving from rhetoric to practice in Australian agriculture, *Environmental Management*, **25**(3):265–280.
- Bjerkli, C. L. (2013) Governance on the Ground: A Study of Solid Waste Management in Addis Ababa, Ethiopia, *International Journal of Urban and Regional Research*, **37**(4): 1278-1287.
- Blomquist, W. (1992) *Dividing the waters: Governing groundwater in southern California*, ICS Press, San Francisco, California, USA.
- Brosseau, J. (1994) Trace gas compound emissions from municipal landfill sanitary sites, *Atmospheric-Environment*, **28** (2), 285-293
- Budd, L., Charlesworth, J., Paton, R. (2006) *Making Policy Happen*, Routledge, New York.
- Cash, D. W., and S. Moser (2000) Linking global and local scales: designing dynamic assessment and management processes, *Global Environmental Change*, **10**(2):109–120.
- Claire Charbit (2011) Governance of Public Policies in Decentralised Contexts: The Multi-level Approach, OECD Regional Development Working Paper, Online URL: <http://dx.doi.org/10.1787/5kg883pkxkhc-en>.
- Coleman, J. S. (1988) Social capital in the creation of human capital, *American Journal of Sociology*, **94**:95–120.
- Dale, A., and L. Newman (2010) Social capital: a necessary and sufficient condition for sustainable community development? *Community Development Journal* **45**:5–21.
- Dietz, T., E. Ostrom, and P. C. Stern (2003) The struggle to govern the commons, *Science*, **302**:1902-1912.
- Dyakonov, K., N. S. Kasimov, A. V. Khoroshev, and A. V. Kushlin (2007) *Landscape analysis for sustainable development: theory and applications of landscape science in Russia*, Alex Publishers, Moscow, Russia.
- Dye, T. R. (2002) *Understanding Public Policy*, 10th edition., Prentice-Hall, New Jersey.
- Elbakidze, M., and P. Angelstam (2007) Implementing Sustainable Forest Management in Ukraine's Carpathian Mountains: the Role of Traditional Village Systems, *Forest Ecology and Management*, **249**:28–38.
- Elbakidze, M., Angekstam, P. K., Sandstrom, C., Axelsson, R. (2010) Multi-Stakeholder Collaboration in Russian and Swedish Model Forest Initiatives: Adaptive Governance Towards Sustainable Forest Management?, *Ecology and Society*, **15**(2): 14. Online URL: <http://www.ecologyandsociety.org/vol15/iss2/art14/>
- European Treaty Series (2000) European landscape convention, Florence, Italy.
- Folke, C., T. Hahn, P. Olsson, and J. Norberg (2005) Adaptive governance of social–ecological knowledge, *Annual Review of Environment and Resources*, **30**:441–473.
- Folke, C., T. Hahn, P. Olsson, and J. Norberg (2005) Adaptive governance of social–ecological knowledge, *Annual Review of Environment and Resources*, **30**:441–473.
- Gibbons, M., L. Limoges, H. Nowotny, S. Schwartzman, P. Scott, and M. Trow (1994) *The new production of knowledge: The dynamics of science and research in contemporary societies*. Sage Publications, London, UK.
- Grafton, Q. R. (2005) Social capital and fisheries governance, *Ocean and Coastal Management*, **48**:753–766.
- Grindle, M. (2004) Good Enough Governance: Poverty Reduction and Reform in Developing Countries, *Governance*, **17**(4): 525-548.
- Healey, P. (1996) The communicative turn in planning theory and its implications for spatial strategy formation, Environment and Planning, *Planning and Design*, **23**:217–234.
- Holling, C. S. (2001) Understanding the complexity of economic, ecological, and social systems, *Ecosystems*, **4**:390–405.
- Irina Safitri Zen (2001) Issues and Problems on Privatizing Municipal Solid Waste Management in Malaysia, In Policies to Improve Municipal Solid Waste Management, editors Chamhuri Siwar et al., Universiti Kebangsaan Malaysia.
- Latifah, A. M., Mohd Armi, A. S., Nur Ilyana, M. Z. (2009) Municipal Solid Waste Management in Malaysia: Practices and Challenges, *Waste Management*, **29**: 2902-2906.
- Lazdinis, M., and P. Angelstam (2004) Connecting social and ecological systems: an integrated toolbox for

- hierarchical evaluation of biodiversity policy implementation, *Ecological Bulletin*, 51:385–400.
- Mayers, J., and S. Bass (2004) *Policy that works for forests and people*, Earthscan, London, UK.
- Memon, M. A. (2010) Integrated Solid Waste Management Base on the 3R Approach, *Journal of Material Cycles and Waste Management*, **12**: 30-40
- Ministry of Urban Wellbeing, Housing and Local Government (2014) Number of Authorities by States and Status, information on <http://jkt.kpkt.gov.my/english.php/pages/view/138>
- Muhamad Azahar, A. and Seow, T. W. (2014) Municipal Solid Waste Management in Malaysia: An Insight Towards Sustainability, In proceeding 4th International Conference on Human Habitat & Environment, Universiti Kebangsaan Malaysia, 5-6 May, **18**: 192-206.
- Nadzri, Y. & Larsen, I. B., “Federalising Solid Waste Management in Peninsular Malaysia,” Department of National Solid Waste Management. Malaysia, 2012.
- Olsson, P., C. Folke, V. Galaz, T. Hahn, and L. Schultz. 2007. Enhancing the fit through adaptive co-management: creating and maintaining bridging functions for matching scales in the Kristianstads Vattenrike Biosphere Reserve, Sweden. *Ecology and Society* **12**(1): 28.
- Paudel, N. R. (2009) A Critical Account of Policy Implementation Theories: Status and Consideration, *Nepalese Journal of Public Policy and Governance*, **15**(2): 36-54.
- Putnam, R. D. (2000) *Bowling alone: the collapse of and revival of American community*. Simon and Schuster, New York, New York, USA.
- Read, A. D., “Making Waste Work: Making UK National Solid Waste Strategy Work at Local Scale,” *Resources, Conservation, and Recycling*, 1999, **26**: 259-285.
- Rozita, S. M. (2014) The Effect of Federal Government Policy on Local Government Service Delivery: A case Study on Refuse Collection Privatization, http://www.kapa21.or.kr/data/data_download.php?did=6309 [Assessed on 15 February 2014]
- Sandra Cointreau-Levine (1994) *Private Sector Participation in Municipal Solid Waste Services in Developing Countries*, The World Bank, Washington D. C., U.S.A.
- Shindler, B. A., T. M. Finlay, and M. C. Beckley (2003) *Two paths toward sustainable forests. Public values in Canada and the United States*. Oregon State University Press, Corvallis, Oregon, USA.
- Solid Waste Management and Public Cleansing Corporation (2014) Background, information on <http://www.ppsppa.gov.my/index.php/mengenai-ppsppa/latar-belakang>
- Solid Waste Management and Public Cleansing Corporation, SWMPCC (2011) Annual Report 2011, Kuala Lumpur.
- Stoker, G. (1998) Governance as theory: five propositions. *International Social Science Journal* **50**(155):17–28.
- Thomas, C. W. (2003) *Bureaucratic landscapes: interagency cooperation and the preservation of biodiversity*, MIT Press, Cambridge, Massachusetts, USA.
- Thomas, J. W. and Grindle, M. S. (1990) After Decision: Implementation Policy Reforms in Developing Countries, *World Development*, **18**(8): 1163-1181.
- Winter, S. C. (2003) Implementation, in *Handbook of Public Administration*, Editor: Peter, B. G. and Pierre, J., Thousand Oak, California.
- World Bank (1995) Stakeholder Consultation and Participation in Municipal Solid Waste Management Planning, Social Development Department, United Kingdom.
- World Commission on Environment and Development, WCED (1987) *Our Common Future*. Oxford: Oxford University Press.

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