

# The Benefits of Implementing Environmental Initiatives: *Experiences from Malaysian SMEs*

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Abstract: To address the lack of information on the practices of environmental improvements tailored to SMEs' needs particularly in Malaysia; this study shall first explore the availability of environmental friendly activities practices by SMEs in Malaysia. Then the study will proceed further to investigate what the SMEs have benefited, if any, from practicing environmental friendly activities. This study is exploratory in nature applying qualitative approach where fourteen (14) Malaysian SMEs were interviewed to identify the environmental initiatives practiced by them and the benefits they experienced from such practices. These SMEs managed to engage in some environmental initiatives that had improved their environmental performances. Most of the SMEs are ISO 14001 certified companies which put in place proper environmental management system (EMS). However, those without the ISO 14001 certification managed to also practice simple environmental initiatives yet beneficial to their businesses as well. Findings of this research could attract other SMEs to also involve in environmental friendly practices and equally benefited from such practices.

## 1 INTRODUCTION

Individually, SME may seem to have little impact on the environment but their "collective footprint" should be considered to be significant (Gunningham 2002, Redmond et al, 2008). It is believed that SMEs caused up to 70% of the total global pollution (Hillary 2004). SMEs also said to be responsible for 70% to 98% of the world manufacturing pollution (Hussey & Eagan 2007).

Unfortunately, SMEs are seems to be reluctant to participate. Some SMEs think that environmental initiatives will reduce company's profit (Garay & Font 2012) since they are unaware of many financially attractive opportunities attached to environmental improvement (Gunningham 2002). To address the lack of information on the practices of environmental improvements tailored to SMEs' needs this study shall first explore the availability of environmental friendly activities practices by SMEs in Malaysia. Then the study will proceed to investigate what the SMEs have benefited, if any, from practising environmental friendly activities. Having to know Malaysian SMEs' involvement in

environmental initiatives and the possible benefits experienced would positively encourage other SMEs to follow their lead and enhance further the concept of sustainable development.

## 2 LITERATURE REVIEW

### 2.1 SMEs and Environment

Overall, SMEs constitute more than 90% of businesses worldwide (Aras & Crowther 2009, Kusyk & Lozano 2007). Undeniable, SMEs play a very important role in the economic growth worldwide (Singh et al. 2008). In Malaysia, over 97% of the total business establishments consisted of SMEs that provide jobs for more than 5.6 million workers equivalent to 56% of Malaysian total employment. Unfortunately, the mushrooming growth of SMEs, seem to create serious environmental issues along the way. In fact, 70% to 98% of the world manufacturing pollution was produced by SMEs.

## 2.2 Environmental Impacts and Environmental Initiatives

SME's individual environmental impacts might be small but given the massive numbers of SMEs nationwide their cumulative impacts would be highly significant (Fox 2005). Moreover, with limited resources, lacks of manpower and expertise have led to lower compliance rates with environmental regulations that contribute to greater environmental impacts by SMEs further. Some SMEs are ignorance and were not aware of their environmental impacts (Seidel et al. 2008) and environmental issues are not considered to be significant (Condon 2004).

Though, Baba's (2004) also identified that the companies did find ways to minimise their daily environmental problems by practicing environmental management elements. Unfortunately, SMEs involvement in environmental initiatives that could minimize their environmental impacts was not widely spread. Seidel (2008) mentioned that there are SMEs that hardly believed that sustainability will benefit their companies. Conversely, Pimenova & Vorst (2004) identified that 80% of the SMEs that engaged in environmental initiatives would experience improved corporate image, 27% had better competitiveness and 20% enjoyed financial benefits. Meanwhile Peter & Turner (2012) identified among the benefit from improving environmental performance are better image among customers, cost reductions, increased efficiency, cleaner working environment, waste minimisation and helps the company sell products.

## 3 METHODS

This study applied qualitative approach to identify knowledgeable and experienced SMEs with environmental initiatives and environmental reporting in practice. Letters were sent to 1,340 SMEs listed in the Federation of Malaysian Manufacturers (FMM) directory and 75 (5.59%) SMEs returned the surveys and it was considered to be acceptable because there were some variations and similarities in term of states and industries. Most of the respondents had provided necessary information to move on further to the rich data collection process. From a sample of 75 surveys, non-probability purposive sampling and theoretical sampling was used to identify the SMEs that could be considered to have experiences in environmental practices for further interviews. The SMEs were contacted and 14 SMEs agreed to participate. The data collection process of

this study includes (1) interviews, (2) observations and (3) content analysis of documents to identify the environmental initiatives practiced by them and the benefits they experienced from such practices.

All the interviews, except for one, were audio-recorded with permission of the participants. Audio-recording was considered to be beneficial for the interviews processes because researcher can focus on conducting the interview smoothly as well as discussing and probing issues brought about at that time and not being disrupted by details note taking process (Hoda et al. 2012).

The audio-recorded interviews were transcribed *verb-a-tim* in the original language of conduct within two weeks of the interviews sessions. To conserve the interviewees true meaning and expression as well as to avoid possibility of the researcher turning the originality of the interviews into own words which might be influenced by the overall process and lead to biasness, the *Bahasa Malaysia* or mix of both languages were not translated prior to the analysis process. Instead, the original transcriptions either in English, *Bahasa Malaysia* or mix of both were used during the content analysis process.

## 4 RESULTS AND DISCUSSION

This study involved SMEs located in almost all the states in East Malaysia.

Table 1: SMEs-Summary of participants profiles.

3	SIZE	ISO 14001	INDUSTRY
SME1:M1	Medium	√	Basic metal
SME2:P1M2	Small	√	Rubber and plastics
SME3:F1	Small	√	Food and beverage
SME4:N1	Medium	√	Other non-metallic mineral products
SME5:C1	Small	√	Chemicals
SME6:M3E1	Small	√	Basic metal
SME7:E2	Small	√	Electrical Machinery and apparatus

SME8:C2	Small	√	Chemicals
SME9:F2	Medium	X	Food and beverage
SME10:P2	Medium	X	Rubber and plastics
SME11:N2	Medium	X	Wood
SME12:M4	Small	√	Basic metal
SME13:E3	Small	√	Electrical Machinery and apparatus
SME14:N3	Medium	√	Other non-metallic mineral products

#### 4.1 Environmental Initiatives by the SMEs

##### 4.1.1 Complying to Rules and Regulations

All manufacturing premises have to comply with the set of environmental rules and regulations stated in Environmental Quality Act 1974 (Act 127) and Subsidiaries Legislation. The company will be compounded if it commits any offense as mentioned under the Act. As such, several environmental initiatives practiced by the SMEs such as proper handling of scheduled waste, installation of wasted water treatment facilities and monitoring gas emission are considered as act of complying with rules and regulations as imposed by the Environmental Quality Act 1974.

##### 4.1.2 Obtaining ISO 14001 Certifications

Eleven (11) of the SMEs managed to obtain ISO 14001 certifications. Obtaining ISO 14001's certification is considered a significant environmental initiative because it is not mandatorily required by the environmental rules and regulations. Furthermore a company cannot simply state that it possess ISO certification without any supporting documentations and approval from the International Organization for Standardizations. Despite having limited financial resources, manpower, lack of time and other unspecified limitations as compared to its larger counterpart, the SMEs had made financial commitment to obtain as well as to maintain this international accreditation.

#### 4.1.3 Recycle and Reuse

Recycle and reuse are among the environmental friendly activities implemented by most of the participants' SMEs. However, the items recycled and reused and the way it was done are different between one SME to another. Among the activities done by the SMEs are given in Table 2 below.

Table 2: The activities by the SMEs.

SME	Activities
SME2: P1M2	[1] Cartridges were kept in one place for suppliers to collect them backs (Observation)
	[2] Information provided during the interview session was written at the back of used papers (recycle papers). (Observation)
	[3]General waste such as papers, carton boxes and cans were either sold or given away to contractors or collectors. (Interview)
SME3: F1	[1] General wastes such as aluminium, papers and carton boxes were sold. Aluminium as the defected and normal loss of the raw materials and it contributed to a significant amount of income. (Interview)
SME4: N1	[1] Reuse the treated oil which was previously being its scheduled waste. (Interview)
	[2] Premix which arises from the quarry operation was sold for other usages or freely provided to the local community, schools, police stations, mosques as part of the co's CSR.
SME6: M3E1	[1] Hire contractors to do the segregation of papers, newspaper, magazines to be recycled. (Interview)
SME9: F2	[1] Recycling bins are provided for general waste in the factory areas including at the entrance of the company (Observation)
	[1] Formed a recycle team / group (Interview)
	[2] Provide containers to administrative staff to dispose their papers which will be

SME 10 :P2	segregated later by the recycle team (Interview)
	[3] Collect and use rain water when it is necessary (Interview and Observation)
	[4] Reuse the raw material by reprocessing and add it back into the production (Interview)
SME 12:M4	[1] Recycle paper (interview)
	[2] Each staff is provided with garbage bin. They need to recycle their owned waste and the co can monitor paper usage. (Interview)
SME 13:E3	[1] Reuse papers and carton boxes (Interview)
	[2] Recycle raw material (Interview)

#### 4.1.4 Waste Management

Other than scheduled waste, the SMEs also produce other wastes commonly known as general waste such as papers, carton boxes, plastics and cans. The SMEs also produced waste from the production processes mostly related to its raw materials or defected items. Apart from recycling and reusing these wastes where necessary, the SMEs are also aware of the need for them to engage in activities that would manage their wastes efficiently. Waste management could reduce the amount of waste generated from operational procedure which could also lead to cost saving.

In managing its waste, SME11:N2 managed to increase the recovery from saw timber to log from 50% to 80% when the wastage is re-use to produce other commercial products. Meanwhile, SME5:C1 changed its existing fax machine to the new one that can be used efficiently to control paper consumption. They also reviewed back the company’s existing practices that have been followed year after year and noticed elements of redundancy. The used of printing paper could be reduced with the existence of computers and similar equipment.

When SME10:P2 and SME12:M4 provided containers or garbage bins for their employees, it indirectly projected an indication that employees’ effectiveness in managing their waste would be monitored.

#### 4.1.5 Reducing Energy Consumption

Another reducing effort practiced by the SMEs that would give impact on the environment is reducing the energy consumption which mainly focused on

minimizing the use of electricity. The opportunity to interview the manager of SME5:C1 who happened to be one of the owners of the company provided valuable information on the environmental initiatives practiced by the company. To cut the consumption of electricity, SME5:C1 have changed their old air conditioners into inverter technology that saves energy usage. Being aware of its financial limitations, SME5:C1 changed the air conditioners one by one gradually. Even though inverter technology is slightly expensive than the conventional system, SME5:C1 experienced cost saving sometimes later. As owner-manager he managed to impose ‘fine-system’ for irresponsible staffs who forgot to switch off the air conditioner. To ensure the success of the system, owners-managers including him have to pay fine as well if they too forgot to switch off the air conditioners. During the interview session the researcher observed the existence of small stickers near the switches, reminding users to switch off either air conditioners or lights.

SME8:C2 also focused on air conditioners to reduce its energy consumption. Among the company’s strategies are to switch off air conditioners in the production area during lunch time. SME8:C2 took the opportunity to follow the government suggestion to set the temperature of the air conditioners at the minimum 24° Celsius. It was observed during the factory visit that the company had installed indicator lights for air conditioners and ovens in the production area to notify the usage of those equipment either they are switched on or off. So, the responsibility falls on everybody that used the facilities.

Likewise, SME10:P2 practiced reduction of energy consumption at all levels. The company uses transparent roofs in the factory from 8.00 a.m. to 3.00p.m to reduce electricity usage. The existence of this initiative was observed during the factory visit. The workers are also reminded to switch off the machines accordingly and the air conditioners will be switched off during raining days and the windows will be opened instead.

#### 4.1.6 Trees Planting

Trees planting refers to all the related activities involving planting trees and plants to maintain the green nature of the earth. Upon entering the administration department of SME2:P1M2, plants in small pots are located on most of the staffs’ office tables while the bigger plants are located at the corners of the office areas. Trees and plants are also planted around the factory area. The researcher was told that even the owner of the company himself came over the factory site during weekends to plant trees in the early years of operations.

As for SME4:N1, in which the operation is mostly outdoor and associated with loud noise, the company planted trees to absorb the sound as well as to reduce the vibration effects from the explosion. Trees are planted surrounding the quarry area. Meanwhile, SME13:E3 also promotes employees' involvement in planting trees and plants. However, for SME11:N2 green efforts related to planting and cutting off trees are considered a very crucial issue since it operates in logging industry. Unlike other SMEs, SME11:N2's operation requires the company to cut trees rather than planting them. In order to sustain in the industry, the company could not avoid cutting down trees. As such the focus is to minimise the environmental impacts since it is impossible to achieve zero impact in timber logging industry.

#### 4.1.7 Develop Employees' Environmental Awareness

Some of the SMEs also took the initiatives to create environmental awareness among their employees. SME6: M3E1 organised yearly campaign internally where the campaign lasts about two months each time. SME6:M3E1 also require their employees to take turn to recite the company's Environmental Policy in the company's morning assemblies. Likewise, SME8:C2 provided proper training programs for its employees along with frequent meetings and reminders to ensure that no energy is wasted. Moreover, SME8:C2 encourages its employees to voice suggestions on production, welfare as well as environment by providing suggestion box.

On the other hand, SME10:P2 prefers to constantly create environmental awareness using non-verbal communications. Posters, stickers and memos are posted and pasted around their work areas as reminders to ensure environmental friendly practices. The company pasted 'saving resources' stickers to create awareness almost anywhere including the company's washrooms so that the workers get used to those practices. As for water consumption, stickers are pasted near the taps. The stickers '*Tutup Bila Tidak Digunakan*' (Switch off When Not in Used) were pasted near the switches in the effort to save electricity. Meanwhile, SME14:N3 also applied non-verbal communication but the prominence is more on pictures rather than words. Pictures of people starving were pasted at the cafeteria to remind its workers not to waste foods.

#### 4.1.8 Influencing Customers and Suppliers

Apart from engaging in environmental initiatives for the company, several SMEs also make some efforts to assist as well as guide their suppliers to get

involved in environmental friendly initiatives. SME5:C1 encouraged its customers to have a big consumption area to enable the company to send the material in bulk. Bulk purchasing has led to less deliveries causing reduction in fuel usage. SME5:C1 also assist its suppliers to increase material ordering so that photocopying of purchase order could be reduced.

Meanwhile, SME1:M1 issued the company's environmental policy to the suppliers for them to be in-line with the company's requirements. On the other hand, SME3:F1 took some action upon suppliers or contractors who act disobediently against good environmental practices. The company instructed them to follow the company's ISO requirement where necessary and if they fail or unwilling to do so, the company will resort to switch to other suppliers.

#### 4.1.9 Operations Related Activities

There are SMEs that have engaged in more environmental initiatives as compared to others because their industries are more environmental sensitive. SME4:N1 which operates as quarry have many direct environmental impacts inherent in the industry which may cause all sort of pollutions such as air and noise pollution. Due to that the company are willing to spend thousands of Ringgit to use amulet explosion that lower down the noise even though the noise lasts for a short period of time only. Furthermore, instead of using lorries which are considered to be a way much cheaper alternative, SME4:N1 decided to use conveyor belt to transport the raw material to stock pile which could minimise environmental impacts due to dust. In events where the use of lorries are still necessary, then their loads will be monitored to prevent overloading which may cause further environmental impacts.

Likewise, for SME11:N2, it is unavoidable that its logging activities are closely related to the environmental impacts. As such, to minimize the environmental impacts caused by the company's operational activities, SME11:N2 managed its logging activities systematically and in a well-planned manner. The company adopted sustainable development in managing its logging activities with 30 years cutting cycle and the trees are cut according to the quota set by the Forestry Council. Pre-felling survey was conducted prior to logging activities to identify '*had batas tebangan (HBT)*'; the cutting limit in which the diameter of the trees allowable for cutting is identified. Under sustainable development system, SME11:N2 also had a system to replant those trees systematically so that new timber will be ready after the 30 years cutting cycle.

## 4.2 Benefits of Practicing Environmental Friendly Activities

Even though implementing environmental initiatives such as obtaining ISO 14001 certification, installing waste water treatment and other environmental friendly facilities and documents involved significant amount of investment, the SMEs seem to agree that it will provide some benefits in the long run. Waste management could reduce the amount of waste generated from operational procedure which could also lead to cost saving. Therefore, cost savings is among the benefits that the SMEs had experienced when they implemented the environmental initiatives.

SME 2: *"I do not know what they will do [with the printer cartridges] Yes, we should reduce our problem. Whenever the suppliers come to service the equipment so we gave them. Otherwise, I have to pay another scheduled waste for sent to Kualiti Alam, then I have to pay money also."*

(Original Transcript: SME2: pg. 3-4/line70-73)

SME 4: *For example, for waste management. We can see the improvement as compared to before when we produced waste without control. Now the waste is reduced. For example, let say 100 tonnes for one month, if we can reduced the waste by 30 tonnes per month is good enough. Previously the 30 tonnes was wasted away but now we can use it as raw material. We maximised and used whatever raw material that we have.*

(Translated and paraphrased: SME4: pg79/line1821-1826)

SME 4: *... we can save the usage of fuel, transformed the benefits into cost saving. For a certain production target, we should target fuel usage per tonnes. We can reduced certain amount of fuel in long run. May in the next 5 years, the next 10 years,*

(Translated and paraphrased: SME4: pg79/line1853-1855)

SME 5: *"And also at one time, there have been chemical leaking. Where leak out Saturday morning when we were not working. Until morning when we came back we saw the whole warehouse was flooded with acid, all metal stuffs being corroded, our wiring all gone, so for two days we couldn't work..."*

*So, after the incident, no more talking about cost saving in term of chemicals, no more. The cost, yes the cost of packing is expensive but the cost of repaired and clean-up is more because we have to*

*change the wiring. The instruments we have to change all the instruments."*

(Original Transcript: SME5: pg. 121/line2869-2874)

Apart from having a cost savings experience, the SMEs or its employees also managed to earn some additional cash when they engaged in recycling activities.

SME 2: *Employees of the factory do recycle items such as boxes and tins to earn cash for own wellbeing, not much but at least the rubbish/garbage is not go to waste and become somebody else income.*

(Paraphrased: SME2: pg5/line109-110)

SME3 also sold their waste papers, carton boxes and earn some cash. Consequently, SME3 which produced cans drink had significant amount of aluminium waste which it classified as general waste sold for significant amount of money. Likewise, the premix waste which is derived from the untreated raw material of SME4 could also be sold. Even though the cash collected from the disposal of those waste varies in the amounts but it still provide some cash contribution either to an individual or the SME.

Additionally, SME1 mentioned that after the company obtained ISO 14001 certification the benefits were materialized when the company continues to operate in safer and less hazardous environment. SME1 also noticed that the company received more customers which led to increase in sales. SME5 also received additional credits from its customers when it obtained ISO 14001 certification. Their customers are more willing to cooperate with them when the customers knew that SME5 is ISO 14001 certified company. Most of the SMEs' customers are in favour of ISO 14001's certification as well.

The SMEs also stated that they had improved relationship with their stakeholders. They received lesser complaints from the surrounding society when they are concerned about the environment. SME4 willingness to use amulet explosion for its quarry activity had reduced the explosion effect to the environment as well as to the surrounding society. Meanwhile with ISO 14001's certification enable the SMEs to respond to complaints or environmental inspectors confidently since they knew that the company already took all the necessary precaution and it was supported by proper documents. Definitely, with ISO 14001 certification they are more confident to meet new customers and face the regulators.

## 5 CONCLUSIONS

Despite their smaller sizes with limited resources these SMEs managed to implement some environmental initiatives that had improved their environmental performances. There are several environmental initiatives practiced by the SMEs in this study which could provide guidance for other SMEs to implement it as well. Benefits of engaging in environmental initiatives discovered in this study could attract other SMEs to also involve in environmental friendly practices and equally benefited from such practices and at the same time participated in reducing global environmental impacts as well.

Accordingly there are more than 500,000 SMEs in Malaysia but the focus of this study is limited to the SMEs that are registered as member of Federation of Malaysian Manufacturers (FMM). Difficulty in obtaining a complete directory for SMEs that would include their contacts information and all other necessary details had limits the utilisation of a more representable sampling frame. However generalisation of the findings was not the focus of this study as well. Instead the richness of the information was seems to be more significant and valuable to the body of knowledge.

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