

**ENVIRONMENTAL MANAGEMENT FOR SMALL BUSINESS: A
CASE STUDY AT IZIE HERB ENTERPRISE**

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DECLARATION OF ACADEMIC WORK

I, **Mohd Rafiziee bin Abdul Razak** registration No. **KGJ 070013** hereby declare that this dissertation entitled: is my own academic work with the exception of citations which **ENVIRONMENTAL MANAGEMENT FOR SMALL BUSINESS: A CASE STUDY AT IZIE HERB ENTERPRISE** has been acknowledged.

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ABSTRACT

Environmental Management approaches can be used to minimize waste generation, reduce risk and at same time increase the business profit. In this work, Environmental Management options are adopted for reducing solid waste, water usage, energy consumptions and minimize risk. For this purpose, an Environmental Management audit has been conducted at Izie Herb Enterprise, a Small and Medium Enterprise. In general, the Environmental Management practises at Izie Herb Enterprise were classified based on four major elements which are Good Operating Practices, Process Changes, Substitution of Materials and Source Reduction. Subsequently, the options practiced were evaluated in terms of their benefits and barriers in prioritizing the options for possible implementation on waste, energy, water and risk reduction. Despite attractive economics and significant reductions in environmental impacts, the widespread adoption of Environmental Management options at Izie Herb Enterprise still remains limited because of these four key of concern; lack of available resources, information barriers, internal attitudes and wrong perceptions.

From the analysis of data obtained, it can be summarized that 900 kg of solid wastes were generated and 720 m³ of water is used yearly at Izie Herb Enterprise. A total of 62,123.4 kWh of electricity is used per year with oven is the highest contributor in electricity usage which accounts 43,800 kWh equals 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.

ABSTRAK

Pendekatan Pengurusan Alam Sekitar boleh digunakan untuk meminimumkan penghasilan sisa, mengurangkan risiko bahaya dan pada masa yang sama memberi keuntungan perniagaan. Dalam kajian ini, opsyen-opsyen Pengurusan Alam Sekitar dihasilkan untuk mengurangkan sisa pepejal, penggunaan air, tenaga dan juga risiko bahaya. Bagi tujuan ini, audit Pengurusan Alam Sekitar telah dijalankan di Izie Herb Enterprise, sebuah Perusahaan Kecil dan Sederhana. Data yang diperolehi kemudiannya digunakan untuk menghasilkan sebanyak mungkin opsyen-opsyen sesuai. Secara umumnya, penjanaan Pengurusan Alam Sekitar dikelaskan kepada empat elemen berikut iaitu Amalan Operasi yang Baik, Perubahan Proses, Penukaran Bahan-Bahan dan Pengurangan Sumber. Seterusnya, opsyen-opsyen tersebut dinilai dari segi faedah dan halangan untuk mengetahui keutamaan pelaksanaan keatas pengurangan sisa, tenaga, air dan risiko. Meskipun terdapat tarikan ekonomi dan pengurangan kesan alam sekitar, penerimaan opsyen Pengurusan Alam Sekitar masih terhad di Izie Herb Enterprise kerana kekurangan sumber, halangan penyampaian maklumat, sikap dan persepsi yang salah.

Berdasarkan kepada analisa data yang diperolehi, kesimpulan dapat dibuat bahawa 900 kg sisa pepejal dihasilkan dan 720 m³ air digunakan setahun oleh pekerja Izie Herb Enterprise. Sejumlah 62,123.4 kWh tenaga elektrik digunakan setahun dimana oven merupakan penyumbang tertinggi iaitu 43,800 kWh bersamaan 70.5% daripada jumlah keseluruhan penggunaan. Mesin pengisar pula adalah penyumbang kedua tertinggi penggunaan tenaga elektrik iaitu 4,800 kWh bersamaan dengan 7.73% daripada jumlah keseluruhan.

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TABLE OF CONTENTS

	Page
ABSTRACT	iii
ABSTRAK	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF APPENDICES	xii
ABBREVIATIONS	xiii
CHAPTER 1 INTRODUCTION	1
1.1 Background of Environmental Management for Small Business	1
1.2 Business Activities and Environmental Management	2
1.3 Definition of Small and Medium Enterprises (SMEs)	3
1.4 Research Background	5
1.5 Issues in Izie Herb Enterprise	6
1.6 Objectives	7
1.7 Outline of Research Approach	7
CHAPTER 2 LITERATURE REVIEW	9
2.1 Small Business and Environment Impact	9
2.2 Environmental Management Benefits	11
2.3 Environmental Management Issues and Barriers	13

2.4	Environmental Management Related Standard Framework	17
2.5	Environmental Management Related Concepts	18
2.5.1	Environmental Management System (EMS)	18
2.5.2	British Standard (BS) 7750	19
2.5.3	International Organization for Standardization (ISO)	19
2.5.4	Eco-Management and Audit Scheme (EMAS)	20
2.5.5	Sustainable Development	21
2.5.6	Life Cycle Analysis (LCA)	21
2.6	Summary	22
 CHAPTER 3 METHODOLOGY		23
3.1	Observation on Processes and Activities	24
3.2	Audit Methodology	24
3.3	Audit Finding Analytical Method	25
3.4	Environmental Management Options Generation	25
3.5	Evaluation of Environmental Management Options	25
 CHAPTER 4 RESULTS AND DISCUSSION		26
4.1	Activities and Processes in Izie Herb Enterprise	26
4.1.1	Collection of Raw Materials	26
4.1.2	Production of Herbal Extracts	26
4.1.3	Promotion and Marketing	30
4.1.4	Delivering the final products	31
4.2	Audit Finding (Qualitative)	32

4.3	Audit Finding (Quantitative)	34
4.3.1	Waste Generated	35
4.3.2	Water Consumption	36
4.3.3	Energy Consumption	36
4.3.4	Risk Assessment	42
4.4	Environmental Management Options	44
4.4.1	Waste Generated	45
4.4.1.1	Good Operating Practices	45
4.4.1.2	Process Changes	46
4.4.1.3	Substitution of Materials	47
4.4.1.4	Source Reduction	47
4.4.2	Water Consumption	48
4.4.2.1	Good Operating Practices	48
4.4.2.2	Process Changes	49
4.4.3	Energy Consumption	50
4.4.3.1	Good Operating Practices	50
4.4.3.2	Substitution of Equipments	53
4.4.4	Risk Assessment	54
4.5	Environmental Management Options Evaluation	55
4.5.1	Waste Generated	55
4.5.2	Water Consumption	56
4.5.3	Electricity Consumption	57
4.5.4	Risk Assessment	58

CHAPTER 5 CONCLUSIONS & RECOMMENDATIONS

FOR FUTURE WORK 59

5.1 Research Summary 59

5.2 Conclusions on Research Outcomes 59

5.3 Recommendations for Further Research 62

REFERENCES 64

APPENDICES 69

LIST OF TABLES

	Page
Table 1.1: Malaysian SMEs based on Number of Full-Time Employees	4
Table 1.2: Malaysian SMEs based on Annual Sales Turnover	4
Table 4.1: Activities in Izie Herb Enterprise	32
Table 4.2: Observations from Audit in Izie Herb Enterprise	33
Table 4.3: Summary of Audit Findings in the Izie Herb Enterprise	35
Table 4.4: Waste generated in Izie Herb Enterprise for a year	35
Table 4.5: Estimation waste generated by costumers for a year	36
Table 4.6: Water consumption in Izie Herb Enterprise for a year	36
Table 4.7: Price of water usage in Izie Herb Enterprise for a year	36
Table 4.8: Petrol RON95 usage in Izie Herb Enterprise	37
Table 4.9: Summary of typical appliances available in Izie Herb Enterprise	38
Table 4.10: Appliances with power rating	38
Table 4.11: Electricity consumption in Izie Herb Enterprise for a year	39
Table 4.12: Estimation of electricity usage Izie Herb Enterprise for a year	41
Table 4.13: Environmental management options generated to reduce risk	54
Table 4.14: Environmental Management Options Evaluation on Waste Generated in Izie Herb Enterprise	55
Table 4.15: Environmental Management Options Evaluation on Water Consumption in Izie Herb Enterprise	56
Table 4.16: Environmental Management Options Evaluation on Electricity Consumption in Izie Herb Enterprise	57
Table 4.17: Environmental Management Options Evaluation on Risk assessment in Izie Herb Enterprise	58

LIST OF FIGURES

	Page
Figure 3: General Research Methodology	23
Figure 4.1: Garbling Processing Steps	27
Figure 4.2: Artificial Dryer	28
Figure 4.3: Milling Machine	29
Figure 4.4: Graph of electricity consumption in Izie Herb Enterprise per year	40
Figure 4.5: Graph of electricity percentage consumption in Izie Herb Enterprise per year	41
Figure 4.6: Spillage of powdered herbals	42
Figure 4.7: Spillage of water below the rinse area	43
Figure 4.8: Improper size of glove and wearing ring	43
Figure 4.9: Milk drop on floor	44

LIST OF APPENDICES

		Page
Appendix A	Borang Penghasilan Sisa	70
Appendix B	Audit Checklist	71
Appendix C	Izie Herb Enterprise Floor Plan	73
Appendix D	Other Photos in Izie Herb Enterprise	74

ABBREVIATIONS

SMEs	Small and Medium Enterprises
EMS	Environmental Management System
ICT	Information and Communication Technology
RM	Ringgit Malaysia
SKMM	Companies Commission of Malaysia
GDP	Gross Domestic Product
ISO	International Organization for Standardization
EMAS	Eco-Management and Audit Scheme
Pan-EU	Whole European Union
BS	British Standard
PDCA	Plan, Do, Check, Act
US EPA	United States Environmental Protection Agency
LCA	Life Cycle Analysis
GMP	Good Manufacturing Process
NPCB	National Pharmaceutical Control Bureau
SIRIM	Standards and Industrial Research Institute of Malaysia
MARA	Majlis Amanah Rakyat
KKLIU	Kementerian Kesihatan Lembaga Iklan Ubat
MOH	Ministry of Health
SMS	Short messaging service
RON95	Research Octane Number 1995
CRT	Cathode Ray Tubes
LCD	Liquid Crystal Display
PPE	Personal Protection Equipment
PDF	Portable Document Format (Adobe Acrobat)
E-mail	Electronic Mail
CFLs	Compact Fluorescent Light Bulbs
°C	Degree Celsius
%	Percent
Kg	Kilogram

m ³	Cubic Meter
L	Liter
W	Watt
kWh	Kilowatt hour
ft	Feet
e.g.	For example
i.e.	That is