

Chapter 20

Waste Management in Developing Countries: An Overview

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ABSTRACT

This chapter summarizes and compares the current situation of waste management practices in developing countries as reported in other chapters of this book. Due to increasing rate of urbanization, population, and economic growth, generation of waste is also on the rise. It further makes the waste management situation trickier for developing countries as effective regulations and policies are either lacking or their stringent enforcement is absent. Thus, it leads to major issues of inefficient waste collection, open dumping, open burning, and over-reliance on landfilling. It was also discovered that holistic approach of all relevant stakeholders from governmental level to waste generators level is glaringly missing in most of the developing countries. At the end of the chapter, several recommendations are presented to overcome the challenges.

INTRODUCTION

Waste management has always been a challenging task for local authorities. Nevertheless, it is a sector which should not be taken lightly, as improper waste management can lead to disastrous consequences. The weight of the burden for waste management differs from one country to the other. Different countries face different challenges, while one country is challenged by one social factor, same factor could be the strength for waste management in another country. This chapter summarizes and compares the current situation of waste management practices in some of the global developing countries. With the underlying foundation, this chapter synthesizes present and future challenges faced by waste management sector of developing countries and discusses the means of overcoming these challenges.

WASTE DEFINITIONS IN DEVELOPING COUNTRIES

Definition of waste is important in order to regulate the waste material while imposing its appropriate management. Table 1 defines waste in accordance to the respective developing countries.

A clear definition is very important in authorizing the responsibility and jurisdiction of the various waste to the appropriate party. This not only ensures a more effective and efficient management of the waste, but also prevents overlapped jurisdiction which are not economical and interest conflicting. On the other hand, the clear definition can avoid misconception and confusion particularly in legal execution. Nevertheless, all stakeholders should be made aware of the existence of such jurisdictions and proper management of respective waste streams should be carried out, as well as collecting the data on generation of each type of waste. Following section discusses the various types of solid waste generated in developing countries.

TRENDS IN SOLID WASTE GENERATION IN SELECTED DEVELOPING COUNTRIES

The waste generation of different countries of the same region may vary from one another as it can be seen in previous chapters. However, it is evident that different cultures, living styles, income level, and urbanization, among others, dictate the trend in waste generation in all developing countries. Table 2 gives the Municipal Solid Waste (MSW) generation of developing countries from previous chapters and it is worth noting that all of the developing countries focused on management of MSW but not on the reduction of waste generation. Unlike developed countries where the main focus is on waste reduction and resource circulation.

When studying the factors of MSW generation in developing countries, it is seen that certain factors influence greatly in some countries than the others. For instance, in 2012, Bangladesh, with a population of 163 million inhabitants generated 15 million tons of waste with per capita generation of 0.35 kg/day. South Africa, on the other hand, generated 54 million tons of waste from the whole country populated with only 57.8 million people due to higher gross domestic product (GDP).

On the contrary, Cambodia's population (16 million) was half of the population of Ghana (30 million), produced an annual waste generation of 3 million tons of waste while Ghana has almost double the amount of waste generation with 5 million tons. This implies that population size has a significant

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