

Chapter 2

Environmental Management and Waste Management: Principles and Applications

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ABSTRACT

This chapter indicates the advanced issues of environmental management; Life Cycle Assessment (LCA) and life cycle costing; waste management, environmental sustainability, and environmental benefits; Solid Waste Management (SWM); electronic waste management; construction waste management; and the importance of Municipal Solid Waste Management (MSWM). Environmental management is a systematic strategy that companies can apply to find the different ways for saving water, energy, and materials, and for reducing the negative environmental impacts. Environmental management aims to prevent pollution, preserve natural resources, and reduce environmental risks toward creating an environmentally-friendly image with different stakeholders. Effective waste management method reduces the consumption of natural resources and lowers the ultimate needs for waste disposal. The chapter argues that enhancing environmental management and waste management has the potential to increase environmental performance toward environmental sustainability.

INTRODUCTION

Environmental problems caused by enterprises have become a big concern for governments and the public (Akkaya, Wolf, & Krcmar, 2011). Environmental standardization is the unique fusion of technology design and public policy development involving various constituencies, such as environmentalists, technologists, legislatures, regulators, standard-setting bodies, upstream suppliers, downstream users, and society's affected communities (Bagby, 2011). Environmental management accounting (EMA) is needed as an application of accounting that is concerned with the environmentally induced impacts of companies, measured in monetary units or in physical units (Gurarda, 2015). The ISO 9000 (a quality

management system) and ISO 14000 (an environmental management system) standards have a positive impact on achieving sustainable business (Pradhan, 2013).

The development of industries, urban growth, and population densities will automatically increase the generation of wastes (Jagan, Dalkılıç, & Samui, 2016). Waste streams, waste collection, treatment, and disposal methods are combined into a practical waste management systems that are different in different regions and countries (Filho, Brandli, Moora, Kruopiene, & Stenmarck, 2016). Rapid population growth leads municipalities toward effective solid waste management (SWM) applications (Cılız, Yıldırım, & Temizel, 2016). Pollution prevention is a step toward obtaining a green environment (Fagbenro, 2016). SWM is an increasingly important element in terms of efficiency and profitability for any municipality, particularly in the industrialized nations (Gallegos, Aguilera, Aguilar, & Villalón, 2013).

This chapter aims to bridge the gap in the literature on the thorough literature consolidation of environmental management and waste management. The extensive literature of environmental management and waste management provides a contribution to practitioners and researchers by indicating the significant aspects of environmental management and waste management toward environmental sustainability.

BACKGROUND

Consumers and stakeholders have rising concerns over product quality and environmental issues (Lo, 2013). Regarding environmental management, many organizations across the globe significantly think green and strive for sustainable results (Mochal & Krasnoff, 2014). The adoption of all types of environmental management systems is associated with the improved environmental performance in an international setting (Darnall & Kim, 2012). Competitive motivations and environmental management commitment are the important factors explaining why firms incorporate the environmental issues into their strategic planning process (Fraj-Andrés, Martínez-Salinas, & Matute-Vallejo, 2009). Considering the implications of EU environmental laws, such as REACH (registration, evaluation, authorization, and restriction of chemicals), EuP (directive on eco-design of energy-using products), and RoHS (restrictions of the use of certain hazardous substances in electrical and electronic equipment) Directive, they have been acquired to advance green supply chain management (An, 2008).

The increasing industrialization leads to the increased disposal of uncontrolled waste products into the environment and creates hazards (Prabu, Suriyaprakash, Kandasamy, & Rathinasabapathy, 2016). The global shift in environmental movement has the significant impacts on the business operation of manufacturing firms that are located in the developing countries (Savita, Dominic, & Ramayah, 2016). Lean supply chain and green supply chain strategies help companies maximize the improvement of lean production in operations management (Kasemsap, 2016a). Green supply chain management is the management that utilizes the green concept by coordinating and maintaining procurement and production process in order to produce, deliver, and reuse the products (Kasemsap, 2016b). Tourism and hospitality industries have focused their environmental attention toward adapting environmental management practices in organizations (Hamzah, Karim, Camillo, & Holt, 2015). Environmental accounting is an important function that provides industry with a method to incorporate information with business decision making and business operations (Singh, Panackal, & Venkataramani, 2016).

Environmental pollution has been continuously threatening the world (Kocasoy, 2016). The increase in population, change in life standard and life style, industrialization, and production of new products significantly contribute to the increase in the amount of solid wastes and consequently the environmental

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