

A Study On Solid Waste Collection And Treatment In Kollam Corporation

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(I) INTRODUCTION

Solid waste management has been an real issue in our world today most of the developed countries cracked this problem and are making money out of the solid wastes, but the third world nations or developing nations face this problem. The problem is faced in every phase of the solid waste management like from collection to treatment. In this case of Kollam city a prominent tourist place in the state solid waste gets accumulated in several parts of the city.

The municipal corporation boasts of a good waste collection system with enough collection points all around the city, 60% of solid waste is from house holds so if the system works properly as they say Kollam should be the cleanest city , but as we can see its not . So I am trying to study what goes wrong where.

The purpose of the research is to find answers for these questions. (i) How is the collection process done is the collection done in an everyday basis, Or is it just left

there to accumulate .(ii) Are there enough waste collection points in the city is it maintained properly does the public use it properly . Collection from collection point is done properly. (iii) Is the public aware of it, If not why public is not aware about it, If yes Does public use the collection points properly, If not why they do not use the collection points. Is treatment of waste at origin is possible. How many of the house holds practice treatment at the origin

Importance of collection and treatment of waste

We produce waste from various sectors like from house hold wastes to Industrial wastes if properly managed we can reuse this wastes and which is most economical and environment friendly. Solid waste could be a major source of income if managed properly, if not taken care of it could be a serious issue, which can cause serious troubles like epidemics and these wastes could pollute the natural resources

like air water and land. Improper management of waste could also lead to serious pollution . Open burning of waste releases several aerosols in the air which can carry pathogens from decaying waste . If dumped into a water body it could lead to pollution of several other water bodies and underground water too



If not treated properly the solid waste could cause severe aesthetic nuisance to the society in the form of smell and appearance. This could not be afforded by a state that mainly depends upon the tourism sector for income. Thus waste management is a serious issue faced by the main cities in kerala.

Methodology

The aim of the research was to know about the collection and treatment of waste in Kollam Corporation. The data concerning waste management were obtained from Kollam Municipal Corporation. It was evident from the figures that the lion share of the solid waste came from the house holds so I decided to concentrate on the house hold wastes in kollam city

(II) SOLID WASTE MANAGEMENT IN KOLLAM CORPORATION

Kollam is a coastal city on the banks of Ashtamudi lake it is the fourth most populous city in Kerala after Thiruvananthapuram, Kochi and Kozhikode.^[5] The city has a total area of 73.03 Km² with a population of 397,419 according to 2011 census^[4]. The number of households recorded is 85,081^[3]

Collection of Waste

The segregated waste from house holds and shops are left at nearest open temporary storage points in the morning from where it is collected by municipal staff^[2]

There are 260 waste collection points located with in the M C area using a variety of methods for the primary collection And storage of solid waste comprising: (i) open storage points;(ii) concrete cylindrical bins: (iii) small steal bins. All bins are emptied manually.



Secondary open collection point are open places of waste

disposal conveniently identified by the conservancy staff for waste disposal from house holds, street sweepings and drain cleanings. These are spread all over the city where waste is stored openly prior to being collected and transported for disposal.^[2]

‘Concrete cylindrical bins have been placed in residential areas but are mostly phased out due to difficulty in emptying.’^[2]

Transportation of Wastes

The KMCs health department has a fleet of 26 vehicles of which 4 vehicles are of its own. The remaining 22 are hired lorries.^[2] And 55 pick up auto rickshaws for door to door collection of segregated wastes of which only 5 are functioning and collection is done only in 5 out of 55 wards^[1]. These 5 wards are located in the prime areas of the city. The waste collected from the 5 wards is treated in around 9 biogas plants located in different parts of the city. The nearby shops and households use the biogas generated. The collection of waste in the remaining 50 wards is not regular. The reason for non-collection of waste from these 50 wards is agitation by the residents of these wards towards implementation of a municipal solid waste (SWM) project at Kollam.^[2]

Street Sweeping

The city has around 200 sanitation workers who are on the rolls of KMC. Around 60% of them are deployed for works related to drain cleaning left 40% for works related to sweeping^[1]

Street sweeping is done under the supervision of sanitary inspector and health department. Only main roads and city centers are cleaned on a daily basis. Street waste is collected in small heaps and removed by small hand carts.^[1]

Disposal and Treatment of Wastes

KMC is operating a municipal waste composting plant and disposal site at kureepuzha 6km away from the city functioning since 2002. A total of 30-35 Mt of solid waste is transported to the plant out of which 15-20 is converted into compost whatever left is disposed into trenches which is then covered with clay^[2]

(III) CURRENT SITUATION

The current situation of solid waste management at KMC includes non-functioning of a solid waste management plant and 260 collection points around the city. There is no routine planning for the collection and transportation of waste from different parts of the city.

Collection

‘Vehicles collect waste from open storage areas/dustbins as and when required especially in residential areas. These sites are often attended to more on the basis of the complaints received.’^[2]

But most of the open storage points are not functioning except for one in Pollaythode people residing near to the collection point use it but the collection point is not cleaned regularly, the waste gets accumulated there. 4% of the residents know about the collection points in the city. Out of the 55 pickup auto rickshaws and only 1 pickup auto rickshaw is making its rounds’ now all other vehicles are not functioning and are rusted.

The door-to-door collection of waste is done only in Kaddappakada and its vicinities. The collected segregated solid wastes are transported to bio gas plants situated in various parts of the city. Their are 3 biogas plants and 1 aerobic composting unit situated in the city.

Street sweeping is done under the supervision of sanitary inspector most of the waste collected is burned in small heaps and rest of it is collected in small hand carts and transported to biogas plants Waste from the shops is also collected during the street sweeping. Since the sweeping is not done in the small roads of the city the waste from the shops get accumulated in the roads .

Since the waste treatment plant at Kureepuzha is not functioning and there

are not enough bio gas plants in the city the waste collected from sweeping is burnt in the nearest barren land they could find.



House Hold Wastes

70% of the solid waste in Corporation is from house hold waste since the collection of wastes from residence is not done properly most of the domestic waste s ends up in the streets or barren lands in the city.



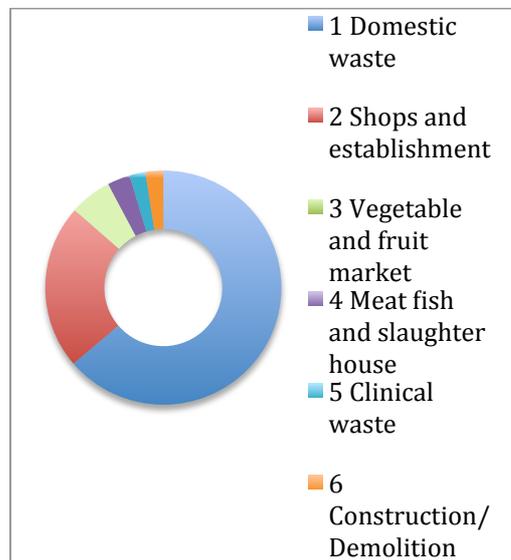
Aerobic composting plant installed at kappalandi mukku

The corporation has installed aerobic composting unit at Kappalndi mukku for the disposal of household wastes. For disposing the waste a user has to pay 5Rs/kg of waste. But people prefer other methods of waste disposal over the aerobic composting unit because of economical

reasons

Waste Generation in Kollam

Sl. No.	Source of Waste Generation	Waste Generation per day(MT)	Percentage to the Total
1	Domestic waste	54.80	63.76
2	Shops and establishment	14.55	22.73
3	Vegetable and fruit market	3.70	5.78
4	Meat fish and slaughter house	2.00	3.12
5	Clinical waste	1.40	2.18
6	Construction/ Demolition	1.55	2.43
	Total	74.00	100.00



4% out of the randomly selected households from the various parts of the city used the open storage point at pollayathode even though the point was

not cleaned regularly residents near to it preferred to use it .

28% of the house holds had the methods of treatment at origin.. Treatment at origin includes biogas plants, pipe compost, compost pit, bucket compost etc. out of this 17% use biogas plant and rest use other methods

27% of house holds proffered to throw wastes at road sides 20% of them complained about the lack of space to use biogas plant none of them knew about pipe compost.

41% the house holds used non scientific methods of disposal like disposal at drainage burning the non segregated wastes the practice of burning the waste could cause serious health problems and blockage of drains and eventually in monsoon this leads to the overflow of drains and seeping of waste water from ill treated waste and concluding in the pollution of water bodies and land.



Most of the people were illiterate about the treatment at origin method and had wrong information's about them

There are Scheme's introduced by KMC for treatment at origin methods



Bio gas plants of $1M^3$ and $.5M^3$ with a subsidy of 80% . and pipe compost distributed by municipality at a cost of 90Rs. But most of the residents of the city are unaware of these schemes.

(IV) CONCLUSION

The kollam as the 4th most populous city in kerala it has its own problems with waste management as any other populated city in India. The issue faced by the city lies in the institutional structure and system followed by the corporation for collection and treatment of waste.

Suggestions

As said before the major portion of the solid waste comes from the house holds so if the domestic waste could be treated at the origin it could solve half of the issue. Even though there are schemes offered by the municipality for treatment of domestic waste at origin the city residents are unaware about that. With the participation of residents association and other welfare society municipality could solve the issue of domestic wastes.

Introduction of new waste bins and proper segregation of wastes and With a proper

study on the existing system and problems identified in collection and treatment of solid a new flawless system could be designed where the resources and facilities offered by the municipality can be used properly.

(V) REFRENCES

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- [5]https://en.wikipedia.org/wiki/Kollam#cite_note-2