Journal of Contemporary Issues in Business and Government Vol. 27, No. 1, 2021
P-ISSN: 2204-1990; E-ISSN: 1323-6903
https://cibg.org.au/

Approaches to Effective Management in Reducing Plastic Waste in Malaysia from the Socio-Legal Aspect

Hanim Kamaruddin[1] , Nur Insyirah Bt Jasri[2], Munirah binti Mohamed Halid[3], Nur Wafaa Azreen binti Mohd[4], Nur Hasyazira Binti Hashim[5], Nur Najwa Athirah bt Mohamed Nawawi[6] & Sahain Nada Puthucheary[7]

[1]Universiti Kebangsaan Malaysia, hanim@ukm.edu.my
[2]Universiti Kebangsaan Malaysia Syirah.jasri2103@gmail.com
[3]Universiti Kebangsaan Malaysia a163235@siswa.ukm.edu.my
[4]Universiti Kebangsaan Malaysia A164772@siswa.ukm.edu.my
[5]Universiti Kebangsaan Malaysia nur5974789@gmail.com
[6]Universiti Kebangsaan Malaysia a164060@siswa.ukm.edu.my
[7]Universiti Kebangsaan Malaysia sahainnada2104@gmail.com

Abstract
Plastic waste pollution is a major problem in Malaysia as the country ranks among the top ten countries with mismanaged plastic waste in the world. Malaysia has produced significant amount of plastic waste where most are washed into the oceans, dumped at landfills, burnt, and a fraction being recycled. This situation continuously affects human health and environment especially in marine waters. Existing waste management practices lack in handling large amount of plastic waste from household and businesses as there is no uniform approach within Malaysia to address the use of plastic waste. This paper reviews and analyses existing laws and social practice in relation to reducing plastic waste in Malaysia. It concludes that initiatives by the Malaysian government to reduce plastic waste is still within preliminary stages, and substantive legal approach remains absent.

Keywords: plastic; Malaysia; law; management; waste

1. INTRODUCTION

The increasing number of plastic usage remains essential in day-to-day activities (Rodriguez, 2019) as it is has assimilated into our daily lives and regarded as conveniently accessible in many forms. Since the plastic industry began, annual global plastic production has rose exponentially from 1.5 million metric tons in 1950 to 348 billion metric tons in 2017 (Wang, 2020). Cumulatively, plastic production has reached 8.3 billion metric tons worldwide, with a foreseeable global increase expected by the year 2050 (Parker, 2018) where packaged products influence the use of plastic (Ritchie et.al 2018).

Plastic materials possess the inability to break down naturally, resulting in increase of plastic production of the ecosystem. Concerns over the detrimental aspects of plastic have escalated over many years as a visibly marked increase of pollution caused by plastic wastes from domestic or business usage into inland and marine waters apart from dumpsites. The total cost of damage to the marine economy in the APEC region in 2015 is an estimated $10.8 billion from marine debris damage, principally plastic (McIlgorm, A. et.al, 2020). A study estimated that Malaysia had produced 0.94 million tons of mismanaged plastic waste, of which 0.14 to 0.37 million tons may have been washed into the oceans (Jambeck, 2015). Recreational beaches in Malaysia have recorded high quantities of plastic debris collected due to human activities such as fish sorting, cleaning, trading and maintenance of fishing gears such as net and boats (Fauziah, 2015). It is found within Malaysia that the recreational beaches sampled had an average of 399 items metre squares of plastic debris, while fishing beaches had an average of 466 items metre squares indicating the amount of buried plastic was not entirely influenced by the types of activities conducted on beaches, but also plastic stranded on beaches due to it being transported by waves (Chauhan, 2019). According to a study by prominent survey group YouGov Omnibus, at least one in five (22%) out of the 1,013 Malaysians polled used plastic straws daily (The Star, 2019).

Plastic imports is another concern which Malaysia has confronted in the past few years that added on to problems of plastic waste and disposal management. According to the UN Comtrade database, after China imposed a ban in 2018, Malaysia had turned out as a major hub for plastic waste. It was estimated about 658,000 tons of plastic had been imported to Malaysia in comparison with other Asian countries (Buchholz, 2019).

Studies are predicting a twofold increase in the number of plastic debris (including micro and nano-sized plastics) by 2030 likely to be aggravated by the excessive use and consumption of single-use plastic due to COVID-19 pandemic. The demand on plastics is expected to increase by 40% in packaging and 17% in other applications, including medical uses (Patricio Silva et.al, 2021). The COVID-19 pandemic has severely disrupted plastic reduction policies at the regional and national levels and induced significant changes in plastic waste management with potential for negative impacts in the environment and human health (Patricio Silva et al., 2020). The effects of plastic pollution and its potential implications on the human environment in Malaysia shall be addressed particularly on legal strategies and related challenges to reduce plastic waste.

2. INITIATIVES IN MALAYSIA

Government actions in Malaysia to reduce or ban plastic as a method towards zero single-use, are considered as positive steps by which the local communities and other stakeholders have to be involved. At present, there is no uniform approach in Malaysia to address single-use plastics, let alone any comprehensive or specific legislative framework to reduce the use of single plastics.

To move forward, Malaysia has prepared a guide towards zero single-use plastics in Malaysia in a holistic manner known as The Roadmap towards Single Use Plastics 2018-2030. This Roadmap is envisaged to deploy actions to combat plastic waste pollution and adopting zero single use plastic in Malaysia. The Roadmap aims to take a phased, evidence-based and holistic approach by involving all stakeholders in jointly addressing single-use plastics pollution in Malaysia. Amongst the goals is to review existing laws and to develop a legal framework on single-use plastics. To ensure the objectives of this roadmap are met, six (6) principles are adopted that are shared responsibility, sustainable development, precautionary principle, participatory, good governance and living document (MESTECC, 2018).

The objectives laid down in the Roadmap can be considered pertinent to assess existing legislation as well as to learn from experiences of other nations to resolve issues of plastic waste in Malaysia. Thus, developing legislation that has the potential to govern the problem at its source by regulating single-use plastics at their point-of-contact with consumers seemed probable towards zero single use plastics in Malaysia regardless of the lack of scientific findings on the impacts of plastic on the human environment.

There are no specific laws to govern or reduce plastic pollution in Malaysia although Environmental Quality Act 1974 (EQA) acts as the main legislation in preventing or control pollution. The term 'plastic' is not mentioned in the EQA but it can be surmised that *'Waste'* as defined may include plastic under Section 2 of the Act. It reads *' waste includes* as *any matter prescribed to be scheduled waste, or any matter whether it is in a solid, semi-solid or liquid form, or in the form of gas or vapour which is emitted, discharged or deposited in the environment in such volume, composition or manner as to cause pollution'.* In addition, 'plastic' is mentioned as a type of wastes which may contain either inorganic or organic constituents or, containing or contaminated with polychlorinated biphenyls (PCB) or polychlorinated triphenyls (PCT) in the First Schedule of Environmental Quality (Scheduled Wastes) Regulations 2005. There are other legal and non-legal mechanisms to reduce or control plastic usage in Malaysia that include:

a. Policies on solid waste management have evolved due to increase of solid waste generation such as plastic waste from simple informal policies to the Action Plan for a Beautiful and Clean Malaysia (ABC) in 1988, the National Strategic Plan for Solid Waste Management (NSP) in 2005, the Master Plan on National Waste Minimization (MWM) in 2006, the National Solid Waste Management Policy in 2006, the Solid Waste and Public Cleansing Management Act (SWMA) in 2007, the Solid Waste Corporation Strategic Plan (2009-2013) and finally to the Tenth Malaysian Plan (2011-2015) which has articulated the Malaysian government's commitment to sustainable waste management (Agamuthu & Victor, 2011).

b. Solid Waste and Public Cleansing Management Act 2007 (Act 672) regulates the management of controlled solid waste and public cleansing for the purpose of maintaining proper sanitation. It provides for categories of waste that include public solid waste, imported solid waste, household solid waste, institutional solid waste, special solid waste,

commercial solid waste, construction solid waste, industrial solid waste, controlled solid waste and recyclable solid waste. Commonly, plastic solid waste of polymers can be found in these categories of waste. Part 4 and Part 8 of this Act explain the procedure of combating plastic pollution through applying proper management and control of solid waste generators and persons in possession of controlled solid waste provided that a license is issued (Mustafa, 2011). Although waste minimization is emphasized in the Act, the techniques to reduce waste generation are not specified and the options are too generalized (Agamuthu, 2011) besides not addressing issue on reduction of single use plastic. The Director General has the task of supplying controlled solid waste to the solid waste management facilities and applying the timescale for the implementation of the plans, pursuant to Section 6(1) (b). Section 71(1) states that no person shall deposit, separate, store, keep, collect, transfer, transport, treat or dispose of or cause to be or permit to be deposited, separated, stored, kept, collected, transferred, transported, treated or disposed of any controlled solid waste otherwise in accordance with this Act. Should any controlled solid waste be deposited or disposed of in contravention of the SWMA, the Director General may direct such persons to remove the controlled solid waste within 3 days pursuant to Section 76(1). Part X of the SWMA provides the Minister with certain powers for the reduction, reuse and recycling of controlled solid waste. The powers of the minister in this respect include to require any person to use environmental friendly material, to require any solid waste generator to reduce the generation of controlled solid waste and to require the use of any method or manner for the purpose of reducing the adverse impact of the controlled solid waste on the environment.

c. Measures on single use plastic reduction efforts in Malaysia include straight bag and use of plastic drinking straws ban and bag fee at supermarkets in Selangor, Penang, Melaka and Kedah (NST, 2019) and recycling. The rate of recycling in Malaysia is relatively low at 28% as compared to developed countries such as the United Kingdom 44%, Germany 68% Singapore 61% and Thailand 21% although the total rate of recycling in Malaysia is increasing every year (Wong & Alyssa, 2019).

3. MATERIALS AND METHODS

This study draws existing data from primary and secondary sources including legal documents, policy documents, case studies, published and unpublished research articles, books, journals and other environmental structures from other countries on issue of plastic waste Generally, this is a legal study of primary sources referred to as existing legislation followed by secondary sources of foreign government laws on reducing plastic waste.

4. RESULTS AND DISCUSSION

The current scenario in Malaysia allows for irregularity or inconsistencies amongst local and state governments to implement actions at different stages and time for reducing or diminishing the use of plastics for example ranging from imposing a pollution charge, straight ban bag, bag fee or a no straw by default policy. Another crucial issue that Malaysia faces in dealing with reducing plastic pollution is the lack of specific and targeted legislation which

causes a lack of uniform approach causing differences in implementation and performance as the schemes are enforced differently in different jurisdictions, causing the programs to be less effective overall. Furthermore, Malaysia's low rate in recycling practices only indicates that the task of recycling plastic waste seems daunting. Thus, developing national legislation that has the potential to govern the problem at its source by regulating single-use plastics at their point-of-contact with consumers, for example, seemed probable towards zero single use plastics in Malaysia regardless of the lack of scientific findings on the impacts of plastic on the human environment. By enacting legislation to ban or strictly regulate other single-use plastic items or regulating the source of single-use plastics by imposing producers and manufacturers of single-use plastics to internalize the externalities of their products, the vision of the Roadmap 2018-2030 to attain targeted objectives may be hastened. Furthermore, this may also encourage corporations to improve product designs in a more sustainable fashion or create economically feasible ways to re-use or recycle products from plastics. Such methods will have an impact on production trends and result in waste management benefits.

More than 60 countries have introduced some measures to curb single-use plastics waste, such as imposing bans and levies. Some countries have imposed a direct ban on single-use plastics, but according to the 2018 United Nations Environment Programme (UNEP) report on *Single-Use Plastics: A Roadmap for Sustainability*, the bans have not been adequate to curtail plastic pollution. For example, India is planning to phase-out single-use plastics by 2022. Taiwan and the European Union plan to eliminate single-use plastics by 2030 (UNEP, 2018). New Zealand has enacted The Waste Minimisation Act 2008 (WMA). The law was passed to encourage waste minimization and to decrease the disposal of waste in order to protect the environment and to provide environmental, social, economic, and cultural benefits. The WMA defines waste as anything disposed of, or discarded, and includes a type of waste that is defined by its composition or source. Other regulations were enacted pursuant to Section 23(1) (b) WMA which are Waste Minimisation (Microbeads) Regulations 2017 and the Waste Minimisation (Plastic Shopping Bags) Regulations 2018. The Waste Minimisation (Microbeads) Regulations 2017 prohibits the manufacture and sale of wash-off products (other than medical devices or medicines) that contain microbeads while the Waste Minimisation (Plastic Shopping Bags) Regulations 2018 prohibits retailers from selling plastic shopping bags in New Zealand.

By comparison, the only significant legislation available in Malaysia is targeted at administrating and regulating plastic waste as opposed to minimising plastic waste or progressively preventing pollution by plastic waste. To date there are no orders that have been published in any Gazette aimed at reduction, reuse and recycling pursuant to Part X of the SWMA. Although waste minimization is emphasized in the Act, the techniques to reduce waste generation are not specified and the options are too generalized (Agamuthu, 2011) besides not addressing the issue of reduction of single use plastic. Apart from the SWMA 2007, there are no laws that eliminate or reduce the production or use of single-use bags or single-use plastics in general. Furthermore, the awareness of Malaysians about plastic pollution is more focused towards reducing the usage of plastic straws. Thus, Malaysian

have to shift their mentality or behavior toward plastic waste not only toward plastic straw but to plastic waste as a total product or material whereby a simple solution would consist of recycling plastics more often, gaining a sense of responsibility about the environment and to bring their own shopping bags (Wong & Alyssa, 2019). For these reasons, it is concluded that Malaysia would stand to gain from legislation that targets at plastic waste and potential phase out of sale and distribution of plastic. Some noteworthy laws implemented in other countries on reducing the use plastic are United States Microbeads Free Water Act 2015 that restricts the production of beauty and cosmetic products containing microbeads, Japan's Containers and Packaging Recycling Act 1995, Africa's Law No. 57/2008 of 10 September 2008 on the prohibition of the manufacture, import, use and sale of polyethylene bags and Korea's 2007 Waste Control Act. These laws can be used as basis or benchmarks to create specific legislation to reduce plastic usage and waste in Malaysia.

5. CONCLUSION

The issue of plastic waste in Malaysia is caused by the lack of specific and targeted legal governance that primarily focuses on reducing or preventing plastic waste The foreign legislation highlighted, therefore, may well be used as benchmarks to enact and implement new legal framework to reduce plastic waste in Malaysia. Equal attention must also be directed to social responsibility and awareness of Malaysians to bring impactful change to reduce plastic waste in Malaysia.

ACKNOWLEDGMENT

This research is financially supported by Universiti Kebangsaan Malaysia (UKM) Research Grant Fund (GUP-2019-064).

6. REFERENCES

[1] Agamuthu, P & Victor, D (2011). Policy Evolution of Solid Waste Management. Retrieved at http://eprints.um.edu.my/12896/1/2.Policy_evolution_of_Solid_Waste_Management_in_Malaysia.pdf

[2] Buchholz, K. (2019). "Malaysia new hub for plastic waste as China exits market". Statista. Retrieved at https://www.statista.com/chart/18451/trade-flows-of-major-exporters-of-plastic-waste/.

[3] Chauhan, GS & Wani, S (2019). "Plastic Pollution: A Major Environmental Threat". International Journal of Innovative research in Technology, Volume 6, Issue 6, pp 43-46.

[4] Fauziah, Sh., Liyana, IA & P Agamuthu (2015). "Plastic debris in the coastal environment: The invincible threat? Abundance of buried plastic debris on Malaysian beaches". Waste Management and Research 33: 812–821.

[5] Jambeck, JR. Geyer, R. & Wilcox, C. et al. (2015). "Plastic waste inputs from land into the ocean". Science. 347 (6223):768- 71.

[6] McIlgorm, A., K. Raubenheimer and D.E. McIlgorm (2020). Update of 2009 APEC report on Economic Costs of Marine Debris to APEC Economies. A report to the APEC Ocean and Fisheries Working Group by the Australian National Centre for Ocean Resources and Security (ANCORS), University of Wollongong, Australia, December.
[7] Mustafa, M. (2011). "Environmental Law in Malaysia". The Netherlands: Aspen Publishers, Kluwer Law International.
[8] "Plastic straw ruling needs public support" (2019, April 26). The Star. Retrieved at https://www.thestar.com.my/metro/community/2016/08/22/billions-of-plastic-bags-still-being-used-six-years-have-gone-by-since-the-government-launched-the-n/
[9] Parker, L. 2018. "Here's how much Plastic Trash is littering the Earth". Retrieved at
[10] https://www.nationalgeographic.com/news/2017/07/plastic-produced-recycling-waste-ocean-trash-debris-environment/.
[11] Ritchie, H & Roser, M. (2020)."Plastic Pollution". Our World in Data. Retrieved at https://ourworldindata.org/plastic-pollution
[12] Rodriguez, F. (2019). "Plastic". Encyclopedia Britannica. Retrieved at https://www.britannica.com/science/plastic
[13] United Nations Environmental Programme (UNEP) (2018). "Single-Use Plastics: A Roadmap for Sustainability". Retrieved at https://wedocs.unep.org/bitstream/handle/20.500.11822/25496/singleUsePlastic_sustainability.pdf
[14] Wang, T. (2020). "Plastic Waste Worldwide- Statistics and Facts". Statista. Retrieved at https://www.statista.com/topics/5401/global-plastic-waste/
[15] Patrício Silva AL, Prata JC, Walker TR, Campos D, Duarte AC, Soares AMVM, Barcelò D, Rocha-Santos T. (2020). "Rethinking and optimising plastic waste management under COVID-19 pandemic: Policy solutions based on redesign and reduction of single-use plastics and personal protective equipment". Sci Total Environ. 742:140565.
[16] Patrício Silva AL, Prata JC, Walker TR, et al. (2021). "Increased plastic pollution due to COVID-19 pandemic: Challenges and recommendations". Chemical Engineering Journal. 405:126683.
[17] Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC) Malaysia (2018). Malaysia's Roadmap towards Zero Single Use Plastics 2018-2030: Towards a Sustainable Future.
[18] Wong, E.K. & Alyssa, F.H (2019). Plastic: An Undegradable Problem. Kuala Lumpur: Khazanah Research Institute. License: Creative Commons Attribution CC BY 3.0.