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# Solid Wastes and Environment: An overview on Generation, Implications and Available Management Options in Yavatmal Cotton Market Area, Maharashtra, India

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**ABSTRACT:** The Yavatmal Municipal Council has a spread of about 3.78 km<sup>2</sup>. Municipal Solid Waste (MSW) is one of the most significant environmental problems in most cities all over the world, and there is no exception in this case with Yavatmal. This increasing problem of solid waste affects the urban environment of the city. In this regard, the present study was conducted to probe for the causes leading to the production of solid wastes in Yavatmal and also to find possible problems associated with it. This paper attempts to evaluate the status of Municipal Solid Waste Management, with reference to the city, quantifying and qualitatively understanding the volume and character of waste generated, impacts on the environment, and the existing management practices in place.

Quickening the pace of intensification of challenges surrounding MSWM is rapid urbanization and accelerated economic activity; therefore, it is an area of great concern. Some of the important factors on which effective urban waste management is founded include: land use, transportation networks, public health, and the trajectory of development in the city. This paper provides a framework of the methods of waste collection, the existing state of practices concerning waste management, and functioning of sanitary landfills in Yavatmal. It also presents the present planning metrics and suggests future operational parameters for better MSWM. Thus, the focus comes on the 3Rs strategy that results from the core motto Reduce, Reuse, Recycle-to ensure sustainable waste management in Yavatmal.

**KEYWORDS:** MSW, Waste, Recyclables, Yavatmal, Municipal council cotton market area.

**I. INTRODUCTION**

Endowed with natural beauty, today Yavatmal stands at the threshold of an environmental disaster. Waste generation has been synonymous with human civilization and, as society had gradually drifted away from its bond with nature, the types and quantity of wastes that it generated had undergone a sea change. This trend is all too evident in the burgeoning volume and sophistication of wastes that are piling up in cities like Yavatmal. The key steps in efficient handling of waste include the management of the waste at the point of generation, storage, primary collection, cleaning of streets, temporary storage at community levels, and constant transport to the site of disposal and treatments plants.

Yavatmal Municipal Corporation operates over 3.78 km<sup>2</sup>. According to local authorities, the town has a population of about 3,140,000, and produces approximately 24 tonnes per day, which goes about 36 to 40 metric tonnes per year. Other tons of waste produced around there include parts of fruit and vegetable peels, stale food, glass shards, paper, plastic, medical wastes like syringes and needles, expired medicines, chemicals, rubber products, and also batteries. This waste is inappropriately disposed of, meaning toxic gases that enhance the greenhouse effect are released, and due to their composition, the wastes give birth to hazardous liquids called leachate, which leadsto pollution as well as health hazards for the public. In the past, this mixed waste was collected without segregation or recovery of recyclable materials; hence the costs of collection and processingincreased without gaining valuable recyclables.

In the Municipal Solid Waste Management and Handling Rules of 2000, it has been mentioned thatwaste management is the responsibility of the local urban bodies; in practice, though, the matter ofwaste management is not of great priority and results in makeshift duties, which often get ignored. These issues face a city like Yavatmal with a lot of environmental and sanitation challenges. To overcome such issues effectively, broad planning and good practices in waste management are required for a cleaner and more sustainable future.

Waste management in Cotton market area has emerged as a huge issue due to several reasons, including uncontrolled urban population growth, unplanned urbanization, lack of training on modern waste management techniques, lack of awareness over risks due to unsustainable waste management techniques, poverty, illiteracy, and meager government support. In addition, the unavailability of reliable data and very little research works on waste management worsen the problem of planning and implementing the measures. Despite these challenges, there has been a greater increase in initiatives by the government, NGOs, private companies, and local communities over the last two decades. However, landfilling remains the dominant means of waste disposal in the city.

Most of the waste components possess significant potential when treated or converted using scientific methods. Effective management can dispose of waste apart from providing opportunities for resource recovery and economic benefits. This study analyses the current generation of waste and its characteristics, management practice in Cotton market area, and environmental impacts associated with it. Moreover, this study tries to find

All the differing initiatives need to be in position, and focus needs to be done on the strategy plan for the betterment of waste management for society

Waste generation can be categorized into six discrete functional components. Some of them comprise;

- a) Waste generation
- b) Storage
- c) Collection
- d) Transportation
- e) Segregation and processing
- f) Disposal

Improving these elements will improve the waste management system in the city, leading the world towards . a greener. and more sustainable future

**Aim**

Solid wastes and Environment: An overview on Generation, Implications and available management options in Cotton market area

**Objectives**

- a) Protect the environment by proper and friendly management of waste.
- b) Health and welfare of the community in efficient and inexpensive collection of waste.
- c) To encourage recycling to save energy, preserve natural resources, minimize pollution, lower cost of waste disposal, aid in conserving certain scarce raw materials, and decrease the volume of waste sent to landfills.
- d) It would encourage source segregation of waste and achieve fully automated solid waste management.

**Scope of Study**

- a) The study will focus on the completely automated waste management in Cotton market area.
- b) The system supports proper disposal of waste without causing any harm to the environment as well as health.
- c) This new method is going to make the waste management mechanism very efficient for residential complexes in Cotton market area.
- d) It would decrease the waste going towards landfills, energy saving, and cut back on costs.

**Requirements for Research**

The cotton market area suffers from huge quantities of waste, trash, and garbage. Rising rates of urbanization and population have made waste a big source of environmental pollution. Improper dumping leads to disastrous results: land pollution caused from the open dump, air pollution from burning, and contamination of low-lying areas. Uncollected waste scattered on streets and public spaces causes severe environmental degradation and loss of public health. Water sources connected with open dumping areas also become susceptible to contamination. The city has faced congestion of drainage through indiscriminate dumping. In fact, there is an urgent need for an effective waste management system in Yavatmal.

**Existing Scenario of MSW in Cotton market area**

Cotton market area produces around 24 tonnes of solid waste daily, which then goes to around 36 to 40 metric tonnes annually. An average person will generate around 200 grams of solid wastes per day.

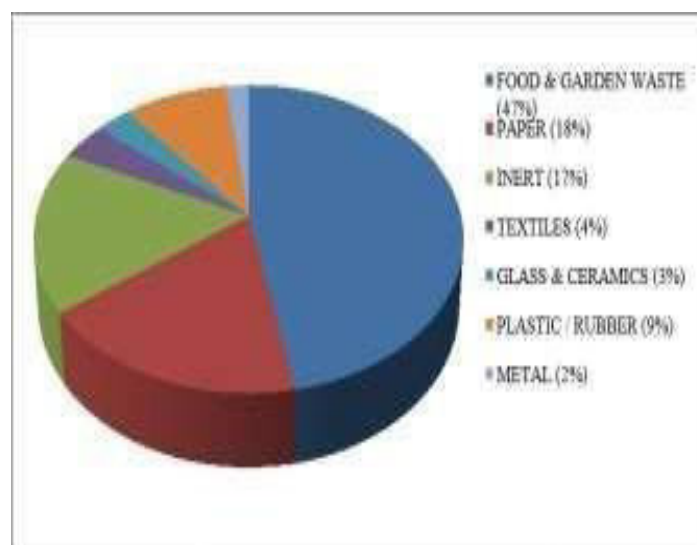


Fig (a) : Current Analysis of MSW cotton market Yavatmal



## II. METHODOLOGY

Waste from various sectors of the community collected, mixing, and preparation of a 1kg sample using the quartering method characterization and calculation of percentage of each component of the wastes. Secondary data which relies on waste generation, collection and disposal methods gathered from the Cotton market area Corporation.

Composting: Kitchen and wet waste was converted into compost through vermicomposting.

Biomass Briquettes Biomass briquettes is a biofuel substitute for coal and charcoal. Biomass briquetting converts agro and forestry waste into bio-coal, which is regarded as ecofriendly renewable energy that promotes environmental health and economic sustainability.

### Waste Management Plan

This phase focuses on implementing an effective waste management plan for Cotton market area , ensuring the proper collection and disposal of municipal solid waste (MSW). The plan is organized into the following key units or centers:

- a) Control station
- b) Collection and segregation unit
- c) Waste separation unit
- d) Recycling unit

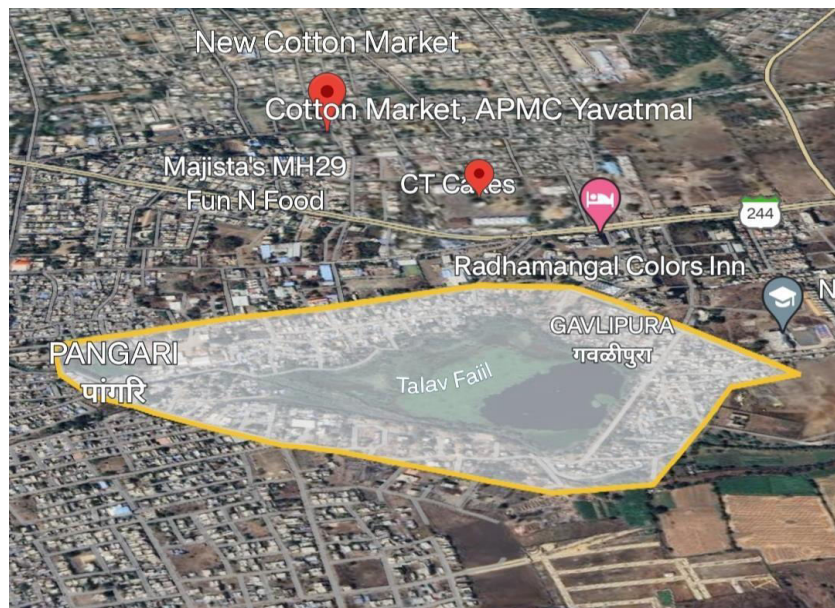


Fig (b) : Waste Management Plan

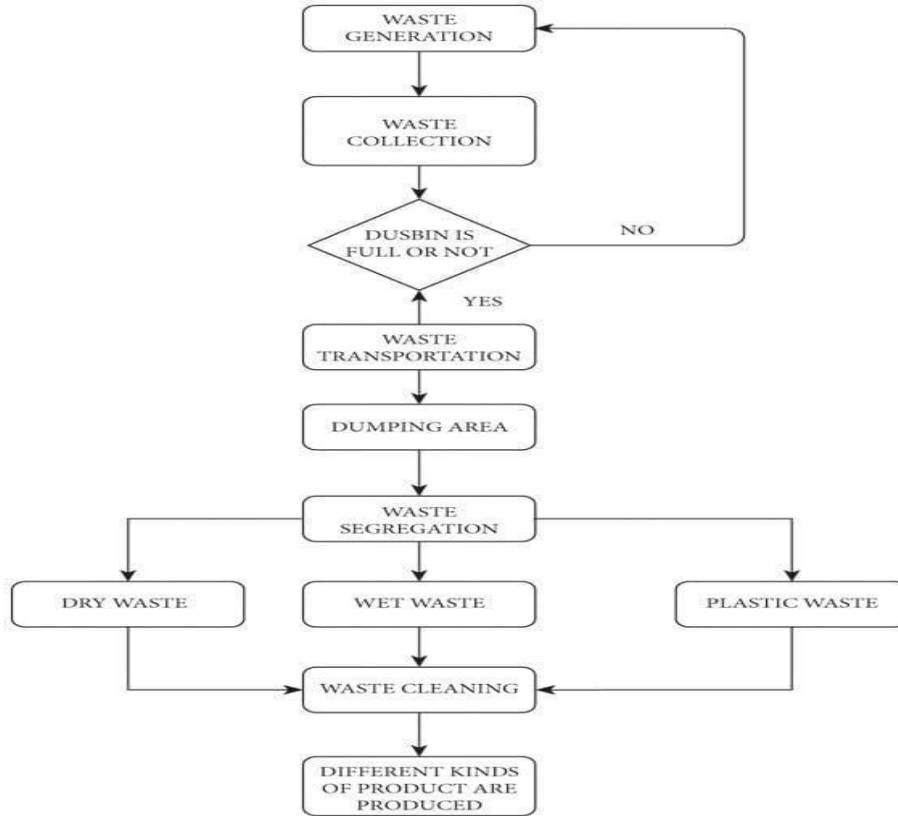


Fig (c) : Flow chart of waste management

### III. PLANNING AND EXCAVATION

During the period it is planned to work on the implementation of our project. There are next for the discuss in nagar parishad yavatmal for the situation in particular area of waste management and transportation system. Otherwise collecting the report on nagar parishad yavatmal management solid waste, per day how much collecting solid waste. and next for the study in report on nagar parishad and for the particular area wise and situation wise provided dustbin for different types of shape and size.



Fig (d) : 100 Liter capacity Dustbin stand

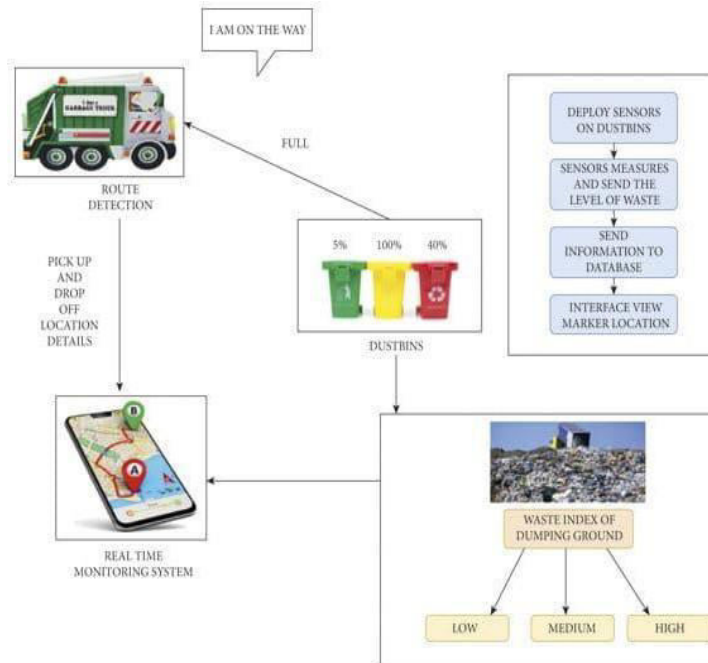


Fig (e) : Process of transportation waste

#### IV. CONCLUSION

- Adequate source segregation: Better knowledge has led to proper waste segregation at source, which thus has better efficiency in subsequent treatment stages.
- It gathers information about waste, which the system automatically uploads in real time.
- The system provides recycling capacity in which waste is converted into usable products.
- Additional features that may be made available on the website are vehicle tracking, where a person would get to track the location of collection vehicles.

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