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Municipal solid waste recycling in the Gulf Co-operation Council states

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Abstract

Solid waste recycling should be integrated with other solid waste management options to abate degradation in urban environment. This can be accomplished through promotion of economically efficient and environmentally sound practices in managing municipal waste. Recycling can be promoted by encouraging separation at the source. Separation at the source can be achieved through financial incentives stimulation, legislation and raising of environmental awareness. Even some of the Gulf Co-operation Council (GCC) member states have placed recycling at the top of their waste management priorities, the low cost of landfill and the availability of land make recycling programmes infeasible, uneconomical and unachievable. The only comprehensive form of recycling available within the GCC states is recycling of paper and cartons. The majority of the GCC states never set national or regional recycling targets. The cost of recycling in the GCC states region could be moderate to high according to the collection system selected for the recycling programme. Government policies on the environment exist but are poorly implemented. Public enlightenment programs lacked the needed coverage, intensity and continuity to correct the apathetic public attitude towards the environment. This paper provides strategies for developing the most effective recycling marketing programme considerations and regional co-ordination options.

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Keywords: GCC states; Recycling; Solid waste; Waste management

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1. Introduction

Until recently, environment was not considered as an important issue in the third world countries such as Kuwait, and solid waste management was definitely not the prime concern of environmentalists and the governmental agencies. Only recently, when certain environmental groups started working and highlighting the issue of municipal waste services in the country that the responsible authority in Kuwait realized the importance of this particular aspect of environmental management.

One of the major problems facing a nation is the need for the proper disposal of the voluminous solid waste generated every year. In the industrialized nations, usually the quantity of waste and lack of disposal sites have been the causes of concern (Podar, 1993). In non-industrialized nations, on the other hand, the public's general lack of environmental knowledge and awareness, and the constant enlargement of areas of landfill disposal sites constitute major issues (Koushki and Alhumoud, 2002). In the Gulf Co-operation Council (GCC) states (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates) the delicate balance of the desert regions' eco-system may also, in the long run, be adversely affected by the magnitude of landfill disposal of solid waste.

In the GCC states, the discovery of oil in the early sixties, has resulted in the fast development of the cultural, construction, and industrial aspects of the nations. Also, due to the discovery of oil, there was an increase in immigration to the region. A unique characteristic of the countries of the GCC is the constant change in the expatriate population from year to year. Each year, a significant percentage of the expatriate population in the region leaves the countries upon the termination of their contracts. These individuals are replaced by another group of expatriate workers mostly from the Philippines, India, Bangladesh, and Sri Lanka. The generation and the mix of urban solid waste are therefore in a process of constant change. The solid waste information of only a few years back may no longer be valid to represent the picture of household solid waste at the present time. Table 1 shows the solid waste generation rate in different states of GCC (Alhumoud, 2002; Koushki and Alhumoud, 2002). The GCC member states do not experience increased population density or land scarcity as greatly as the industrialised developed states in Europe, and Japan do. Consequently, landfill, a waste management alternative, is considered the most appropriate waste disposal technique. Landfill is dominantly used by all of the GCC member states, and all landfill sites in the GCC region are government owned. Although some of the GCC member states have placed recycling at the top of their waste management priorities, the low cost of landfill and the availability of land, usually old quarries make recycling

Table 1
Municipal solid waste generation rate in the GCC states

Country	Population (million)	Generation rate (kg/person/day)
Kuwait	2.23	1.4
Saudi Arabia	20.1	1.25
Bahrain	0.35	1.26
Qatar	0.44	1.3
United Arab Emirates	2	1.18
Oman	2	0.73

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