

Municipal Solid Waste Management in the Township Area of Banswara (Rajasthan)

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Abstract : Municipal solid waste management (SWM) is a major challenge for local governments in rural India. One key issue is the low priority assigned by the local government which is faced with limited financing capacity. Urbanization contributes enhanced municipal solid waste (MSW) generation and unscientific handling of MSW degrades the urban environment and causes health hazards. In this paper, an attempt is made to evaluate the major parameters of MSWM, in addition to a comprehensive review of MSW generation, its characterization, collection, and treatment options as practiced in banswara (rajasthan). The current status of MSWM in banswara district and important sector of Banswara is also reported.

Key words: MSW, Urbanization, MSWM

Introduction

Solid Waste Management may be defined as the discipline associated with the control of generation, collection, storage, transfer and transport, processing and disposal of solid wastes in a manner that is in accord with the best principles of public health, economics, engineering, conservation, aesthetics and other environmental considerations. Municipal solid waste includes commercial and domestic wastes generated in municipal or notified areas in either solid or semi solid form excluding industrial hazardous wastes but including treated bio-medical wastes.

Qualitative and quantitative analysis

Population of Banswara town is 100,128
Solid waste generated by per person is 500g
Total no of sectors in Banswara town are 41
Solid waste in metric tonne= $\text{population} \times 500\text{g} / 100 \times 100$



Figure no: 1 Site Location Map

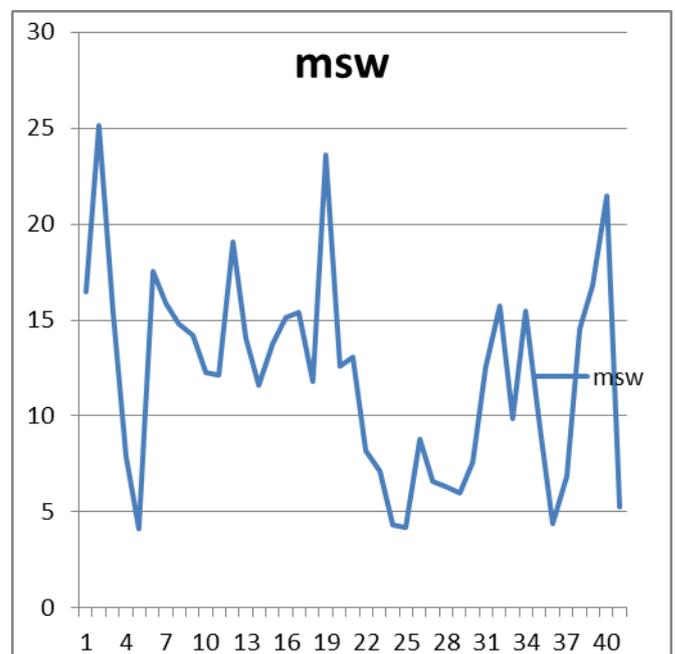


Figure No: 2 Graph between ward and MSW

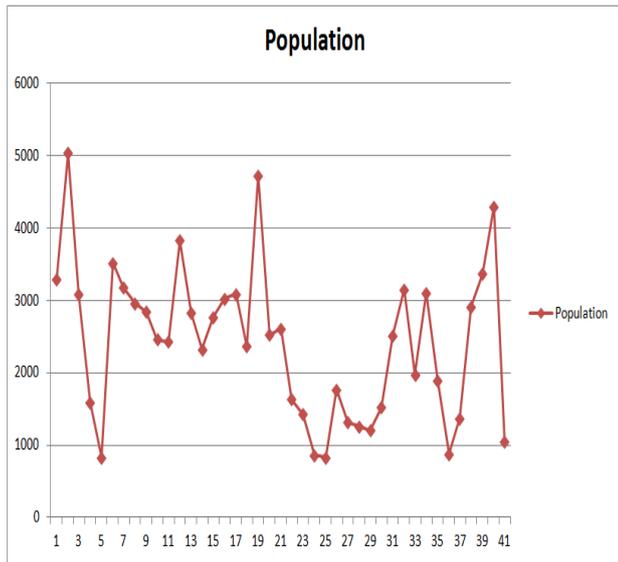


Figure No: 3 Graph between ward and Population

MSW characteristics and composition

The composition of municipal solid waste is the term that describes the distribution of each component of wastes by its percent weight of the total. The information is required for the selection of suitable treatment and disposal methods. Most of MSW containing high percentage of biodegradable wastes e.g. food wastes and yard wastes are suitable for composting. Similarly if recyclable materials like paper, plastic, cardboards, glass are presented in solid waste, these materials should be recovered and recycled.

Seasonal variation

The precise composition depends upon the locality, season of the year, standard of living; land use etc. Seasonal variations are often large in municipal solid wastes. Many fruit and vegetable wastes including bagasse from sugarcane, mango peelings, melon peelings are all seasonal. Huge volume of these seasonal wastes alters the composition of MSW significantly.

Location of locality

Composition of waste also differs from locality. People in a particular locality often have similar background in terms of incomes, tastes and expenditure. Waste from income group localities is usually heavy in paper and packaging, while in low income group areas, the predominant constituent is usually food waste.

Nature of activities

Composition of wastes from commercial areas depends upon the nature of activities. Around offices and institutions usually paper and packaging are the major components while close to vegetable fruit markets, food waste are predominant. Similarly, wastes near dairy farms will be high in animal feed and manure while in the wastes from slaughter houses bones, blood and animal body parts will be commonly found.

Storage and collection of MSW

Banswara District is in southern Rajasthan with an area of 5,999 square kilometers. The collection and disposal of solid wastes is the responsibility of Municipal Corporation of Banswara. Municipal Corporation has divided the entire town area in 3 zones that are zone 1, zone 2 and zone 3.

The bins are used for both decomposable and non-decomposable waste (no segregation of waste is performed), and the waste is disposed at a communal disposal center. Storage bins can be classified as movable bins and fixed bins. The movable bins are flexible in transportation but lacking in durability, while the fixed bins are more durable but their positions cannot be changed once they have been constructed.

In Banswara city there are 200 no's of white movable bins for combine solid waste and 200 no's of green/blue bins for organic solid waste. Storage capacity of white movable bin=1000kg. Storage capacity of green/blue bin = 20kg

The collection of MSW is the responsibility of corporations/municipalities. The predominant system of collection in Banswara town is through communal bins placed at various points along the roads, and sometimes this leads to the creation of unauthorized open collection points.

Collection process in Banswara town is mainly done by following methods

- Door to door collection
- A collection through sweeper, a sweeper who sweeps the roads manually is allotted a specific area (around 250 m²). The sweepers put the road wastes into a wheelbarrow, and then transfer the waste to dustbins or collection points.

Transfer and transport of MSW

Transportation site is Bhandariya village near Banswara.

Transportation is done by the help of following vehicles like

S.No.	Type	No of vehicle	Capacity	Description
1	Auto	12	500kg(0.5tonne)	12*3 trip per day*500kg*30days=540 tonne /month
2	Garbage truck	1	9 tonne	9 tonne*2 trip per day*31 days=558 tonne /month
3	Jcb	1	-	-
4	Loader	1	-	-
5	tractor	5	2.5 tonne	2.5tonne*3trip per day*31days =232.5 tonne/mont

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