

Current Scenario on Urban Solid Waste with Respect to Hyderabad City

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Abstract: *Municipal solid waste management is one of the major environmental problems of world. Improper management of municipal solid waste causes hazards to public and environment. Various studies reveal that about 90% of MSW is due to improper management of open dumps and landfills, creating problems to public health and the environment. In Hyderabad more amount of solid waste is generating mostly due to the rapid population and industrialization and mainly due to unawareness of solid waste among the public and masses. In the present day, an attempt has been made to provide a comprehensive review of the characteristics, generation, collection and transportation, disposal and treatment technologies of MSW practiced in Hyderabad. The day pertaining to has been carried out to evaluate the current status and identify the major problems. Various adopted treatment technologies for MSW are critically reviewed, along with their advantages and limitations.*

Keywords: *Waste, Municipal solid waste, Urban, Environment,*

1. INTRODUCTION

Solid waste is a broad term, which encompasses all kinds of waste such as Municipal Solid Waste, Industrial Waste, Hazardous Waste, Bio-Medical Waste and Electronic waste depending on their source and composition. Solid wastes are those organic and inorganic waste materials produced by various activities of the society. (Wolsink 2010) Solid waste management is becoming a major public health and environmental concern in urban areas of many developing countries. Municipal solid waste comprises of domestic wastes and commercial wastes collected within an area. Municipal solid waste includes biodegradable waste, recyclable material inert waste and hazardous and non hazardous wastes. Depending on the physical state of waste, wastes are categorized into solid, liquid and gaseous. Due to rapid industrialization and population waste generation is more and people do not any awareness about MSW generation. This is also one of the reasons for the rapid increase of solid waste. SWM involves activities associated with generation, storage and collection, transfer and transport, treatment and disposal of solid wastes (Frank et al. 2002). But, in Hyderabad, the Municipal solid waste management system comprises only four activities like waste generation, collection, transportation, and disposal.

1.1. Status of Municipal Solid Waste in Hyderabad

Hyderabad is the capital and largest city of Telangana state. It occupies 650 kilometers on banks of Musi River. As of 2011, the population of the city was 6.8 million while the metropolitan area had a population of 7.75 million, making it India's fourth most populous city. Generation of municipal solid waste is also more in high income areas. The waste generated in Hyderabad is 0.6kg/capita/day. The total waste produced in Hyderabad city per day is 3000 ton and per year 10950000 tons. As per recent estimates, the municipal waste generation in metro cities varies between 0.2-0.6 kg/capita/day (Agarwal *et al* 2005) and urban MSW generation is estimated to be approximately 0.49kg per capita per day. This is estimated to be two or three times. However vary from city to city and the per capita waste generated in Hyderabad 0.62kg/day.

2. STUDY AREA

Jawahar nagar is the only area in Hyderabad of Telangana state which is used for the disposal of solid waste. It is situated about 17.5km away from jubilee bus station and time taken to reach there is 40 minutes. It consists of about 378-400 acres. Jawahar nagar dump yard is present on hilly areas. Presently this is only areas which is used as Land filling and open dumping for disposal of municipal solid waste. But presently open dumping is banned due to effect to nature or environment by releasing toxic products and due to release of bad odors to nearby surroundings and pollutes the air water and soil. Land filling and window composting are only methods that are using for disposal of MSW in Hyderabad.

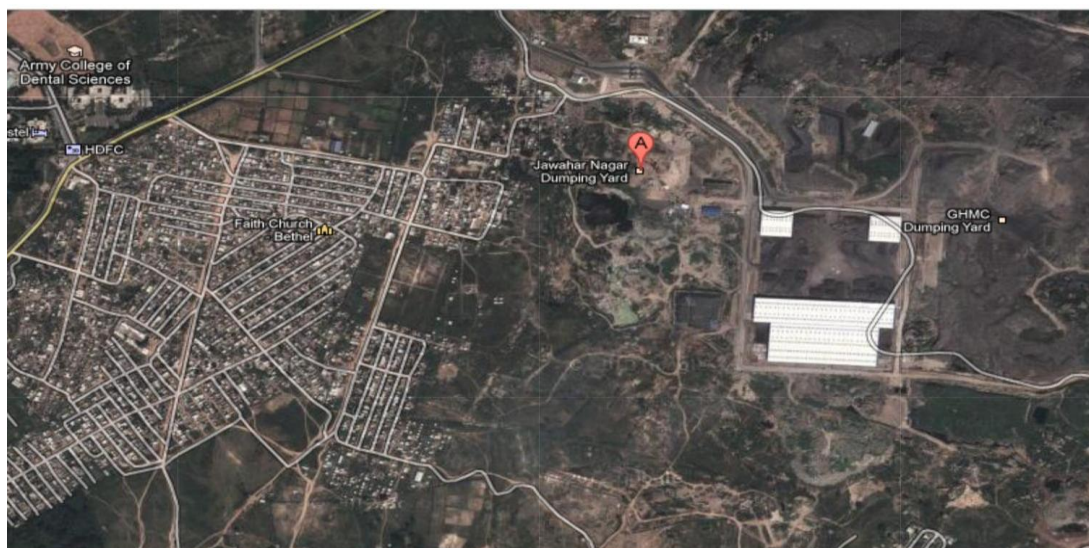


Fig1. Study area of Jawahar nagar dump yard satellite image.

3. WORK METHOD

We visited study area of Jawahar nagar and observed the disposal site.

Collection: We wore the glouse and collected the solid waste of 1ton (100kg) from the area where waste is disposed.

Procedure: From that Quantity of solid waste we segregate the waste in to different categories like organic, inorganic and recyclables.

Organic Waste: Components are kitchen waste, garden waste, fruit peels.

Recyclable Waste: Components like paper, plastic, leather & metals.

Inorganic Waste: batteries paint.

Calorific Value: The calorific value of these ranges from 2400- 3000C.

After segregating the solid waste weighed the components with the help of weighing machine and listed data of that compound in the following manner.

Table1. Municipal solid waste in Jawahar nagar

S.no	Components	% of waste per ton
1	Easily degradable organic waste	37.3
2	Garden yard waste	8.0
3	wooden materials	1.1
4	Coconut shells	15.0
5	Plastics/sachets/ bottles	8.0
6	Paper	7.0
7	Cloth/rags	8.5
8	Metals	0.0
9	Glass/ceramics?	0.7
10	Sand/Silt	7.3
11	Rubber/leather	1.9
12	Bio medical waste	0.2
13	Others	5.0

Source: Greater Hyderabad Municipal Corporation (Feb 2013)

4. RESULT & DISCUSSION

The above data was collected from Greater Hyderabad Municipal corporation dumpsite in Jawahar nagar. According to data collected from Greater Hyderabad Municipal Corporation, it is noticed that the generation of municipal solid waste is of two types these are Biodegradable waste and Non Bio degradable waste

Bio degradable waste consists of easily degradable organic compounds, Garden waste, wooden materials, Coconut shells, Paper & Cloth rags. It is a natural process & undergoes decomposition itself. Biodegradable wastes can undergo decomposition naturally, without any treatment or disposal methods. The product obtained after decomposition process is used as manure in crop & agricultural fields to obtain more yield & available to farmers at cheaper cost. The generation & composition of bio degradable waste in Jawahar nagar dump yard is very high. When compared to others, the generation of easily degradable organic waste is high i.e. 37.3%. The generation of Coconut shells is 15.0%, Cloth rags 8.5%, Garden yard waste is 8.0% & Paper is 7.0%. The generation of these materials is average when compared to easily degradable organic waste & these are also easily decomposable & do not cause any harm to environment. The generation of wooden waste is very less i.e. 1.1% when compared to others.

Non Biodegradable waste consists of metals, glass, ceramics, rubber, leather & Sand. These cannot be decomposed by a natural a process. These can be disposed by treatment or disposal methods. By depositing these materials large amount of pollutants are released into the environment there by polluting it. The generation of plastics/ bottles, are very high i.e. 8.0%, when compared to metals, glass, rubber etc. These Plastics/ bottles, takes a long time to decompose, contaminate the soil, ground water & environment. The generation of sand is 7.3%, if Sand waste is generated in more amount than this, soil losses its fertility, & gets contaminated. The generation of Glass 0.7%, Rubber 1.9% & Metals 0.0% is very less when compared to others. But due to its hazardous nature these contaminate environment. The third category is Bio medical waste. This has to be disposed separately due to its hazardous nature & proper scientific methods should be adopted to dispose biomedical waste & control the ill effects to living organisms nearby waste.

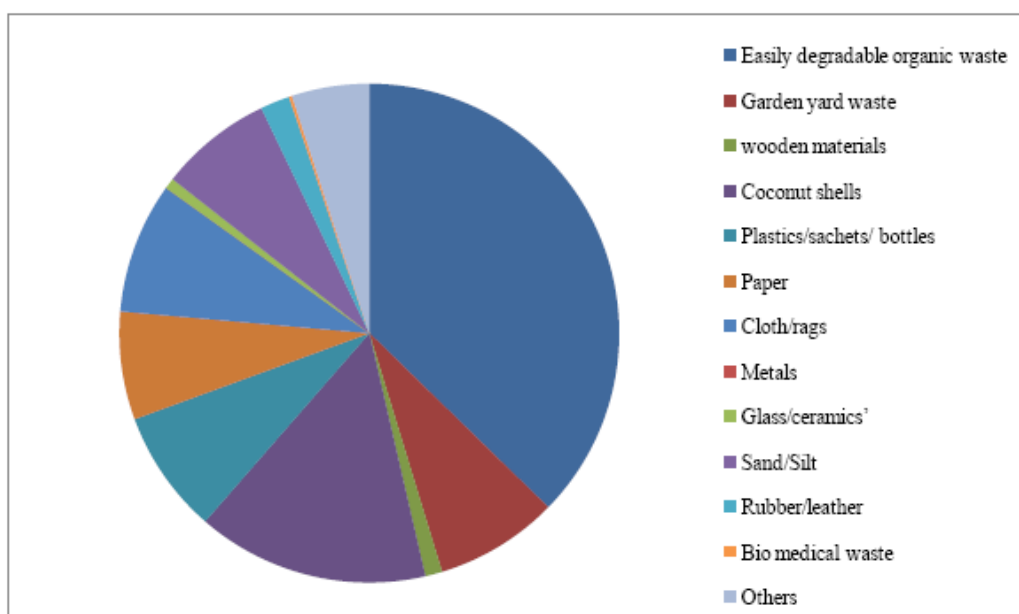


Fig2. Graphical representation of composition of MSW in Jawahar nagar

5. CONCLUSION & RECOMMENDATIONS

Municipal solid waste at Jawahar nagar is being maintained well by greater Hyderabad Municipal Corporation. Proper segregation of solid waste at the point source of generation is very important for easy & safe disposal. For proper management of municipal solid waste the municipal authorities should maintain the storage facilities in such a manner that they do not create unhygienic & unsatisfactory conditions. Transportation of vehicles should be regularized to reduce the quantities of waste disposed on road sides. Open dumping of waste without proper maintenance leads to soil & ground water pollution (due to leakage of leachate), bad odour, harmful gases released into atmosphere causing several health hazards. Sanitary land filling should be encouraged under the guidance of pollution control authorities. The policies of Reduce, Reuse & Recycle (R3) play an important role in the reduction of solid waste. Some areas of Hyderabad are generating more amount of solid waste due to lack of awareness on municipal solid waste management among the public. The municipal authorities should aware the public about the health hazards due to improper management of the waste.

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