

MUNICIPAL SOLID WASTE MANAGEMENT OF SHIRUR ANANTPAL TOWN : A CRITICAL REVIEW

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Abstract - In the 21st century of modern development with the progress of industrialization and civilization the problem of generation of large quantity of solid waste is become a major concern in the urban areas. Municipal solid waste management is an obligatory function of Municipal Corporations, Municipalities and other local village administrative bodies in India. It involves activities associated with generation, storage, collection, transfer and transport, processing and disposal of solid waste. The present paper is an attempt to studies on critical review of municipal solid waste disposal system in Shirur Anantpal town from Latur District of Maharashtra state. It also highlights the shortcomings in existing waste management system and recommendations for effective waste disposal system.

Keywords: *Municipal Solid waste, Collection, transportation, disposal, Shirur Anantpal.*

Introduction - The 'Municipal Solid Waste' includes commercial and residential waste generated in municipal or notified areas in either solid or semi-solid form, excluding industrial hazardous waste but including treated bio-medical waste (MoEF, 2000).

Management of solid waste is become a major challenge for the administrators, engineers and planners. Huge volume of generated solid wastes is need to be collected, transported and finally disposed off scientifically.

Municipal solid waste management is an obligatory function of Municipal Corporations, Municipalities and other local village administrative bodies in India. It involves activities associated with generation, storage, collection, transfer and transport, processing and disposal of solid waste (More *et al.*, 2009).

Solid waste of each municipal corporation is diversified in nature and highly dependent on the type of area from where it has collected. The quantity and characteristics of solid waste vary from place to place; factors that influence the quantity and composition are the average

income level, the sources, the population, social behavior, climate, industrial production and the market for waste materials (Yadav and Linthoingambi, 2009)

The poor waste management is associated with increased health problems ranging from epidemics of vector borne or food borne diseases. The effects of such health hazards are difficult to quantify because of limited epidemiological studies (Upadhyay *et al.*, 2005).

Database management is an integral part of the solid waste management system. Availability of precise and reliable data is of utmost importance in the planning and design of any environmental system. The data should not only be available in records but should be instantaneously accessible to the planners and engineers. The importance of easy accessibility cannot be over emphasized. Many of the data are constantly changing and need to be regularly updated (Tyagi, 2008).

Shirur Anantpal is a town and headquarters of Shirur Anantpal Taluka in Latur district. In 2016 the town got a status of Nagar Panchayat. A per 2011 census. The population of town is 10417 (Census, 2011) with 1820 families. It consists 17 wards. Town comprised 2974 Households, 1003 shops and 3 functional halls. Nagarpanchayat is engaged in solid waste management of city.

As the city is identified under *Swachha Bharat Mission* the financial assistance is received for the waste management under 14th plan. During the year 2019-20 the budget of Rs. 88 lakhs have been allotted for the waste management.

Materials and Method - During the present investigation in order to understand the several aspects of municipal solid waste generation in study area priority has been given for the collection of baseline data regarding the solid waste management system. The direct field visit method and interview with the concerned officials of Nagarpanchayat were employed for the baseline data collection work. The solid waste

management report of the Nagarpanchayat were studied to understand the municipal solid waste management practice adopted by the Nagarpanchayat.

Existing status of Solid Waste Management system

The solid waste management system includes the various components such as waste generation at individual level or family level, collection of household solid waste, waste from market and other common public place, waste collection system from residential areas and streets and common areas, the workers engaged in waste collection (sweepers), the waste collecting peoples, waste transportation system, waste disposal system (dumping site/composting sites) and authority to monitor the waste management system.

The municipal solid waste management of Shirur Anantpal town has been studied during the study period and activities associated with the waste management i.e., sweeping of streets, waste collection, transportation of waste, segregation and disposal etc. are presented with photographs.

i) Generation : During study period it was observed that, municipal solid waste was generated from different sources viz. residential areas, commercial complexes, restaurants, educational institutions etc. Customarily the total quantity of generated waste per day is being calculated with considering the waste carrying capacity of vehicles employed for the transportation of waste and their number of trips in one day.

ii) Collection : The sweeping activity is carried out by sweepers on daily basis from 5 am to 10 am and in evening period from 4 pm to 8 pm. About 28 workers are daily engaged in the waste collection activity i.e., Door to door collection.

iii) Transport : The waste collected from houses is transported by using 14 non-motorized vehicles having capacity of 0.90 quintal and 2 motorized vehicles of having waste carrying capacity 700 quintal. The average daily waste collection is 3.65 tons/day from city area. The collected waste consists about 60% wet and 40% dry constituents. The average monthly waste collection of the city is 109.45 tones.

iv) Disposal : The collected waste is transported to the dumping area situated at Pimpalwadi site. It is spread over an area of 2023.428 sq. meter. Customarily the windrow method is used for the disposal of degraded portion of waste.

Shortcomings in existing MSW system

- i) Lack of baseline data in Shirur Anantpal Nagarpanchayat regarding the generation, collection, segregation, storage, transport and disposal process.
- ii) Lacking of appropriate and effective collection methods (separate bins) and segregation method for generated solid waste.
- iii) The open dumping of waste in corners of open plots/spaces may leads to become a food depot for stray animals and breeding grounds for vectors of communicable disease.
- iv) Contravention of the provision of the State Pollution Control Board during the transportation of waste to dumping site.
- v) Workers are not aware about the use of Personnel Protective Equipment while handling the waste.
- vi) Only windrow composting method has been employed at dumping site.

Recommendations for Effective MSW management

- i) There is an urgent need to update the baseline data regarding the generation, collection, segregation, storage and disposal techniques.
- ii) Emphasis should be given to strengthen the waste collection system i.e. separate waste bins for wet and dry waste or to use color codes to bins.
- iii) The storage at open place should not allowed to avoid the problems of epidemics and stray animals.
- iv) Nagarpanchayat should adhere with the guidelines of State Pollution Control Board regarding the transportation of waste.
- v) Inculcate the importance of use of PPE in sweepers and its regular monitoring should be carried out.
- vi) Beside the traditional waste disposal methods there is an urgent need to develop and adopt the modern and scientific techniques for disposal of waste.
- vii) Aware the citizens through media regarding the problems emerged due to improper waste management.

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