

CHAPTER 5

CONCLUSIONS & RECOMMENDATIONS FOR FUTURE WORK

5.1 Research Summary

The observation is conducted to understand the overall activities and processes involved in Izie Herb Enterprise. From this observation, the activities or processes that can contribute to the environmental problems were identified. Environmental Management audits were conducted in Izie Herb Enterprise with the primary purpose of obtaining the relevant data. The audit was conducted on waste generation, water and energy consumption and also risk assessment issues that arise. Full cooperation was obtained from the workers and top managers by providing data available to them, while some information such as waste generated, water and electricity were either measured or estimated during the audit. Opportunities for Environmental Management were identified and evaluated in this research study. Few options can be immediately implemented.

5.2 Conclusions on Research Outcomes

In general, the Enterprise was willing to be assessed for improvement, but this must be balanced with how these measures will impact the operations of their business. There is a strong belief among most of workers that it is possible to grow the economy and protect the environment at the same time. A study by Lambert and Boons (2002) report that there is a definite desire among businesses to move towards sustainability.

The audit exercise has given valuable inputs regarding the important environmental issues such as reducing the waste, energy and water conservation, their challenges, and prospects

for Environmental Management implementation. Hence in this study, and perhaps every time Environmental Management is to be introduced, highlighting simple measures that can be implemented immediately without involving any cost would be more attractive.

It is estimated that 900 kg of solid wastes are generated yearly by workers in Izie Herb Enterprise which 120 kg of them is paper and plastic based, while 780 kg of solid waste is not significant to environmental problem. There is 720 kg of waste generated by costumers for a year base on sales volume. Proper waste management including housekeeping, inventory documentation, application of the 3R's principles of reducing, reusing and recycling of materials, process design and materials substitution should be seriously looked into.

720 m³ of water is used per year in Izie Herb Enterprise. The usage is quite high but the water consumption improvement is always possible. Because of the water rate charge is low; it is frequently observed that water use is often without proper optimum proportions. Good operating practices and process change in which water is used will ensure that the consumption can be optimized.

Petrol usage in Izie Herb Enterprise is low but the electricity consumption is relatively high due to the usage of certain appliances that operates for 24 hours per day. Although the electricity consumption is quite high during day time, it is observed that there is not much electricity wastage. From the analysis of data obtained, it can be summarized that a total of 62,123.4 kWh of electricity is used per year with oven is the highest contributor in electricity usage which is 43,800 kWh and it is equal to 70.5 % of total electricity usage

Milling machine is the second highest contributor in electricity usage which is 4,800 kWh and is equal to 7.73% of total electricity usage. Overall, it is expected that Izie Herb Enterprise will save about 20% energy usage and RM 3,000 in expense if all of this research environmental option suggestion is being taken into their practice.

From the risk assessment conducted, few risk possibilities were highlighted such as health and safety problems that related to environmental issues. However, further detailed risk analysis and assessment needs to be conducted in order to identify the best prevention measures.

Despite attractive economics and significant reductions in environmental impacts, the widespread adoption of Environmental Management options still remains limited in small business. This study has addressed challenges for the adoption of Environmental Management. The barriers identified could be sorted into four key areas of concern:

- **Lack of available resources.**

These include the lack of financial resources (Thompson, 2002), time (Thompson, 2002; Vernon, 2003), human resources (Thompson, 2002; Hillary, 2004) and technical knowledge.

- **Information barriers.**

These include the language barriers (Tilley, 1999; Thompson, 2002), lack of awareness of their business environmental impacts (Vernon, 2003), low awareness of available assistance (Smith and Kemp, 1998), low environmental literacy (Tilley, 1999) and lack of awareness of benefits (Thompson, 2002).

- **Internal attitudes.**

Internal attitudes including the inconsistent top management support (Thompson, 2002; Hillary, 2004), resistance to change within company culture (Thompson, 2002), an unfavorable company culture and negative corporate attitudes towards environmental initiatives (Thompson, 2002; Hillary, 2004).

- **Perceptions.**

These wrong perceptions involving the perceived cost (Thompson, 2002), disbelief of the benefits of environmental initiatives (Rutherford et al., 2000; Thompson, 2002), high perceived effort required (Hillary, 2004) and assume that business and environmental impacts are separate (Vernon, 2003).

5.3 Recommendations for Further Research

Based on evaluated Environmental Management options, it is strongly recommended that the Izie Herb Enterprise could seriously consider the implementation possibilities of the options to entire processes and activities, in order to reducing wastes generated, minimize water and energy consumptions, and also eliminates risk possibilities. Further, a proper set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency can be introduced such as EMS, ISO and EMAS.

The awareness of the Environmental Management benefits is needed to reinforce the motivators' drivers for their implementation. Education and training will be increasingly become more important as the Izie Herb Enterprise realize the potential advantages of resource conservation and cost saving in the business.

Further detailed studies can be done on the impacts, barriers, benefits and key drivers of Environmental Management on SMEs. The government should provide SMEs with technical and financial resources to help them implement the protection strategies. The establishment of “one-stop” web portal is important for SMEs to access information about environmental issues, environmental programs and services available.