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A Case Study on Municipal Solid Waste Management Practices in Koppa Town Chickmagalore District

K J Spoorthi and J Narayana *

Department of PG Studies & Research in Environmental Science,
Kuvempu University, Jnana Sahyadri ,Shankaraghatta , Shivamogga , Karnataka. India.

ABSTRACT

Municipal solid waste management is one of the major social and political issues now a day. Management of municipal solid waste is not an easy process so that it requires man power, technology as well as financial assistance and public cooperation. Present study is conducted to identify the current solid waste management practices in Koppa town, Chickmagaluru district, by estimating per capita waste generation, total municipal solid waste generation, estimation of bio degradable waste generation etc.

KEY WORDS: Municipal solid waste management, Koppa, Biodegradable waste, income group

***Corresponding author**

J Narayana,

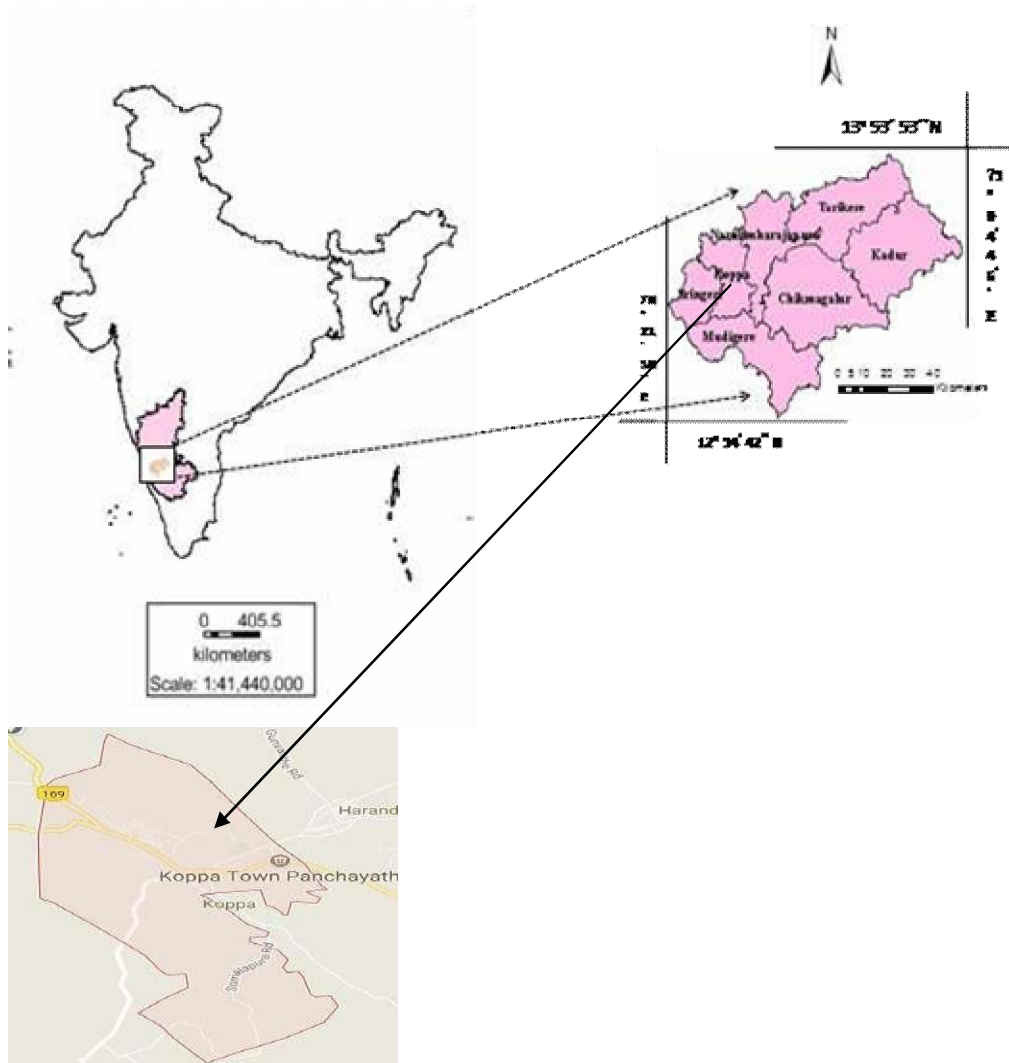
Department of PG Studies & Research in Environmental Science,
Kuvempu University, Jnana Sahyadri, Shankaraghatta, Shivamogga,
Karnataka, India, Email: spoorthikj@gmail.com, janaes@rediffmail.com

INTRODUCTION

Solid wastes generated in Indian cities are mainly composed of organic fractions and are biodegradable. The waste generally includes degradable (paper, textiles, food waste, straw and yard waste), partially degradable (wood, disposable napkins, and sludge) and non-degradable materials (leather, plastics, rubbers, metals, glass, ash from fuel burning such as coal, briquettes or woods, dust and electronic waste) ¹Due to population growth, industrialization, urbanization and economic growth, a trend of significant increase in Municipal solid waste generation has been recorded worldwide. MSW generation, in terms of Kg/capita/day, has shown a positive correlation with economic development at world scale. The per capita generation of MSW has also increased tremendously with improved life style and social status of the populations in urban centers. As more land is needed for the ultimate disposal of these Solid wastes. Municipal solid waste management (MSWM) is associated with the control of waste generation—its storage, collection, transfer and transport, processing, and disposal in a manner that is in accordance with the best principles of public health, economics, engineering, conservation aesthetics, public attitude, and other environmental considerations. Presently, most of the metropolitan cities and MSWM systems include all the elements of waste management. However, in the majority of smaller cities and towns, the MSWM system comprises only four activities: storage, collection, transportation, and disposal²In the present study, an attempt has been made to provide a comprehensive review of MSWM for KOPPA town to evaluate the current status and identify the problems of MSWM. The study also aims at encouraging competent authorities/researchers to work towards the improvement of the present system through suggestions and recommendations.

MATERIALS AND METHODS

2.1 Study area



2.2 Quantification and Characterization of Municipal Solid Waste

The study has been carried out by collecting samples of 20 randomly selected residences. In each income group such as high income group (HIG), middle income group (MIG) and low income group (LIG) were selected. To study the quantitative generation of solid waste, polythene bags were distributed to the selected families and informed to collect the waste produced for 24 hrs time. The refuse accumulated for 24hrs was collected on the consecutive days and weighed. Further the waste is classified in to different components such as paper, plastic, glass, scrape, metal, kitchen waste, hazardous waste and miscellaneous waste to know the percentage composition on spot. In addition to this, number of inmates present in the house is also noted. Generation of solid waste in each group is calculated based on total waste generated divided by number of inmates present .secondly per capita solid waste generation was multiplied with total population of the town to get residential share of total solid waste generated in the city. The primary data collected using questionnaire method about municipal waste management. The detailed information regarding collection transportation, disposal and environmental problems have been communicated with the public communities .The secondary data was provided by the municipaloffice.

RESULTS AND DISCUSSION

Table No :1 “Salient features of existing SWM in Koppa town”

Particulars	Details
Town panchayat area	1.99sqkms
Population	5113(2001)
Quantity of refuse generated	4t/d
Quantity of refuse collected	3.5t/d
No. of vehicles available for SWM	02
No.of days when waste is collected	Daily
Method of land filling	Yes
Method of disposal	open dumping
Programme for recycling	No
Programme for composting	No(not working)
Specification of vehicle	2 tractors
Man power engaged	25

3.1 Waste generation according to HIG MIG and LIG

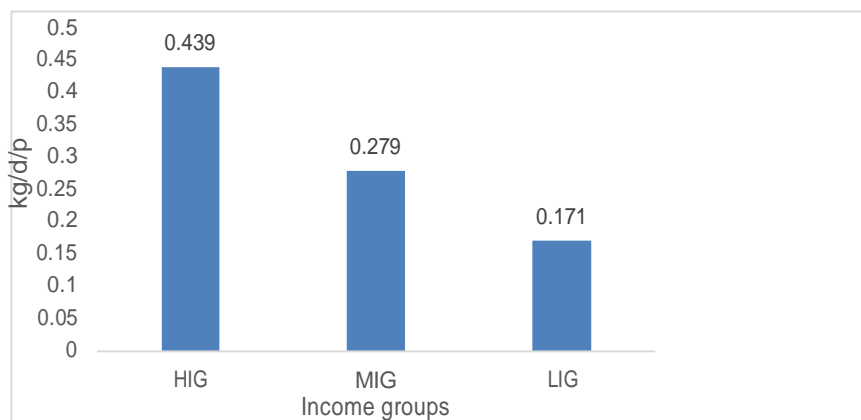


Fig: 2 Quantity of Solid Waste Generation from Different Income Groups

Collected data revealed that the solid waste generated by the low income group (LIG) shows 19.95kg/day for 116 inmates; High income group (HIG) shows 34.3kg/day for 78 inmates whereas the middle income group (MIG) generates 33kg/day for 118 inmates. upon calculation its found that in high income group people generation of waste per day per person is 0.439 kg, 0.279kg, 0.171kg for middle and low income groups respectively

3.2 Types of waste generated

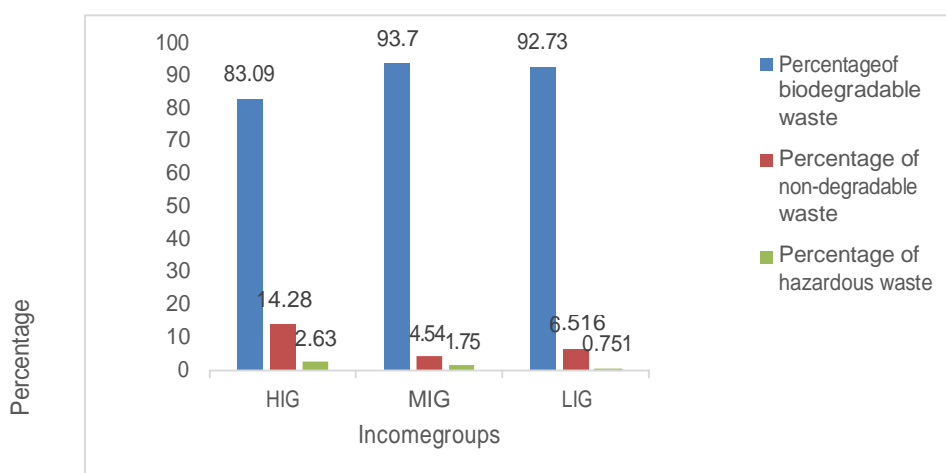


Fig:2 Percentage of solid waste generation from different income groups (based on degrade ability of the waste)

The commercial areas generate more amounts of plastic, paper, leather and rags when compared to Residential Areas at Kolhapur city also noticed similar changes³.

The collected data indicates that generation of organic waste in the town is high. This large quantity of waste can be utilized in the process of composting, such and can be used for biogas generation. Municipality should take initiatives to use such resources in a proper manner to gain profiteconomically.

3.3 Public opinion regarding waste management.

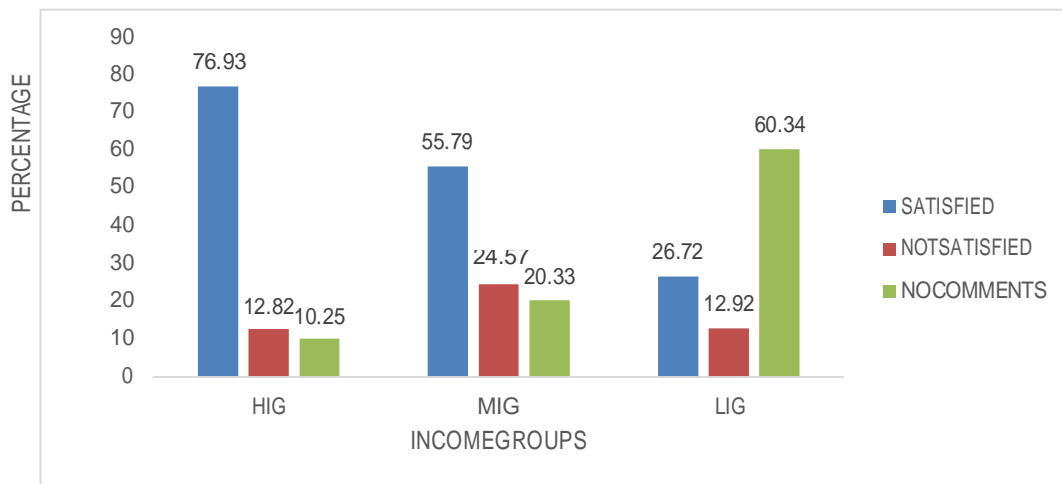


Fig:3 Opinion Shared By the Public about Existing Solid Waste Management In The City

High-income group people expressed more satisfaction with the current solid waste management practices but the low income group people are not much aware about solid waste management practices

CONCLUSION

The Koppa town municipal authority is effectively dealing with the collection of waste from the houses daily. But the waste is not segregated at the source, and being largely accumulated at the dumping site so that creating nuisance. The composting unit is stopped due to lack of man power requirement for segregation process. Land filling is also not properly managed. All the waste from the town is accumulated at dumping site and causing environmental degradation. Powrakarmikas: plays an important role in solid waste management. At Koppa town totally 25 powrakarmikas are working and are not provided with any personal protective equipment's. So that they may get any kind of infectious disease and may get injured while handling the solid waste. As the site allotted for

dumping site is nearly covers four acres of land, instead of simply dumping the waste at this land, composting, biogas generation techniques must be adopted.

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