



Solid State Management: Some Planning for near Future

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Abstract

Present paper describes the basic principles of solid waste management i.e., refuse, reduce, reuse and recycle. Different treatments are applied for different types of solid wastes. The solid waste should be treated in as decentralized manner as possible. Storage of organic or biodegradable and inorganic or non-biodegradable solid waste should be in different bins. The entire operation of solid waste management (SWM) system is performed under four headings, namely, street cleansing, collection, transportation and disposal. Waste management in India mostly means a picking up waste from residential and industrial areas and dumping it at landfill sites.

Keywords: Cleansing, dumping, disposal, landfill, refuse, reduce, reuse, recycle, solid waste management

Introduction

Urban residents are generally subjected to much higher concentrations of pollutants than rural residents. Litter and garbage are abundant in slums and squatter villages, where solid waste [1-3] pick up services often doesn't exist. These conditions invite the spread of disease.

Population explosion, coupled with improved life style of people, results in increased generation of solid wastes in urban as well as rural areas of the country. In India like all other sectors there is a marked distinction between the solid waste from urban and rural areas. However, due to ever increasing urbanization, fast adopting of 'use and throw concept' and equally fast communication between urban and rural areas, the gap between the two is diminishing. The solid waste from rural areas is more of a biodegradable nature and the same from urban areas contains more non-biodegradable components like plastics and

packaging. Universally 'making garbage out of sight' is the commonly followed practice.

In India, the urban local bodies, popularly known as the municipal corporations, are responsible for management of activities related to public health. However, with increasing public and political awareness as well as new possibilities opened by economic growth, solid waste the big traders, wholesalers and manufacturers come under the organized segment of the waste-recycling sector.

Transport of Solid Wastes

The expensive item in solid waste disposal is the costs incurred in transporting the wastes from the streets to dumping or disposal grounds. Diesel trucks and open trucks are used in cities. Bullock/buffalo carts were used earlier but in many places these are replaced with trucks. An animal drawn cart least polluting but is slow. At this time of

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energy saving plans, and reducing automobile pollution, it is worth considering improving the bullock-cart, with better mechanical efficiency, rubber tyres and mechanical tippers. The animal once trained for a route performs their task of drawing the cart on the streets without much aid from the driver. Cattle numbers are also dwindling and using animals for energy may be a worthwhile suggestion. Most of the time the economic plans of solid waste disposal are upset due to the high transport costs. This can be modified with animal carts.

There are different types of trucks-petrol as well as diesel, with mechanisms to tip the carrier or to compress the waste as it is being collected by hydraulic ram. The maintenance of the vehicles is important since corrosion is common in garbage carrying trucks. Unhygienic transport, due to the negligence of the workers, by overloading the truck, and the material getting scattered along the truck route is a very common light.

Management of solid wastes

Basically there are three types of disposal techniques practiced in domestic solid wastes management [4-8]. Other than hospital waste, a city normally does not have hazardous wastes mixed up in the city garbage. Even through in India, because of poverty, illiteracy and unhygienic habits fecal matter often finds its way into solid wastes and communities the material. In most of the other countries, where adequate disposal methods are practiced, the three main practical methods used are (i) Sanitary land disposal (ii) composting and (iii) Incineration. All the three are practiced in India from olden times. Composting is common with farmers and villagers, sanitary land disposal with towns and cities incineration with individuals and farmers in the field regarding agricultural wastes. Villagers are used to composting the animal dung mixing it with soil. Cow dung itself was used as plastering material for floors and walls and the frontage of a gate of a house. Excess cow dung is never wasted, but made into dry cakes and burnt as fuel. Many of old habits are replaced today. Cow during digesters have become popular in some places when *gobar-gas* is used as a fuel and sludge as fertilizer. Incineration as a disposal for city solid wastes is more expensive and requires more

control over the operation because of air pollution. Today incineration is suggested for few hazardous wastes from community or industry.

Waste management system in India

Waste management market comprises of four segments- Municipal Waste, Industrial Waste, Bio-Medical Waste and Electronic Waste Market. All these four types of waste are governed by different laws and policies as is the nature of the waste. In India waste management practice depends upon actual waste generation, primary storage, primary collection, secondary collection and transportation, recycling activity, treatment and disposal. In India, municipality corporations play very important role in waste management [9-10] in each city along with public health department. Municipal corporation is responsible for the management of the MSW generated in the city, among its other duties. The public health department is responsible for sanitation, street cleansing, epidemic control and food adulteration. There is a clear and strong hierarchy of posts in the Municipal Corporation. The staffs in the public health department are as follows: Health officer, Chief sanitary and food inspector, Sanitary and food inspectors, Sanitary supervisor, Sweepers, etc. The entire operation of solid waste management (SWM) system is performed under four headings, namely, street cleansing, collection, transportation and disposal. The cleansing and collection operations are conducted by the public health department of city Municipality Corporation, while transportation and disposal of waste are carried out by the transportation department of city Municipality Corporation. The entire city can be divided into different zones. These zones are further divided into different sanitary wards for the purpose of solid waste collection and transport operation.

Actions we can take to reduce the waste we generate:

- i) We keep tracking of the waste that we personally generate. We should know how much waste we produce. This will make us conscious of how to reduce it.
- ii) Recycle as much as possible: We take our cans, glass and paper to a recycling centre or use curbside pickup. Take our hazardous

materials such as batteries, cell phones, computers, paint, used oil, and solvents to a hazardous waste collection site.

- iii) Reduce Packaging: Whenever possible by our food items in bulk or concentrated form.
- iv) Use durable products: If we choose automobiles, light bulbs, furniture, sports equipment, and tools that will last a longer time.
- v) Reuse products: Some things may be used for several times. For example, we can reuse boxes, and shipping “bubble wrap” to ship packages.
- vi) Purchase products made from recycled material; many bottles, cans, boxes, containers, cartoons, carpets, clothing, floor tiles, and other products are made from recycled material. Select these whenever we can use.
- vii) Purchase products designed for case in recycling: Products as large as automobiles along with many other items are being designed with recycling in mind. Apply pressure to manufactures to produce items that can be easily recycled.

Conclusions

There is an urgent need to build upon existing systems instead of attempting to replace them blindly with models from developed countries. To prevent any epidemic and to make each city a healthy city-economically and environmentally, there is an urgent need for a well-defined strategic waste management plan and a strong implementation of the same in India.

As general public, we cannot do much in policy and regulations formulation, adoption of newer technologies related to recycling and other waste management options.

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