

**ENHANCING THE SOLID WASTE MANAGEMENT
PRACTICES OF EXPORT PROCESSING ZONES
OF SRI LANKA**

Omaththage Nimali Rupika Pathmaperuma Abhayapala

(189587A)

Dissertation submitted for partial fulfilment of the requirement for the
Degree of Master of Science in Project Management

Department of Building Economics
University of Moratuwa

Sri Lanka

September 2023

DECLARATION

I declare that this is my own work, and this thesis / dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

Also, I hereby grant to University of Moratuwa the non-exclusive right to reproduce and distribute my thesis/dissertation, in whole or in part in print, electronic or other medium. I retain the right to use this content in whole or part in future works (such as articles or books).

.....
O.N.R.P. Abhayapala

.....
Date

The above candidate has carried out research for a Master's Dissertation under my supervision

.....
Mrs. Piumi Dissanayake
Dissertation Supervisor

.....
Date

ABSTRACT

ENHANCING THE SOLID WASTE MANAGEMENT PRACTICES OF EXPORT PROCESSING ZONES OF SRI LANKA

Solid waste management is a critical concern in the modern world due to the compilation of solid waste, which cannot be easily recycled or managed. Furthermore, this issue has been continuously affecting most of the countries which are having Export Processing Zones (EPZ). Similarly, EPZs in Sri Lanka zones are making a considerable impact on the incensement of solid waste. Due to the unavailability of the proper solid waste management system, social economic and environmental issues have aroused. Hence this research aimed to develop strategies for enhancing solid waste management practices in Export Processing Zones in Sri Lanka on the identification of better solid waste management practices in EPZs Sri Lanka.

A qualitative research method was followed to achieve the aim of the study According to the interview guideline, 12 interviewees participated representing 3 case study EPZs in Sri Lanka. The primary data was collected through interviews the evaluated using manual content analysis.

The research finds current solid waste management practises in the global context have different varieties however in Sri Lankan contracts are limited to segregation open dumping end minimum level of recycling and reusing process. Furthermore, in most cases, open dumping is used for hazardous solid waste generated in export processing zones. In the Sri Lankan context incineration is widely used as a solid waste management process at its primary level. However, financial capabilities limited motivation, unavailability of national policy, political influence, and limited awareness of the public and management cause barriers to the solid waste management process. The research suggested that finding the stakeholders and providing specific responsibilities with a focus on producing solid waste generation, developing national policy, continuous monitoring, providing financial incentives, generating independent management authority, and increasing public awareness through different campaigns will support the solid waste management process in an improved version.

Even though solid waste management is limited to export processing zones, it is essential to concern this aspect in a wide view to ensure the social economy and Environmental Protection of the country. The research findings on solid waste management in EPZs concerning successful methods used in a global context propose guidelines for better practices. Furthermore, the development of the legal systems and long-term policies are key findings of the research to enhance the socio-environmental and economic best practices in Sri Lanka.

Keywords: *Solid waste management, Export processing zones, Sri Lanka, Incineration, 3R concept*

DEDICATION

TO MY LOVING HUSBAND AND MY TWO KIDS

ACKNOWLEDGEMENT

I express sincere gratitude to my dissertation supervisor Mrs. Piumi Dissanayake, Senior lecturer of the Department of Building Economics of University of Moratuwa for her expertise, guidance, valuable instruction and encouragement given to me in order to make this dissertation a reality. Without her this report would never have been materialized.

Further, my sincere gratitude is rendered to Prof. (Mrs.) Anuradha Waidyasekara, Head of the Department of Building Economics, in order to render the valuable guidance from the commencement of the postgraduate studies.

More to then, I must thankful to Ch.QS Vijitha Disarathna, Former Programme Director of the PG Dip / MSc. in Project Management programme and Ch.QS Indunil Senevirathne, Programme Director of PG Dip / MSc. in Project Management programme for their support in resolving issues during the postgraduate studentship.

Also, I would like to thank all the officials of Board of Investment for providing me with all the necessary material and information in making this dissertation successfully:

Finally, I wish to express my heart felt gratitude to my husband, my son & little daughter for encouragement and fullest support to complete the dissertation.

Thank you

O N R P Abhayapala

TABLE OF CONTENTS

DECLARATION	i
ABSTRACT	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF ABBREVIATIONS	xi
CHAPTER ONE	12
INTRODUCTION	12
1.1 Background.....	12
1.2 Problem Statement	14
1.3 Aim and Objectives.....	15
1.4 Research Methodology	16
1.5 Scope and limitation	16
1.6 Chapter Breakdown	17
1.7 Summary	17
CHAPTER TWO	19
LITERATURE REVIEW	19
2.1 Chapter introduction	19
2.2 Introduction of Export Processing Zone and its importance to the Economy	19
2.3 Introduction to Solid Waste	23
2.4 Concept of Solid waste management	24

2.4.1	Elements of solid waste management	26
2.4.2	Generating of solid waste.....	27
2.4.3	On-site handling & storage of solid waste	27
2.4.4	Collection of solid waste.....	27
2.4.5	Transfer and transportation of solid waste.....	28
2.4.6	Material and resource recovery.....	28
2.4.7	Disposal of solid waste	28
2.5	Solid waste generation in export processing zones.....	28
2.6	Impact of solid waste to the Export Processing Zones.	29
2.7	Solid Waste Management in Export Processing Zones	30
2.8	Current practices of solid waste management in Export Processing Zones ..	31
2.9	Issues of current solid waste management practices of Export Processing Zones in Sri Lanka	32
2.10	Strategies to mitigate the issues of solid waste management of Export Processing Zones in Sri Lanka.....	34
2.11	Need for proper solid waste management of Export Processing Zones in Sri Lanka.....	35
2.12	Chapter Summary	38
CHAPTER THREE		39
RESEARCH METHODOLOGY		39
3.1	Introduction.....	39
3.2	Research Process.....	39
3.2.1	Background study	40
3.2.2	Literature Review.....	40
3.2.3	Research problem.....	41
3.2.4	Research Design.....	41

3.2.4.1	Research approach.....	41
3.2.4.2	Research Strategy	42
3.2.4.3	Research technique	43
3.3	An ethical approach to the research	46
3.4	Chapter Summary	46
CHAPTER FOUR.....		47
DATA ANALYSIS AND FINDINGS.....		47
4.1	Introduction to the Chapter	47
4.2	Introduction to selected Case studies	47
4.2.1	Case A.....	47
4.2.2	Case B	48
4.2.3	Case C	48
4.3	Interviewee profile	48
4.4	Cross case analysis.....	50
4.5	Current solid waste management practices in Export Processing Zones in Sri Lanka.....	50
4.5.1	Source of solid waste generation in Export Processing Zones in Sri Lanka.....	50
4.5.2	Solid waste management practices in Sri Lankan Export Processing Zones.....	52
4.5.3	Issues of current solid waste management practices of Sri Lankan EPZs.....	55
4.6	Strategies for mitigating the issues of current solid waste management practices of Export Processing Zone in Sri Lanka.....	58
4.7	Discussion	61
4.8	Chapter Summary	63

CHAPTER FIVE	64
CONCLUSIONS AND RECOMMENDATIONS.....	64
5.1 Chapter introduction	64
5.2 Conclusions.....	64
5.3 Recommendations.....	67
5.3.1 Recommendations for Export Processing Zones	67
5.3.2 Recommendations for Legal and government authority.....	67
5.3.3 Recommendations for Public awareness	68
5.4 Limitations of the study	68
5.5 Further research area.....	68
REFERENCES.....	70

LIST OF TABLES

Table 2.1: Description of the export processing zones	21
Table 2.2: Solid waste management current practises, issues and mitigation methods of EPZs in Sri Lanka.	37
Table 3.1: Profile of selected cases	43
Table 4.1: Interviewees profile	49
Table 4.2: Source of solid waste generation in Sri Lankan EPZ	51
Table 4.3: Issues of solid waste management practices	55
Table 4.4: Strategies to overcome issues	59

LIST OF FIGURES

Figure 2.1: Key concepts of solid waste management.....	25
Figure 2.2: Elements of solid waste management procedure.....	26
Figure 3.1: Research process	39
Figure 4.1: Solid waste management system.....	54

LIST OF ABBREVIATIONS

BOI	–	Board of Investment
CEA	–	Central Environmental Authority
EPZ	–	Export Processing Zone
FDI	–	Foreign Direct Investment
GDP	–	Gross Domestic Product
SWM	–	Solid Waste Management