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ENFORCEMENT STRATEGY AND CHALLENGES OF HAZARDOUS WASTES REGULATION

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ABSTRACT

Industrial sector in Malaysia continues to grow but with undesirable environmental impacts including higher generation of hazardous wastes. Malaysia regulates environmental problems mainly through the Environmental Quality Act 1974 and its regulations. However, the effectiveness of these laws is determined by their enforcement. This paper aimed to determine strategy used by the Department of Environment Malaysia (DOE) in enforcing hazardous waste regulations as well as to identify and describe practical challenges confronting the regulator in undertaking the enforcement tasks. In doing so, the researchers undertook face-to-face key informant interviews with DOE officers involved in enforcement and carried out participant observation of regulatory enforcement routines by following the officers in the study area. The results of this study indicated that although the respondents used mixes of regulatory strategies in enforcing the hazardous waste regulations, they had an inclination towards a 'compliance' strategy. The study also found that, common enforcement hindrances especially insufficient institutional capacity and lack of public awareness hindered an effective enforcement of the laws.

Keywords: Hazardous waste, scheduled waste, regulation, enforcement, challenges.

1. Introduction

Malaysia has undergone a period of rapid growth in the industrial sector especially in manufacturing since the mid-1960s. However, with the increasing manufacturing activities comes the problem of higher generation of hazardous wastes. In 2013, Malaysia generated about 2.97 million metric tonnes of hazardous wastes. This shows an overall increase of 3.89% as compared to 2012 (DOE 2014). In descending order, the top five categories of scheduled wastes generated were gypsum; dross, slag, clinker and ash; spent lubricating oil; heavy metal sludge; and contaminated containers (DOE 2014). The top three industries in Malaysia, which

generated 60.5% of hazardous wastes in the country in 2013, were recovery facilities, chemical industry as well as electrical and electronic industry (DOE 2014). As depicted by major environmental tragedies like the Love Canal in the United States, hazardous wastes if not managed properly can lead to adverse impacts on the environment and human health (Manahan 2005). Developed countries have long aware and strictly regulate management of hazardous waste. To an extent this has caused some producers in developed countries to export their waste for disposal in developing countries that have lax regulations and enforcement, apart from cheaper operational cost (Hunter et al. 2011). Compared to developed countries, developing countries suffer from additional challenges including constrained financial resources to afford advanced waste management technologies, insufficient trained specialists, low priority given to the issue and lack of public awareness (Kahn et al. 2009). For example in India, weak enforcement is most often relate to issues such as lack of financial resources, shortage of staff and lack of legal authority for regulators (ELI 2014). Likewise, in Southeast Asia, despite some countries imposing strict regulations to manage hazardous waste, weak enforcement including poor monitoring and low amount of penalties for offenders have encouraged industries to ignore full implementation of the legal requirements (Visvanathan 2002). For many countries in this region, the scale and location of industries are also causing major problems to hazardous waste management. Many industrial premises operate in a small scale and still use outdated equipment and cannot afford to install on-site treatment facility and they may also hesitant to send their waste to proper treatment or disposal facilities for financial reason. Monitoring efforts by regulator is also limited in light of the large numbers of small-scale industries in the region. On top of that, as industries are the backbone of economic development, many regulators in developing countries are reluctant to implement strict enforcement policy like shutting down non-complying premises (Visvanathan 2002).

1.1 Hazardous wastes regulation in Malaysia

The Environmental Quality Act 1974 (EQA) is intended to protect Malaysia's environment from uncontrolled pollution and to improve the quality of the existing environment. In order to control deposit of hazardous waste into the environment, the EQA prohibits against placing, deposit or disposal of hazardous waste onto Malaysian land or into Malaysian waters. Contravening the prohibition may risk one to be fine up to RM500,000 or imprisonment for a period not exceeding five years or to both upon conviction. Hazardous waste under the EQA is termed as scheduled waste which refers to any waste prescribed as scheduled wastes in the First Schedule to the Environmental Quality (Scheduled Waste) Regulations 2005 (EQSWR). The EQSWR gives authority to the DOE to monitor all activities related to scheduled wastes from its generation to disposal. Under the regulations, waste generators have broad responsibilities. However, since industries in Malaysia have been subjected to waste management controls since 1989, broad impositions of liabilities to them as waste generators are not inappropriate. Waste generators are required to notify the authority of any new categories and quantities of scheduled wastes that they generate within 30 days from the date of generation of such wastes. Treatment of or

recovery of material or product from scheduled wastes must be done at prescribed premises or respectively at on-site treatment or recovery facilities only. With regard to storage, wastes generators must ensure their scheduled wastes are properly stored, treated or recovered on-site. Otherwise, they must deliver the wastes to prescribed premises for treatment, disposal or recovery of material. Containers used for storage must be durable to prevent leakage of the scheduled wastes into the environment. All incompatible scheduled wastes shall be stored in separate containers and placed in separate secondary containment areas. Storage areas of the containers must be designed and maintained adequately to prevent any misshapen. Containers of scheduled waste must be labelled with the date it was first generated together with name and contact details of the waste generator, types of waste and marked with scheduled waste code as specified in the EQSWR. Waste generators must also maintain accurate and up-to-date inventory of the categories as well as quantities of scheduled wastes being generated, treated and disposed of and of materials recovered from such scheduled wastes.

A consignment note completed by waste generator, contractor and occupier of the prescribed premises must accompany hazardous waste when moved from any premise to the prescribed premises. Each of them need to complete a different part of consignment note as scheduled waste is moved from the generator to the contractor and to the occupier of any prescribed premises. If the waste generator fails to receive his copy of the consignment note from the occupier within 30 days from the date of delivery of the scheduled wastes to the contractor, he shall notify the Director General of Environment immediately and shall investigate the matter.

1.2 Enforcement of environmental regulations

Despite the enactment of legislation, in the absence of enforcement, laws alone have no teeth. In the case of the EQA and all its subsidiary regulations including the EQSWR, enforcement is done mainly by a federal agency namely the DOE, which has state branches throughout the country. Essential to an effective enforcement programme is adequate legal authority to conduct investigations and inspections, compel compliance, and impose penalties. Under the EQA, the DOE enforcement powers embrace investigation, arrest, search, compounding of offences, seizure and other measures. The DOE uses a set of environmental enforcement tools to reach and maintain compliance, which are authorized in the EQA and its regulations, ranging from compliance assistance to administrative enforcement that does not involve a judicial court process to the stronger criminal enforcement. Usually, a potential breach is identified through inspecting, monitoring, citizen reporting, or through self-reporting by the regulated premise. Among the most common contraventions recorded include failure to submit notifications of scheduled wastes generation to DOE, improper storage and labelling and failure to keep accurate and up-to date inventory records of scheduled wastes (DOE 2014).

Three different enforcement strategies most often found in practice in environmental agencies are identified as the 'rules and deterrence strategy'; 'compliance' strategy; and 'responsive regulation' strategy (Gunningham 2011). The rules and deterrence strategy is the most stringent

approach of enforcement. It emphasizes a confrontational style of enforcement and the sanctioning of rule-breaking behavior. The assumption under this approach is rational people respond to incentives, and thus, 'if offenders are detected with sufficient frequency and punished with sufficient severity, then they, and others, will be deterred from future violations' (Gunningham 2010). In short, this strategy requires clear consequences for non-compliance. Therefore, it focuses on detecting violations, establishing guilt, and penalizing wrongdoers. In contrast, a compliance strategy emphasizes cooperation rather than confrontation and conciliation rather than coercion to avoid any harm or conflict with the regulated entities. It assumes that majority of people are willing to comply voluntarily and emphasizes the importance of encouraging them to act in accordance with the law. Another approach is called responsive regulation, Ayres and Braithwaite (1995) proposed this regulatory enforcement strategy which uses 'enforcement pyramid'. The strategy is like a combination of the rules and deterrence approach and the compliance approach whereby regulators will respond based on the regulated party's responses to the enforcement measures they take. In doing enforcement, according to this 'responsive' strategy, regulator should start at the bottom of the pyramid where advisory and persuasive actions like warnings or demands for remedial action are listed. Then the regulator can escalate up to lenient punishment such as penalty notice or administrative compound in the middle and to stricter punitive sanctions like prosecution at the top of the pyramid when appropriate; depending on the responses of the regulated parties to the initial and subsequent enforcement actions imposed (Braithwaite, 2002).

2. Materials and Methods

This study used qualitative research methods for data collection and analysis. Primary data was collected through face-to-face semi-structured interview with six key informants from DOE Klang Selatan and headquarter in Putrajaya as well as through participant observation. The latter was conducted by following and observing environmental officers during their routine or follow-up inspections at 14 premises around three major areas in Klang Selatan. Duration period of observation was about three months with twenty hours observation conducted successfully. A checklist form was created to ensure a systematic and consistent observation record was done. All data gathered were analyzed using the Thematic Content Analysis (TCA). TCA is a descriptive presentation of qualitative data by identifying common themes (Anderson, 2007). The steps used for the study include repeated reading to categorize and code the data, sorting categories or data to identify which is most important and which data that can be ignore and so on.

3. Result

All respondents more or less had similar understanding about enforcement by describing it as a process of actions taken by regulatory agency to ensure compliance of law by the regulated parties. The study found that the respondents adopted a combination of compliance and responsive strategies but with tendency towards the former strategy. Several respondents stated

that inspection at regulated premises was not intended to find any breaches but rather to help them complying with legal requirements. A few of them also emphasized that while some repeat offenders might deserve strict enforcement action, most would comply if opportunity was given to them to correct the situation. Likewise, some respondents mentioned that rather than straight away imposing punishment, the regulated premises needed to be made aware or reminded about the regulatory requirements. In short, unless an imminent danger or hazard has been determined, most respondents would usually attempt to obtain corrective actions by issuing a warning or notification to the regulated parties that violation had occurred and would grant some reasonable time for them to comply. However, the respondents indicated that they would take stricter action when appropriate. If upon following-up the matter, no corrective action had been taken, then a stricter measure would be taken.

Results of the study also discovered three recurring themes that influenced the respondents in deciding what initial intervention measures to take upon detecting any infringement or what subsequent measures to take upon following-up previous breach. The first factor was track record of the regulated premises where factors like first offender or repeat offender would be considered. The second factor was cooperation given by the regulated entities during inspection, follow-up and in responding to corrective measures required from them. Uncooperative premises would make it hard for the respondents to help them to comply with the law. Therefore, the respondents would usually take a stricter approach like issuing notice order and so on. Another factor that affects the respondents' decision-making was the surrounding physical conditions of the regulated premises like their record-keeping, storage as well as labelling of the hazardous wastes. For instance, if scheduled wastes are stored at improper place in a particular premise or labelling is done so haphazardly as to potentially may cause untoward incidents; these can prompt the respondents to take a stricter enforcement action rather than just giving an advice. Apart from that, in the wake of the high number of regulated industrial premises in Klang Selatan, the study also found that the officers were forced to be selective and to prioritize their target premises. Even so, the small number of enforcement officers compared to the number of premises suggested that monitoring or subsequent visit after the first inspection at a specific premise may be undertaken at a very long time apart.

The study identified several major practical challenges in enforcing scheduled waste regulations in Klang Selatan. A primary challenge for them was the threat to their personal safety by scoundrels, who could be members of certain rogue gang, who tried to stop DOE officers from doing inspection or investigation. Rude and non-cooperative staff of some regulated premises was another primary hurdle that the respondents often faced. This situation requires officers to have high mental strength to prevent demoralization and distress. The lack of knowledge or awareness on the regulatory requirements especially among premise owners also presents a challenge. The problem was worsened for premises with foreign investors which usually had top management staff from foreign country and who, sometimes, did not understand Malay or English language. The situation forced the respondents to explain in detail and step-by-step on

how to manage scheduled wastes and so on. Apart from that, enforcement officers were also exposed to bribery. With regard to institutional capacity, the main constraint faced by DOE Klang Selatan was insufficient main power in comparison to the increasing number of factories, sources of pollution and load of pollution year by year. This situation forced the Unit to stretch thin their officers in undertaking the enforcement tasks. On top of that, there was lack of vehicles for enforcement activities. This is a common problem for many branches. The cars that were available were mostly old and required frequent maintenance, during which period respondents could not proceed with monitoring, inspection and investigation operations, unless the unit had other alternative vehicles. In addition, equipment such as reagent and sampling bottle were sometimes expired. One respondent raised a concern about lack of safety apparatus during site visit at scheduled wastes premises.

4. Discussion

The results of the study show that DOE environmental officers tended towards a primarily compliance-oriented approach in doing the enforcement. The existing practices of the DOE which emphasize self-regulation are in line with this strategy. Malaysian DOE establishes several systems to monitor compliance including the electronic consignment note system that provides report of generation and disposal of hazardous waste. The Department also has its own online application system to record and track down the compliance history of industries based on inspections and investigations which are conducted with support from a GIS application system (UNEP 2015). These systems will help the DOE to monitor compliance of the regulated parties. The EQA and its regulations are designed to balance the needs between economic development and environmental protection as they do not strictly prohibit pollution by industries but merely restrict it within the prescribed limit (Mustafa and Ariffin 2014). In the light of this, the compliance strategy preferred by the DOE enforcement officers seems to be most appropriate. Rather than sanctioning a breach of legislation, a compliance strategy's conception of enforcement focuses on the achievement of the general aims of the legislation. While the EQA creates criminal offences for prosecution, its objective is not just about prosecuting polluters, but also determining preventive measures to avoid pollution and highlighting specific needs for the regulated parties (Mustafa and Ariffin 2014). Subsequently, the DOE enforcement of the EQA cannot focus on prosecution or investigation of pollution incidences per se but must also ensure improper management of hazardous waste can be prevented and the regulated parties are informed about requirements that they need to fulfill. It was argued that compliance strategy is useful in encouraging and facilitating those willing to comply with the law. However, the strategy may be ineffective to be applied to those who are reluctant to observe the law. Furthermore, if the Authority let some lawbreakers to go unpunished, with hope they will comply later after giving some warning, it may discourage improved regulatory performance among good regulated parties due to potential competitive disadvantage that the latter may need to bear (Gunningham 2011). Therefore, in enforcing the laws, the DOE cannot apply 'one size fits all' strategy. The agency needs to consider each regulated parties' different motivations in

infringement and their previous compliance history. This may explain the discovery of the study that environmental officers in Klang Selatan also showed willingness to opt for Responsive regulation strategy when necessary. The strategy responds to different motivations and factors that influence compliant and noncompliant behaviour by regulated premises by providing enforcement officers with a range of diverse enforcement strategies to choose from (Parker 2006). However, Responsive enforcement requires consistency in enforcement officers' responses to various similar breaches done by different premises to avoid being labelled as bias and inconsistent. In the wake of wide discretion and different personal value that DOE officers possess, ensuring such consistency may be difficult. Therefore, if DOE wants to adopt this strategy, it is necessary for DOE to issue detail and clear guides for its officers on what kind of enforcement actions to take for various noncompliant under different circumstances. This can help promote better consistency and give more confident to the enforcement officers in making decision. Since January 2008 until March 2015, only 1.02 percent (n=46) of offences prosecuted under the EQA (n=4524) were for offences involved violations of scheduled wastes control prohibition under s34B of the legislation (DOE 2015). According to Thornton et al. (2005), low percentage of prosecution against violators is common for most regulatory programs in many countries as regulators deal with most detected violations through informal measures or mild administrative sanctions. With regard to prosecution of offences under the EQSWR, there was no record or reported cases for the same period that were publicly available. However, based on inspections conducted on 40 categories of industrial premises, the DOE reported 99 percent compliance with EQSWR in 2012 (DOE 2014). In the following year, the lowest recorded compliance rate by industries was 97 percent with 19 categories of industries that were subjected to EQSWR achieved 100 percent compliance (DOE 2014). The low number of prosecution on scheduled waste offences under the EQA and the high rate of compliance to EQSWR may indicate two things. On the one hand, they may suggest that the compliance strategy in enforcement is effective in ensuring the industries compliance with the legal requirements and that the authority prefer to use prosecution as last resort only. On the other hand, some may see them as manifestation of DOE 'selectiveness' in doing inspections and monitoring due to limited manpower, and thus, they may not represent a general trend in compliance by the whole industries to scheduled wastes regulations in Malaysia. For example, DOE enforcement officers conducted 250 inspections on all the 73 licensed raw natural rubber factories in 2013 with high priority given to factories with low compliance record previously (DOE 2014). This makes the average inspection done for each of the prescribed factories for the whole that year was three times only.

5. Conclusion

While many of industrializing developing countries had enacted legislation to address hazardous waste issues since the 1980s (Kahn et al. 2009), they still struggle with the enforcement and ensuring compliance of the law. The study found that the approach of the DOE (in Klang Selatan) is, at least in part, oriented to compliance strategy in enforcing the hazardous waste

regulation. The study also highlighted that the DOE suffers from the lack of institutional capacity especially due to the lack of resources including manpower and facing various constraints when conducting on site enforcement activities. In moving towards Malaysia's vision to become a developed country by year 2020, the country's decision makers must ensure that we are doing this according to a sustainable development path. Malaysia should manifest higher priority to the enforcement aspect of environmental protection. To achieve this, there is no serious need to reform the existing manner in which the DOE implements and enforces environmental requirements. However, more attention to understand how enforcement is done and higher priority to fulfill the needs of our environmental officers are required so that they can do their tasks more effectively.

In order to ensure compliance, enforcement officers possess considerable discretion, depending on their tendency, to choose from different enforcement measures ranging from less formal like advice to more formal and strict ones like compound or court action. A further research into whether the differences in approaches between these officers may result in different pattern of compliance by the regulated parties will be interesting.

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