

SOLID WASTE MANAGEMENT - CASE STUDY

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ABSTARCT:

Solid waste is the useless, unwanted and discarded material resulting from day to day activities in the community. Solid waste management may be defined as the discipline associated with the control of generation, storage, collection, transfer, processing and disposal of solid waste.

The present paper based on the study carried out on solid waste management practice by Yavatmal municipal corporation. This study was also designed to study the composition of solid waste in Yavatmal city.

Keywords: solid waste, management, composition.

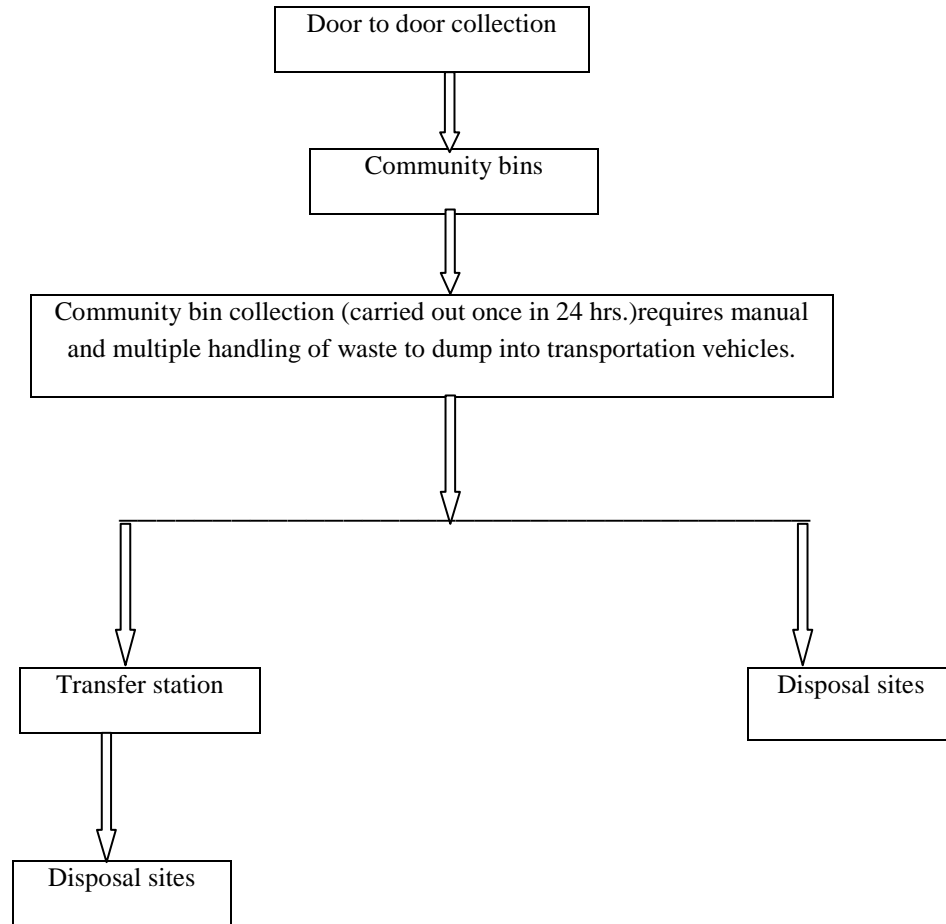
1. INTRODUCTION

Yavatmal district is one of the eleven districts of Vidarbha region of Maharashtra state located at 20° 24'00" North latitude, 78°07'59" East longitudes. Elevation above sea level is 451 m (1479 ft.). Area of Yavatmal city is 10.74 sq. km. The rainfall is not uniform in all parts of the district. The average rainfall is 1065 mm. There are 30,000 houses in Yavatmal city. The population as per information of the authority of Yavatmal Municipal Corporation is 1, 25,956.

Total solid waste generation is 24 tonne/day in Yavatmal city and 36 to 40 metric tonne of waste generates per year. From that solid waste generation per person is approximately 200 gm/capita/day.

The activities associated with the management of municipal solid waste from the point of generation to final disposal can be grouped into the six functional elements.

- Waste generation
- Storage
- Collection
- Transportation
- Segregation & Processing
- Disposal

2. COLLECTION OF SOLID WASTE

Flow chart showing collection of solid waste in fig.1

As a part of decentralization entire city is divided into five zones for the collection of solid waste as follows.

- Weakly Market
- Sanjay Gandhi school, Banger Nagar
- Girls hostel, Near postal ground
- Bus stop
- Arni naka square

There are many varieties of municipal solid waste such as food waste, rubbish, commercial waste, institutional waste, street sweeping waste, industrial waste, construction waste and sanitation waste. It contains recyclable (paper, plastic, glass and metal etc.), toxic substances (paints, pesticides, used batteries, medicines etc.) Compostable organic matter (fruit and vegetable peels, food waste), soiled waste (sanitary napkins, etc.)

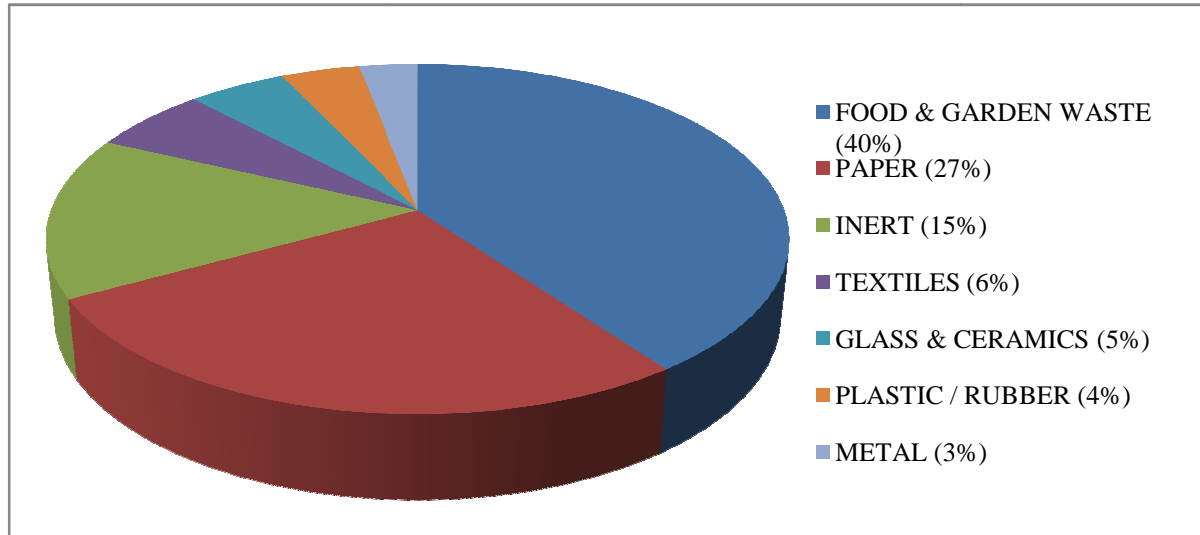


FIG.2- COMPOSITION OF MUNICIPAL SOLID WASTE IN A TYPICAL INDIAN CITY

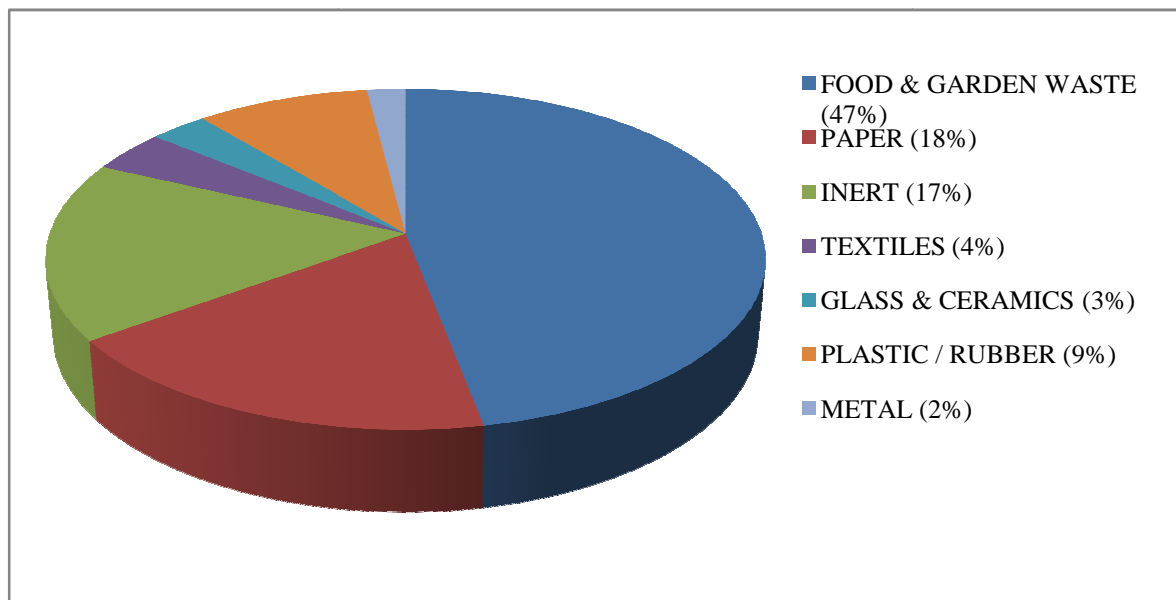


FIG.3-COMPOSITION OF MUNICIPAL SOLID WASTE IN A TYPICAL YAVATMAL CITY

3. DISPOSAL OF SOLID WASTE

There is a site for the municipal solid waste management at village Sawargad situated at 8 km from the Yavatmal city. Disposal of solid waste is done by the following two methods.

- Composting: - It is done by vermin composting of any type of biodegradable wastes such as hotel refuse, biodegradable portion from residence and commercial market, vegetable waste, leaf litter, etc. Size of each vermin composting rack is 6.12 m X 1.52 m X 0.6 m made up of steel. It requires two months.
- Land filling: - Waste is stored on the top of the hill in 5 acres area. All inorganic material is used for the land filling and dumping.

4. CONCLUSION

- The collected data shows that the maximum proportion of refuse caused by food and garden wastes, proportion of the refuse caused by food and garden wastes, second highest was paper and the third highest was inert material. Percentage of Plastic carry bags was higher, where glass, ceramic and metals were nearly equal with each other.
- Provision of litter bins at public places shall be made and there will compulsory segregation at all the sources.
- As the disposal site is at 8 km away and smaller vehicle are used for the transportation of solid waste, it would be desirable to set up transfer station to economize the expenditure on the transportation.
- As manual separation platform of solid waste is there at the disposal site in village Sawargad, it is the most positive way to achieve the recovery and reuse of material such as metal, plastic, glass and rubber etc. It should be done throughout the year. System should be based on Environmental protection rules (reduce, recycle, reuse and recover)
- Public awareness, political will and public participation as essential for the successful implementation of the legal provisions and to have an integrated approach towards sustainable management of municipal solid wastes.
- There should be sufficient health and safety provisions for workers at all stages of waste handling.
- Annual report of addition of the strategies for collection of solid waste shall have to be formulated.

References

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