

Municipal Solid Waste Management in Balewadi

Gadekar Vikram¹, Waghamare Vishal², Chandgude Ganesh³, Jamwal Permddeep⁴, Bhojar Pankaj⁵

^{1, 2, 3, 4, 5} Department of Civil Engineering

^{1, 2, 3, 4, 5} G.S.Moze College of Engineering, Balewadi, Pune-411045

Abstract- At present the most serious problem of pollution is the direct result of human activity. As soon as large settlement and towns become common, the problem of disposal of solid waste arise. India is also experiencing tremendous growth in urban areas. Urban centers of India produce 120,000 tonnes of solid waste per day. Some metropolitan cities like Bombay, Calcutta, Bangalore, and Pune showing typical urban pollution. Among this Pune produces large quantity (1000-2000 mt/day) of Municipal Solid Waste (MSW). There is major problem of its disposal and management.

In india garbage produced is 0.5kg/capita. Balewadi depot which is under Pune Municipal Corporation (PMC) has unscientific disposal of MSW. The solid waste is increasing in Balewadi area due to growth of population, urbanization, higher per capita income and standard of living, changing lifestyle and food habits. The decomposition of waste produce leachate. This leachate gets percolated in surrounding ground water. The people residing in these areas are using well water for drinking, domestic and for agricultural use. It is observed that the people living in this area having health and hygienic problems such as allergic, asthmatic, bronchitis, skin irritation and gastro intestinal diseases. The solid waste created by the household units, shops, restaurant and commercial units are higher. The collection, segregation, storage, transports and processing of solid waste needs planning and more investment. Cleanliness improves standard of living by reducing different diseases. Public private partnership is more useful in solid waste management. Government and Municipal Corporation must encourage local management through collection, transport and segregation and disposal of solid waste. Public awareness and segregation at source, rules and regulations related to solid waste will bring good change in solid waste management in this area. So we will plan and generate solution for the serious problem.

I. INTRODUCTION

Solid wastes are all the wastes arising from human and animal activities that are normally solid and are discarded as useless or unwanted. The term solid waste as used in this text is all inclusive, encompassing the heterogeneous mass of throwaways from the urban community as well as the more homogeneous accumulation of agricultural, industrial, and mineral wastes.

From the days of primitive society, humans and animals have used the resources of the earth to support life and dispose of wastes. In early times, the disposal of human and other wastes did not pose a significant problem, because the population was small and the amount of land available for the assimilation of wastes was large and there was proper management. Although emphasis is currently being placed on recycling and fertilizer value of solid wastes, the farmer in ancient times probably made a bolder attempt at this. Indications of recycling may still be seen in the primitive, yet sensible, agricultural practices in many of the developing nations where farmers recycle solid wastes for fuel or fertilizer values. The relation between public health and improper storage, collection, and disposal of solid wastes is quite clear. Public health authorities have shown that rats, flies, and other disease vectors breed in open dumps, as well as in poorly constructed or poorly maintained housing, in food storage facilities, and in many other places where food and harborage are available for rats and the insects associated with them. Therefore there is need of significant and proper management at the dumping site.

II. RESEARCH ELABORATIONS

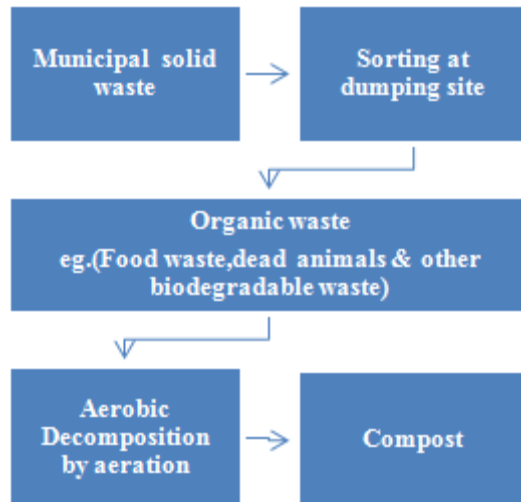
Wet waste generation at balewadi:

Sr. No.	Wet Waste Produced (kg)	No. of Persons	Wet Waste generation kg/person/day
1.	2	5	0.4
2.	1.5	4	0.38
3.	2	6	0.33
4.	0.8	3	0.27
5.	0.5	2	0.25
6.	1.2	4	0.3

Average wet waste generation = $(0.4+0.38+0.33+0.27+0.25+0.3)/6$ Average wet waste generation = 0.3 kg/person/day. Collection of total waste at dumping site (balewadi) is around **12** tonnes per day.

The area of dumping ground is around **1.5** acres.

III. FINDINGS



Flow chart for management at the site

Adopted Steps for the proper management at the site:

1. Separation at the source:

Source separation refers to keeping different categories of recyclables and organics separate at source, i.e. at the point of generation, to facilitate reuse, recycling, and composting.

2. Transportation and collection of Solid Waste:

Regular Transportation using municipal corporation trucks facilitates proper collection at the site.

3. Materials Recovered from Municipal solid Wastes:

As the amount of material recovered from Municipal solid Wastes continues to increase as communities develop program to meet waste diversion goals, materials specifications will become an important factor.

4. Organic decomposition of the biodegradable waste using specified methodology

IV. CONCLUSION

Pune has been experiencing phenomenal increase in the generation of solid waste. This escalation could be accounted to rapid population growth, development in economic activities and changing consumption patterns of the people etc. The increasing solid waste quantities, changing characteristics of waste and the areas to be served strain the existing SWM system. In Balewadi area, piles of garbage and

wastes of all kinds littered everywhere have become eye sore that are polluting the environment. Risks to the public health and the environment due to solid waste in study areas become a monstrous reality. The Pune Municipal Corporation is facing the challenge of poor infrastructure and financial constraint for efficient MSW management that can ensure the scientific disposal of MSW. The Proper management will lead to enhanced planning, administration, finance, technical expertise, equipment, material and will also include improvement in legal aspects of activities associated with generation, storage, collection, transportation, processing and disposal in an environmentally compatible manner.

REFERENCES

- [1] "Study Of Solid Wastes: A Case of Lagos State, Nigeria", Patinvoh R.J, Characterization International Journal of Applied Science and Technology Vol. 1 No. 3; June 2011.
- [2] "Existing Situation of Solid Waste Management in Pune City, India", Mane T.T. and Hingane Hemalata Research Journal Vol.1(ISC-2011),348-351(2012)journal of Recent Sciences.
- [3] "Management of Municipal Solid Waste", Central Pollution Board: Delhi, (CPCB) <http://cpcb.nic.in>.
- [4] "Municipal Solid Waste Management", Maharashtra Pollution Board, (MPCB) <http://mpcb.gov.in/municipal/msw.php>.
- [5] "Municipal solid waste management in Indian cities", Bundela P.S., Gautam S.P., Pandey A. K, International Journal Of Environmental Sciences Volume 1, No 4, 2010.