

Municipal Solid Waste Management in Asia: A Comparative Analysis

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Abstract

The present scenario of municipal solid waste management (MSWM) in four study countries of Asia – namely China, India, Sri Lanka and Thailand is highlighted comparing technical, economic, legal and, health issues. An overview of various aspects of the municipal solid waste (MSW) is provided comprising all domestic and non-hazardous wastes in the urban areas of the above countries with emphasis on the generation and composition of MSW, management needs, collection systems practiced, transportation and disposal systems used. The collections systems and their lacunae, the recycling practiced with respect to the involvement of the government and the private sectors are underlined. Disposal methods in India and Thailand find mention in particular for landfill and incineration. Other issues taken up are the effects on MSW due to cultural aspects and climatic variations. Further to that it is reflected on the public awareness and participation of the community in MSWM as well as the involvement of the NGOs and the private sector. Finally, the emerging trends with respect to the integrated solid waste management (ISWM) have been discussed.

1. Introduction

Solid waste management (SWM) is an integral part of the urban environment and planning of the urban infrastructure to ensure a safe and healthy human environment while considering the promotion of sustainable economic growth. Rapid economic growth by industrialization of the developing countries in Asia has created serious problems of waste disposal due to uncontrolled and unmonitored urbanization [1]. The problem is further aggravated by the lack of financial as well human resources trained in SWM practices in the sphere of collection, transportation, processing and final disposal. Whereas aspects like recycle, reuse and recovery of the solid waste is grossly demand and supply driven or disorganized in most cases. In this scenario, the responsible persons or agencies concerned with the public health and environment protection face the crisis of ineffective MSWM. The waste generated in the developing countries is similar in composition, the variation between regions being dictated by the climatic, cultural, and industrial, infrastructural and legal factors. The four study countries of Asia used for the comparative study have been chosen due to the large population in China and India with wide geographical variations while Sri Lanka and Thailand represent newly industrialized nations. In 2001, China had an economic growth of 7.3% in 2001, India 5.9%, Sri Lanka 4.9% and Thailand 4.6% [2]. All the four countries are experiencing a rapid economic growth and urbanization. The MSWM systems practiced in those countries reviewed are representative cross-section of Asian regions with respect to climatic and socio-economic variations.